

From Milo to Milo: A History of Barbells, Dumbbells, and Indian Clubs

by Jan Todd, Ph.D.

During my dissertation research on the history of women's exercise in the nineteenth century, I kept turning up references to dumbbells, barbells, and other early resistance apparatus in unexpected places. In some instances, the printed references were surprising because of the early date at which they were published. In other instances, the references surprised me because of the manner in which the implements were used. After searching unsuccessfully for an authoritative text which would allow me to place these references in proper historical perspective, I decided to attempt the following brief history of these hand-held weightlifting appliances. I do not doubt that I may be overlooking parts of this evolutionary tale, and I welcome your additions and corrections.

Halteres, Dumbbells, and Other Early Implements

Although the ancient Egyptians, the ancient Chinese, the ancient Indians, and many other early peoples practiced resistance exercise, credit has traditionally been given to the ancient Greeks for producing the forerunners of our modern weight training equipment.¹ According to Norman E. Gardiner's *Athletics of the Ancient World*, the land that produced calf-carrying Milo of Crotona—the so-called father of progressive resistance exercise—had three weighted implements by the fifth century B.C.² The diskos and javelin were thrown for distance while the hand-held alteres or halteres were used as a jumping aide and for purposive drill. "Indeed," Gardiner wrote, "[the halteres exercises] were probably taught as a musical drill, for as we have seen, the time in these exercises was commonly given by a flute player. The jumping weights were. . . used much in the same way as dumbbells. . . for athletes are often seen swinging them in attitudes which can hardly have any connexion with jumping."³ According to Gardiner, the writings of Antyllos described three different types of halteres exercises: "bending and straightening the arms, an exercise which strengthens the arms and shoulders;" a lunging exercise with the halteres held at arms-length in front of the torso; and

an exercise in which the trunk is alternately bent and straightened.⁴

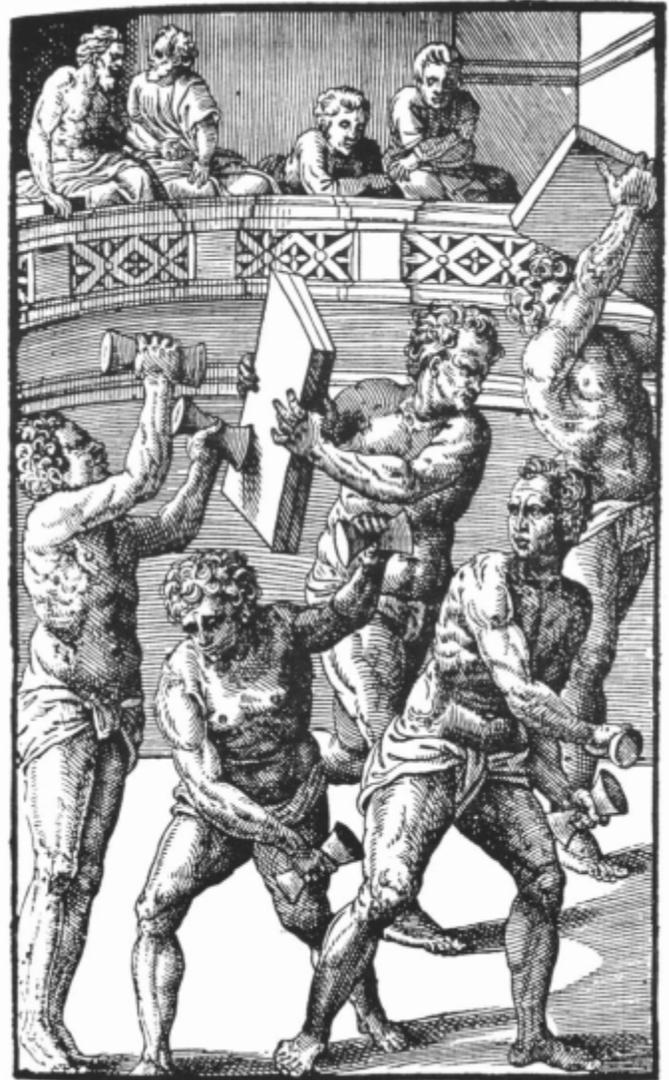
Halteres varied greatly in appearance and composition during the era modern historians refer to as Ancient Greece. According to John Blundell's *The Muscles and Their Story*, published in 1864, the author, Pausanius, "described the halteres as of roundish or oblong figure, not perfectly round and that in using them the fingers were placed as if in the handle of a shield." Another ancient writer, Blundell explained, "mentions the use of wax in this respect. . . In the palaestra these were called halteres, and to make them heavier they were sprinkled with particles of lead." Some ancient texts, Blundell reported, even applied the term *halteres* to the weapon used by David to slay the Biblical giant Goliath, which would suggest that the reference is to the object cast or thrown by the sling.⁵

In the second century A.D., the Greek physician Galen published his thoughts on the therapeutic benefits of exercise in *De Sanitate Tuenda*, a medical text which remained influential into the nineteenth century. Galen discussed using *halteres* for a variety of jumping exercises—broad jumps, high jumps, jumping from low to high places, etc.—and also described exercises which involved bearing weighted implements upon the shoulders, head and feet. According to Blundell, these "body" weights—seen in the accompanying illustrations—were called plummets and were used in exercises to systematically strengthen the body.⁶ Galen also recommended training with wooden implements; a piece of wood "with a piece of lead enclosed" should be used by gout patients, Galen wrote, until they were strong enough to use heavier implements.⁷

As they did with most aspects of Greek culture, the Romans copied the Greek methods and implements of physical training. More warlike in nature than the Greeks, Roman males trained for military fitness rather than for athletic prowess or physical beauty. Interestingly, a fourth century A.D. mosaic from the Piazza Armerina in Sicily suggests that some Roman women may have used halteres in their physical training. Although historians are not sure whether



DETAIL FROM THE "BIKINI GIRLS" MOSAIC FROM THE PIAZZA ARMERINA, VILLA ROMANA DEL CASALE. THIS MOSAIC DATES TO THE SECOND CENTURY, A.D.



THESE ILLUSTRATIONS FROM HIERONYMUS MERCURIALIS' SIXTEENTH CENTURY WORK, *DE ARTE GYMNASTICA*, SHOW DUMBBELLS, HEAVY PLATES, AND PLUMMETS BEING USED FOR TRAINING IN AN ANCIENT GREEK GYMNASIUM. NOTE THE HEAVY MUSCULATURE OF THE MEN.

the mosaic commemorates a dance troupe or a group of women athletes, there can be little doubt that the bikini-clad woman in the accompanying illustration is holding a pair of dumbbells in her hands.⁸

Although systematic exercise sharply declined with the fall of the Roman empire, Galen's writings endured, and managed to keep alive the idea of resistance implements. In 1531, Sir Thomas Elyot published the *The Boke Named the Governour*, and urged his Renaissance contemporaries to look to Galen's *De Sanitate Tuenda* for exercise advice. For exercise at home, Elyot wrote, men should try walking, "labouring with poises [weights] made of lead or other metal called in latin *alteres*, lifting and throwing the heavy stone or bar, playing at tennis, and divers semblable exercises."⁹ Other Renaissance authors also made mention of resistance training. The French philosopher Rabelais [1484-1553], for instance, described fantastic feats of strength which were supposedly performed as art of the physical training of his fictional character Gargantua.¹⁰ German educator Joachim Camerarius' *Dialogues des Gymnastica*, published in 1544, also contained references to weight training.¹¹ In the time of the first Queen Elizabeth, John Northbrooke wrote a treatise against

gambling and dancing that advised young men to "labor with poises of lead or other metal."¹²

In the sixteenth century, Michel Montaigne, the famous French essayist, described his father as a man of great vigor, "of an upright and well proportioned stature," who actively pursued fitness and strength through regular training. According to Montaigne, his father trained "with hollow staves. . . filled with lead which he was wont to use and exercise his arms withall, the better to enable himselfe to pitch the barre, to throw the sledge, to cast the pole, and to play at fence." Montaigne reported that his father also did exercises wearing "shoes with leaden soles," which he believed helped him leap, vault, and run more effectively.¹³

By far the most important Renaissance text related to exercise was Hieronymus Mercurialis' *De Arte Gymnastica Aput Ancientes*, which was first published in 1569 in Venice, Italy.¹⁴ Primarily a compilation of ancient ideas on medicine and exercise, this heavily illustrated text remained in print for more than a century with subsequent editions appearing in 1573, 1587, 1600, 1614 and 1672.¹⁵ *De Arte Gymnastica's* author was one of the most famous

physicians of the Renaissance. Educated at Padua, Mercurialis served as personal physician to Emperor Maximilian II and was knighted by him in 1573 following a successful cure.¹⁶ *De Arte Gymnastica* introduced to Western thought many of the training principles that continue to influence contemporary approaches to physical training. The book revived an interest in Galen and the training methods of the ancient Greeks: and its numerous illustrations—though primitively drawn by modern standards—suggest a bodily ideal which could only be possible through systematic, resistance training.¹⁷ The medical historian L. H. Joseph noted of *Gymnastica*, “In reality, all the books on gymnastics [physical training] of the next centuries are based on this standard work of Mercurialis.”¹⁸ Mercurialis advocated a variety of exercise methods and exercise devices. He discussed the advantages of walking, throwing the discus, rope climbing, and ball games. For purposive training Mercurialis recommended heavy balls filled with sand—forerunners of modern medicine balls—and halteres or dumbbells.¹⁹ One of the most important aspects of Mercurialis’ text was the shape of the handweights. No longer curved like the ancient halteres, the dumbbells pictured in Mercurialis’ text resemble two conical pyramids stuck together by their heads. Mercurialis also described the use of the “*tabula plumb*” [plummets], the heavy sheets of rock or lead described by Galen hundreds of years earlier.²⁰

By the beginning of the eighteenth century, Mercurialis’ efforts to revive the physical training methods of the ancient Greeks had begun to pay dividends. Dumbbell training was once again becoming an accepted form of physical training. The British poet and essayist, Joseph Addison, [1672-1719] wrote in his magazine, *The Spectator*, that he learned of dumbbell exercises from “a Latin treatise . . . written with great erudition,” a statement suggesting his indebtedness to the Mercurialis text. On 12 July 1711, Addison explained, “When I was some years younger than I am at present, I used to employ myself in a more laborious diversion . . . it is there called . . . the fighting with a man’s own shadow; and consists in the brandishing of two short sticks, grasped in each hand, and loaded with plugs of lead at either end. This opens the chest, exercises the limbs and gives a man all the pleasure of boxing, without the blows.”²¹ Although Addison’s description of these hand-held implements coincides with our modern understanding of what is meant by the term “dumbbell,” he does not use the word to refer to these wood and iron implements.

Instead, in the same issue of *The Spectator*, Addison described what sounds like an entirely different type of “dumbbell” training. “For my own part, when I am in town,” he wrote, “I exercise myself an hour every morning upon a dumb bell that is placed in a corner of my room, and [it] pleases me the more because it does everything I require of it in most profound silence. My landlady and

her daughters are so well acquainted with my hours of exercise, that they never come into my room to disturb me whilst I am ringing.”²² Unfortunately, exactly what Addison meant by this quotations is no longer clear. Does he refer to the swinging or “ringing” of an implement similar in appearance and function to our modern dumbbell or does he refer to an implement that more closely resembled a hand-held bell? Were early “dumbbells” actually what the word implies—bell-shaped forms cast from the molds used to make hand bells but either poured solid or made without a clapper or tongue so that they were “dumb?” Although every sport historian to whom I posed this question felt that this explanation for the term was the most likely, I have not found any historical discussion, or renderings, of people doing any sort of physical training with bell-shaped implements prior to 1830, and by that time the word “dumbbell” was in common usage. In fact, the only discussion of using bell-shaped implements for purposive training that I found appeared in an anonymously published 1831 text on women’s exercise entitled *A Course of Calisthenics for Young Ladies in Schools and Families With Some Remarks on Physical Education*. In that book, the author described using small bells to perform a rhythmic calisthenics movement called

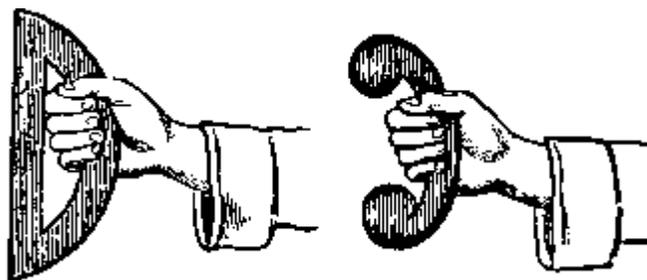
The Spanish Step in which. “bells are sometimes used, not *dumb* but *tongueless*. They are made with a wooden handle and a bell weighing about a pound. They are brought together and hit accurately so as to sound.”²³

Addison’s use of “dumb” in the second passage most likely referred to a now archaic use of the word “dumb-bell,” which *The Oxford English Dictionary* defined as “an apparatus, like that for swinging a church-bell, but

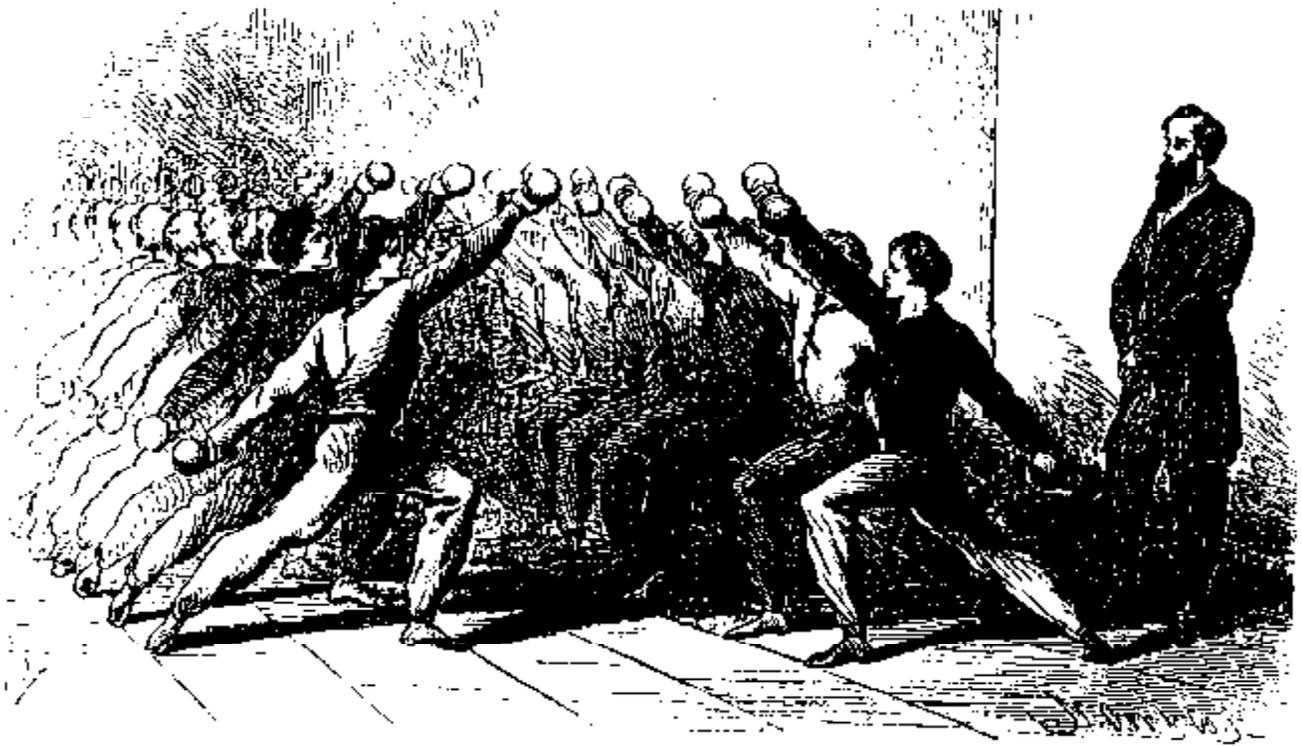
without the bell itself, and thus making

no noise, in the ‘ringing’ of which bodily exercise was taken.”²⁴ According to David Webster’s *The Iron Game*, an apparatus of this sort was used at one time at Lord Sackville’s estate at Knowle, England. “The pulley-like apparatus had four iron arms each with a leaden ball at the end, like an ordinary hand dumbbell. Although the pulley apparatus was like a church-bell and the hand weights were like hand bells, neither rang or clanged so were termed dumb bells.” Continuing, Webster added, “Pulleys were also used by those first learning bell ringing, on these occasions the clapper was tied back to produce dumb-bells.”²⁵ How common these dumbbell machines were is unknown.

These two uses of the term make it difficult to evaluate eighteenth century references to “dumbbells.” Even so, Benjamin Franklin’s surviving letters suggest that what we would recognize as dumbbell training played a significant role in his day-today life.²⁶ In a letter to his son dated 19 August 1772, Franklin explained that he favored strenuous exercises which could be done in short periods of time. The “quantum of each” type of exercise, Franklin wrote, could be judged by the amount of warmth it produced in the body. “There is



EARLY HALTERES, PRECURSORS OF
MODERN DUMBBELLS.



THROUGHOUT THE NINETEENTH CENTURY, LIGHT DUMBBELLS WERE USED FOR GROUP EXERCISE CLASSES. THIS ILLUSTRATION, FROM J. MADISON WATSON'S *HANDBOOK OF CALISTHENICS AND GYMNASTICS*, PUBLISHED IN 1864, SHOWS A GROUP OF YOUNG MEN PERFORMING A "GYMNASTIC CHARGE" UNDER THE WATCHFUL EYE OF THEIR INSTRUCTOR.

more exercise in one mile's riding on horseback than in five in a coach and more in one mile's walking on foot than in five on horseback," he explained. Dumbbell training, he told his son, was an excellent way to produce bodily warmth. "By the use of it, I have in forty swings, quickened my pulse from sixty to one hundred beats in a minute, counted by a second watch, and I suppose the warmth generally increases with quickness of pulse."²⁷ In another letter, written in 1786 when he was eighty years old, Franklin answered a friend's query about his longevity with the statement that "I live temperately, drink no wine, and use daily the exercise of the dumb-bell."²⁸ While the "forty swings" suggests a hand-held implement, there is no evidence to conclusively prove that it was so. However, John Paugh's *A Physiological, Theoretical and Practical Treatise on the Utility of Muscular Exercise for Restoring the Power of the Limbs*, published in 1728, offered more satisfying proof of the use of handweights; it described dumbbell exercises similar to our modern uses.²⁹ So does Joseph Strutt's *Sports and Pastimes of the People of England*, first published in 1802. Strutt quoted both Northbrooke and the part of Addison's essay describing the hand weights in a section in *Sports and Pastimes* on dumbbell training. Strutt concluded that these types of exercises "are sometimes practiced in the present day and are called 'ringing of the dumbbells.'"³⁰

In the early nineteenth century, resistance training began to be incorporated into school physical education programs. J. C. F. GutsMuths' 1802 *Gymnastics for Youth* contained an interesting description of an implement similar to the "Weaver-stick," a device twentieth-century lifters have used to test wrist and forearm strength. GutsMuths' implement consisted of a pair of wooden staffs six-feet in length and notched at regular intervals.³¹ Each had six inch han-

dles. One to two pound weights were then suspended from the notches and moved further out the staff as wrist and shoulder strength increased. Where the Weaver-stick test required that the arm be kept straight down at the side so that the weight would be raised by flexing the wrist upward GutsMuths' devices were used in the manner of a deltoid raise. "The person lifting is to stand upright, with his breast projecting forward; hold one of the instruments in each hand, with a straight arm; raise them slowly, both together, a little above the horizontal line; and let them down again in same manner. In the repetition of this exercise, the weight is to be moved further and further [away from the body] as long as the strength of the arms will admit."³² To further increase upper body strength GutsMuths advised holding sandbags either at arms-length in front of the shoulders, with the arms out to the sides in a crucifix position, or with the arms down at the sides.³³

By 1828, Charles Beck, the German physical educator who helped introduce German gymnastics to the United States, could begin a section of dumbbell exercises in his classic *A Treatise on Gymnastics* with the confident statement, "these [hand-held dumbbells] are too well known to require a particular description."³⁴ The "gymnasticks" system Beck helped introduce to America grew from the efforts of a young German schoolteacher named Frederick Ludwig Jahn. Using GutsMuths' book and Greek athletic training as his models, Jahn began holding voluntary outdoor exercise classes in approximately 1809 near his school in Halle. From his early efforts came German gymnastics or *Turnen*, an exercise system which, from its outset, incorporated forms of resistance training. Beck's book, which was largely responsible for introducing the German system to America included directions for seventeen dumbbell exercises, a descrip-

tion of the same notched stick with weights and sand-bag exercises suggested by GutsMuths, and two new innovations—an adjustable weight “dynamometron” and the lifting of a “beam” loaded with weights. Beck described the latter apparatus as a heavy beam, like a balance-beam, to which was attached a ring-handle. The beam was then placed on a stand approximately three feet high, the ring held in one hand, “the arm being stretched, and held, whilst the beam is removed from its point of gravity or loaded with weights.”³⁵ It is not clear from this description whether Beck intended the lifter to hold the beam “stretched” overhead as in a press, or, more likely, in front of the body as in a deadlift.

The “dynamometron” described by Beck consisted of a heavily built wooden box, three inches high and approximately fifteen inches square. Inside the box were partitions creating 144 one-inch squares into which identical plugs of lead could be placed to vary the weight. The four squares in the center of the box were removed to admit an eight inch handle, which was then firmly attached to the bottom of the box. Beck does not explain how to use this implement, other than to say that two dynamometrons should be used simultaneously to keep the body in balance.³⁶ Whether these implements were widely used is not known. They do appear, however, to be the first resistance appliances specially designed to incorporate the idea of variable weight.³⁷

Indian Clubs

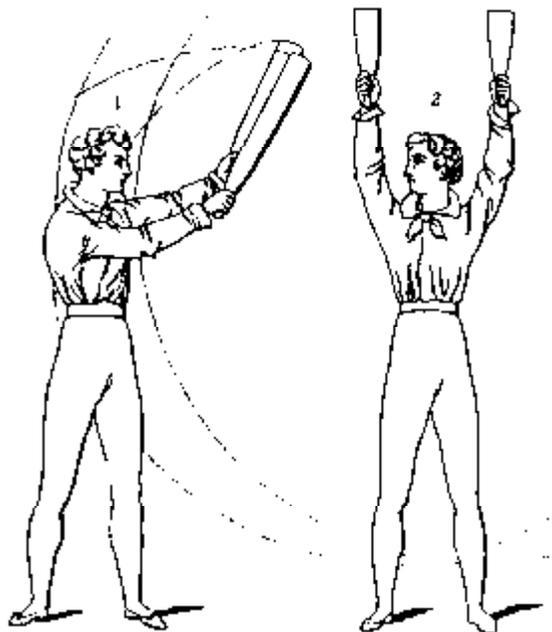
In the early nineteenth century a “new” resistance appliance, the Indian club, appeared in England America, and the Continent. In the latter part of the eighteenth century, British military officers stationed in India were struck by the fitness and muscularity of many of the Indian soldiers and policemen. Further inquiry led to the discovery that the excellent physical condition of the Indians resulted from systematic training with a variety of wooden clubs. A contemporary account by one British officer observed, “The wonderful Club exercise is one of the most effectual kinds of athletic training known anywhere. . . [It is] in common use throughout India. . . The exercise is in great repute among the native soldiery, police, and others whose caste renders them liable to emergencies where great strength of muscle is desirable.”³⁸

Naturally, many primitive cultures placed value on being able to lift and swing big clubs. In India and Persia, however, what began as a survival tactic evolved into a system of physical training which passed down through the generations and continues to be used in the late twentieth century.³⁹ Anthropologist Joseph Alter’s 1992 *The Wrestlers Body: Identity and Ideology in North India* examined this centuries-old form of physical conditioning in some detail. Alter writes, “Jon [Indian club] swinging is an art akin to wrestling. Some akharas [clubs] are devoted exclusively to jori swinging . . . In wrestling akharas, joris are swung for exercise as part of the larger regime. In jori akharas, swinging is an art in itself. From start to finish a swing is carefully choreographed.”⁴⁰ During his field work for the book, Alter witnessed a modern wrestler give a club-swinging demonstration using an eighty kilo [176 pound] jori.⁴¹ The other weighted implement Alter saw used during his time in North India is the “gada,” a “heavy round stone, weighing anywhere from ten to sixty kilograms, affixed to the end of a meter-long bamboo staff.”

The gada “is swung in the same way as the jori,” wrote Alter, “except that only one gada is swung at a time” and it is permissible to use two hands.⁴² According to Alter, “Those who swing joris and gadas on a regular basis place a higher premium on the amount of weight lifted than on the sheer number of. . . [repetitions] swung.”⁴³

When the British army decided to adopt Indian club training as part of their physical conditioning program in the early nineteenth century, they did not follow the Indians and incorporate both light-weight clubs for flexibility and quickness and heavyweight clubs for strength and muscle building. Instead, as Sim D. Kehoe observed in 1866, the British military adopted “a Calisthenic exercise with light clubs . . . combining a few of the old Swedish Cure extension movements, more calculated to open the chest, supple the figure, and give freedom to the muscles, [rather] than to develop strength or impart practical benefit greater than might be attained by numerous other light Gymnastics then extant.”⁴⁴

The person responsible for introducing Indian club exercises to Europe and America was Donald Walker, author of *British Manly Exercises* which was published in 1834. *British Manly Exercises* was perhaps the most influential book on purposive exercise published in English during the nineteenth century.⁴⁵ A compilation of information on various forms of gentlemanly exercise, Walker’s book contained both the sedate set of light-weight club exercises performed by the British army as well as instructions for more complicated and vigorous club routines. In 1835, Walker made a second contribution to the history of club training by introducing the “Indian sceptre” in his women’s exercise book, *Exercises for Ladies Calculated to Preserve and Improve Beauty*. Sceptres were merely smaller and more ornamental versions of the Indian club and weighed approximately two pounds each. Walker hyperbolically



INDIAN CLUB EXERCISES FROM DONALD WALKER’S *BRITISH MANLY EXERCISES*.

called sceptre exercises “the most useful and beautiful exercises ever introduced into physical education,” maintaining that they had “vast advantages over the dumbbells” for women.⁴⁶

Although Indian clubs were primarily used for the sorts of light-weight calisthenics movements first popularized in Walker’s two books, a “Professor Harrison” of London championed the use of heavy clubs, which he called “Mugdah’s,” in the 1850s.⁴⁷ The *Illustrated London News* for 14 August 1852 reported:

We learn that Mr. Harrison first began to use the clubs three years ago, at which time his muscular development was [not] regarded as being very great, his measurements being then: Round the chest, 37 1/2 inches, round the upper arm 13 7/8 inches, and round the forearm 13 1/4 inches. The clubs with which Mr. Harrison commenced weighed about seven pounds each; he has advanced progressively, until he can now wield with perfect ease two clubs, each weighing 37 pounds, and his heaviest weighs 47 pounds. The effect of this exercise on the wielder’s measurements is as follows: Round the chest 42 1/2 inches, the upper arm 15 inches and the forearm 14 inches. At the same time his shoulders have increased immensely, and the muscles of his loins, which were weak when he first used the clubs, are now largely developed and powerful. In short, all the muscles of the trunk have been much improved by this exercise.⁴⁸

Harrison was well-known as a gymnastics teacher in London and was honored by Queen Victoria for his physical prowess.⁴⁹ He authored a small training guide called *Indian Clubs, Dumb-bells and Sword Exercises*, and in approximately 1861 he met Sim D. Kehoe, a New York equipment manufacturer who became so enraptured by seeing Harrison “use the mammoth war clubs,” that he vowed to return to the United States and introduce heavy club training to America.

In 1862, Kehoe opened a shop and began manufacturing clubs in New York City. To spread the word, Kehoe—like many an enterprising businessman—sent free samples of his clubs to prominent individuals in the hope of securing positive endorsements. John C. Heenan, for instance, the most famous boxer of the Civil War era, wrote Kehoe, “As an assistant for training purposes, and imparting strength to the muscles of the arms, wrists, and hands, together in fact with the whole muscular system, I do not know of their equal. . . they will become one of the institutions of America.” Ulysses S. Grant wrote from Washington to thank Kehoe for a set of rosewood dumbbells and Indian clubs, “Please accept my thanks for your thus remem-

bering me, and particularly my boys, who I know will take great delight as well as receive benefit in using them.”⁵⁰

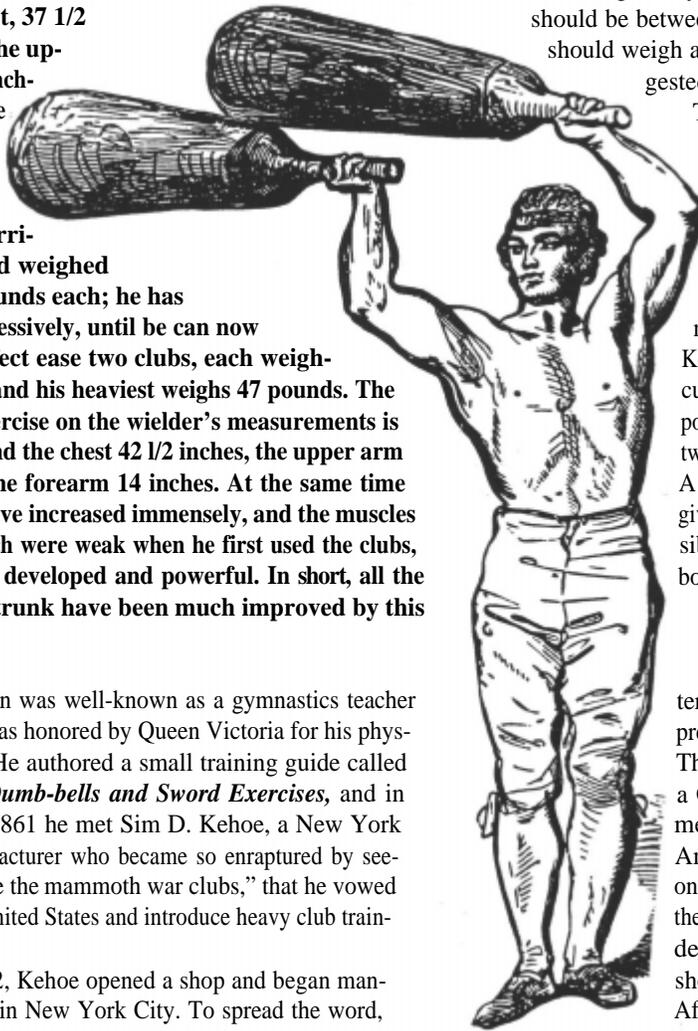
In 1866, Kehoe published *The Indian Club Exercise*, a beautifully illustrated book which contained, in addition to an easy-to-follow system of exercise for both men and women, a series of physique studies showing the benefits of heavy club training.⁵¹ Two aspects of Kehoe’s book are particularly significant. The first is his differentiation between the short, light-weight “bat”—a one to four pound club used in calisthenics drills such as those popularized by Donald Walker and American exercise proponent Dio Lewis—and what Kehoe called the “long Club, or Indian Club proper.” Long clubs might vary in appearance, Kehoe explained, but their length should be between twenty-four and twenty-eight inches and they should weigh at least four pounds. Most beginners, Kehoe suggested, could start with a club of around ten pounds.⁵²

The other aspect of Kehoe’s book which bears mentioning is his discussion of Indian club competitions and exhibitions. On 1 May 1866, a solid gold medal cast by the Tiffany Company was presented to J. Edward Russell of New York. According to Kehoe, a panel of judges found Russell to be the best club swinger at a gymnastics competition at Irving Hall. In another event, Kehoe reported, Charles Bennett, the “California Hercules,” gave an exhibition in which he used twenty pound clubs “in a variety of movements and held fifty two pounds in each hand at arms length, with ease.”⁵³ A drawing of Bennett, “copied from a photograph,” gives some indication of how such feats might be possible. The heavy, defined musculature of his upper body is unusual for the mid-nineteenth century.⁵⁴

The Evolution of the Barbell

In 1861, Thomas Wentworth Higginson, minister and exercise advocate, penned an article for the prestigious *Atlantic Monthly* entitled “Gymnastics.” The heart of Higginson’s article was a word tour of a German-style gymnasium—the sort of establishment Higginson believed was needed throughout America. Higginson allowed his readers to peek in on the free-hand calisthenics class: toured them past the gymnastics area where he explained the use of ladders, pommel horses, and parallel bars; and then showed them the “row of Indian clubs or sceptres.” After explaining their benefits, he took his readers to the “masses of iron, laid regularly in order of size,” a rack of dumbbells weighing from four to one hundred pounds. The dumbbell, Higginson wrote enthusiastically, was “a whole athletic apparatus packed up in the smallest space; it is gymnastic pemmican.”⁵⁵ With one fifty pound dumbbell, or a pair that size, Higginson argued, a man could exercise nearly every muscle in his body in half an hour.⁵⁶

Higginson completed his gymnasium tour with a discussion of the health lift recently popularized by Dr. George Barker Windship, the Harvard-trained physician/lecturer/gym owner/profession-



PROFESSOR HARRISON

al strongman. Higginson had only praise for the principles of heavy lifting and this praise, coupled with Windship's growing popularity, helped launch a lifting and bodybuilding boom in the early 1860s which saw a number of men besides Windship become intrigued with the amount of weight they could "put up."⁵⁷ [See "Strength is Health," *IGH* 3(September 1993)].

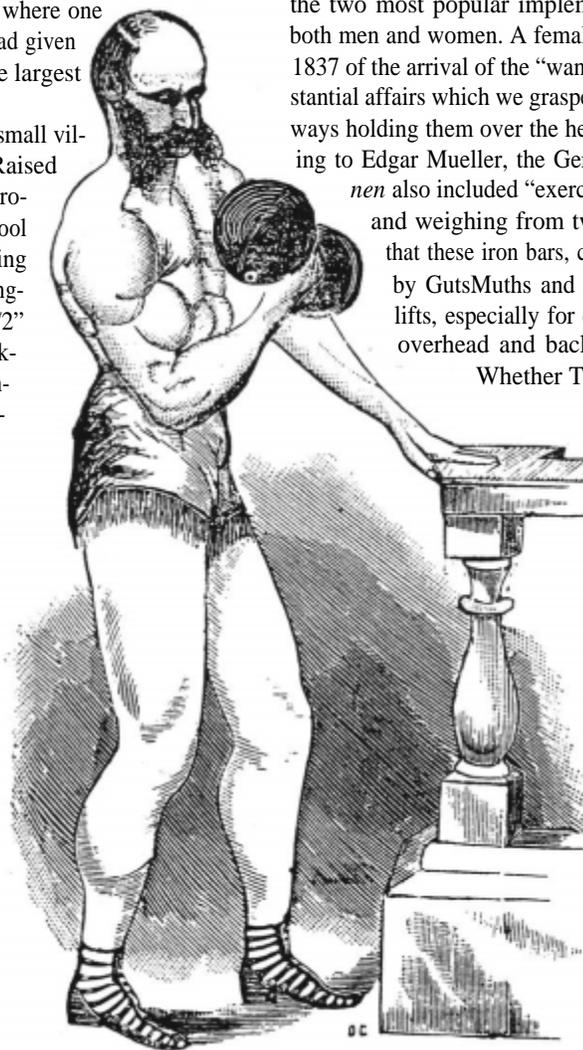
But what is missing from this obviously well-appointed gym? Barbells. There is not a single mention of this apparatus in Higginson's article nor in any other English-language book prior to 1860 examined by this author. Although the practice of heavy lifting was well established by this time, and iron dumbbells could be easily purchased in many hardware stores, the barbell was still unknown on this side of the Atlantic. To find its origins, we must look to Europe, where professional strongmen had been dazzling the public with their feats of strength at least since the beginning of the nineteenth century, and, especially to France, where one of these professionals—Hippolyte Triat—had given up the sawdust and footlights to open the largest gym in the world.

Hippolyte Triat was born in the small village of Saint-Chaptes, France in 1813. Raised by gypsies, Triat worked as a travelling acrobat up to the age of fifteen, then went to school for approximately six years before deciding to return to the stage as a professional strongman. By age twenty-two, he stood 5'10 1/2" tall and weighed two hundred pounds, making him a large man by early nineteenth-century standards. In 1840, after carefully saving his theatrical earnings, Triat opened a gym in Brussels which he managed until 1849. He then moved to Paris and constructed an enormous gymnasium unlike any other in the world at the time. It had approximately ninety-five hundred square feet of space on the first floor with two tiers of balconies above for spectators. Many of Paris' most distinguished citizens signed up for classes.⁵⁸

Although he did not "invent" them, the first spherical-ended barbells seen by this author appear in the 1854 illustration of Triat's gym included in French historian Edmund Desbonnet's *Les Rois de la Force*.⁵⁹ As can be seen in the accompanying enlargement of this drawing, the wall of Triat's gym was covered with barbells, all of which appear to be of the same size. In an advertising brochure, Triat described these implements as "*Barres A Spheres De 6 Kilos*," (bars with spheres of six kilos), although he also included in his equipment list "*Gros*

Halteres et Barres A Deux Main," (Large dumbbells and bars for two hands). How heavy these large barbells might have been and how they were loaded is unknown although Triat reportedly had a dumbbell at his gym weighing over two hundred pounds. As the logo for his new enterprise, Triat adopted the emblem of a spherical barbell draped with a medallion and ribbon, a fact which suggests the importance of the barbell concept to his new gymnasium and training system. His motto was, "For the Regeneration of Man."⁶⁰

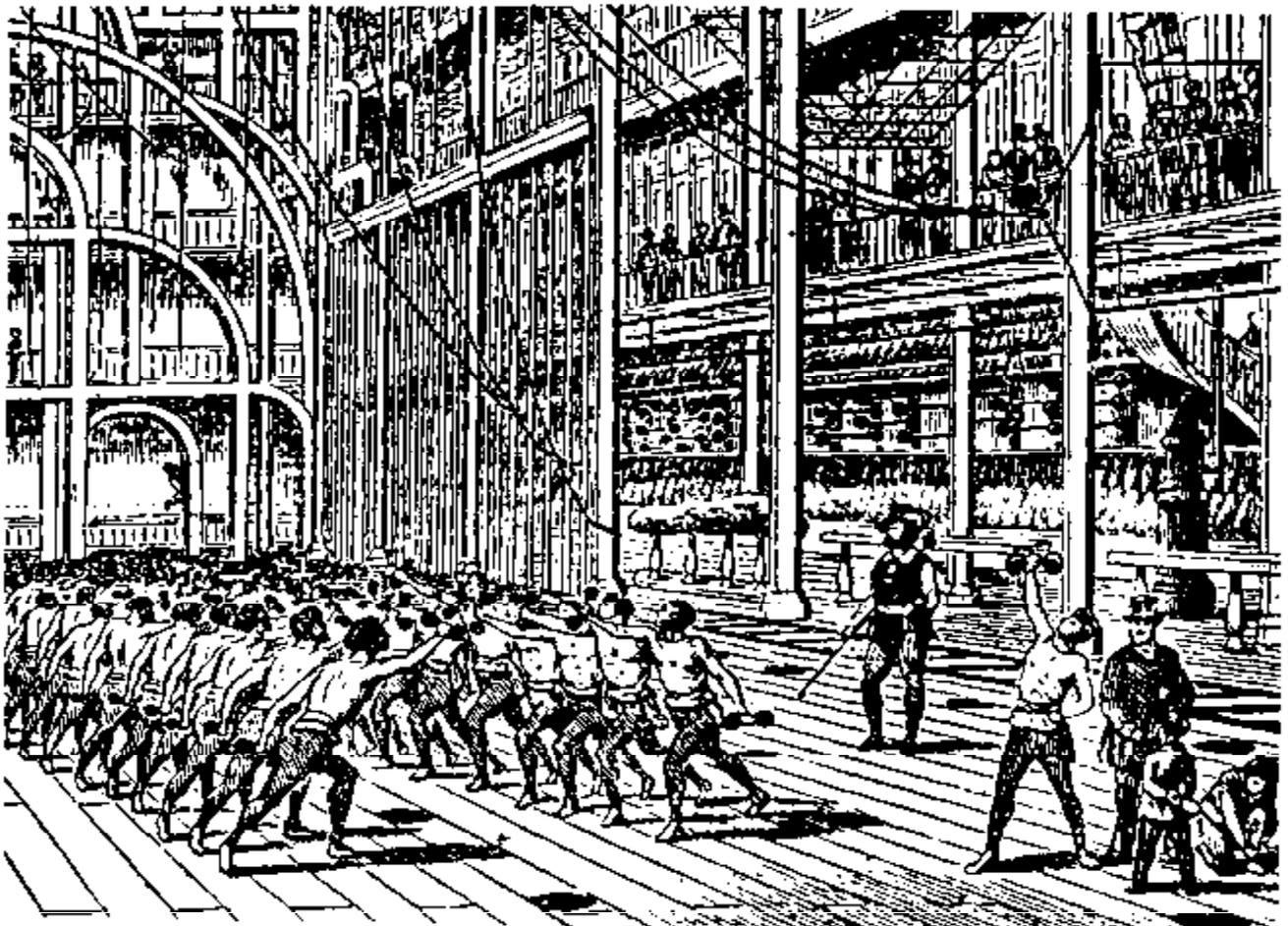
The bars with spheres of six kilos were used for group exercise classes. From the time of Montaigne, wands or light-weight bars of various sorts had been used for purposive drill by both men and women. Nicholas Andry, for instance, in his 1743 handbook on exercise called *Orthopaedia* showed a young woman training with a wooden wand.⁶¹ As calisthenics exercises spread in popularity in the early nineteenth century, lightweight wands and dumbbells became the two most popular implements for group exercise classes for both men and women. A female student at Mount Holyoke wrote in 1837 of the arrival of the "wands . . . not fairy wands, but quite substantial affairs which we grasped at either end, and carried in various ways holding them over the head, in front and back, etc."⁶² According to Edgar Mueller, the German system of exercises called *Turnen* also included "exercises with iron bars," a meter in length and weighing from two to three kilos.⁶³ Mueller claimed that these iron bars, called *Eisenstäbe*, were first introduced by GutsMuths and were "used for different two handed lifts, especially for exercises with straight arms (in front, overhead and back)."⁶⁴



CHARLES BENNETT, THE CLUB SWINGING CHAMPION OF SAN FRANCISCO, HAD AN UNUSUALLY MUSCULAR PHYSIQUE FOR HIS DAY. ILLUSTRATION FROM ED JAMES' *HOW TO ACQUIRE HEALTH, STRENGTH AND MUSCLE*, 1878.

Whether Triat got the idea for his fixed-weight barbells from these wooden and iron wands remains unknown, but Triat undoubtedly influenced the shape of wooden wands in the last half of the nineteenth century. After 1860 or so, wands were frequently depicted with small wooden globes on their ends. In Professor Harrison's training guide, for instance, the invention of the "French dumbbell" is credited to "Trelar," who, Harrison claimed, introduced the wooden implement to the French army. From there, Harrison reported, the "French dumbbell" was adopted by many upper-class French schools.⁶⁵ *Dewitt's Athletic Exercises for Health and Strength*, a popular training guide from the 1870s also referred to wooden wands with globular ends as "French Dumbbells."⁶⁶

The earliest use of the term "barbell" seen by the author appeared in a little-known, 1870



THIS ENLARGEMENT OF A CONTEMPORARY ENGRAVING OF HIPPOLYTE TRIAT'S ENORMOUS GYMNASIUM AT 55 AND 57 RUE DE MONTAIGNE SHOWS AN EXERCISE CLASS LED BY TRIAT, WHO FREQUENTLY DRESSED AS A FRENCH CAVALIER. ON THE WALL BEHIND TRIAT ARE THE "BARS WITH SPHERES OF SIX KILOS" WHICH HE USED FOR GROUP EXERCISE.

British text called *Madame Brennar's Gymnastics for Ladies, A Treatise on the Science and Art of Calisthenics and Gymnastic Exercises*. According to Madame Brennar, who ran a gymnasium in London at which women wore pantaloons for their training sessions, a "Bar-Bell" was an "appliance [that] partakes partly of the 'Wand,' and partly of the 'Dumb-bell.'" Brennar described the implements as being four to six feet in length, thicker than an ordinary wooden wand and with wooden balls on either end.⁶⁷ There is no appreciable difference between Brennar's "barbell" and Harrison's "French Dumbbells." Several other late-nineteenth century exercise manuals also referred to these wooden appliances as "barbells."⁶⁸

Although Triat used light, fixed-weight barbells for his group classes in the 1850s, the implement does not appear to have enjoyed any great popularity until near the end of the nineteenth century. Weightlifting experts Edgar Mueller and Edmund Desbonnet both contend that the Austrian Karl Rappo was the first professional strongman to use globe-ended barbells in his stage act. Little is recorded of Rappo's life except that he was born in Innsbruck in 1800 and died in Moscow in 1854.⁶⁹ A further examination of Desbonnet's *Les Rois de la Force*, our best source on the history of

nineteenth-century strongmen, revealed that dumbbells, cannons, chains, and block weights were commonly depicted in Desbonnet's section on the early nineteenth century. Barbells, however, do not appear in the illustrations until Desbonnet began describing the lives of the strongmen who worked in the 1880s.⁷⁰ The absence of iron barbells was probably more a lack of supply or difficulties in casting than a lack of interest in heavy training. As Desbonnet's book attests, a number of European men pursued careers as professional strongmen and countless others embraced the principle of heavy training for their personal workouts. According to Mueller, the Turner clubs helped spread the idea of resistance training throughout Germany in the nineteenth century, and in a few isolated pockets the lifting of heavy weights became a major focus of the Turner program. "Carl Schöbig told me," Mueller wrote, "that in Leipzig's oldest *Turnverein* [gymnastics club] . . . weightlifting with heavy globe *barbells* was practiced by the gymnasts (*Turners*) since 1865."⁷¹ Mueller explained that Schöbig's claim was based not on Schöbig's personal experience but on what he had been told by older members of the *Turnverein*.⁷² Although we do not know what sorts of implements they used, a weightlifting club had formed in Munich by 1878, and



MADAME BRENNAR'S GYMNASTICS FOR LADIES, PUBLISHED IN 1870, WAS UNUSUAL BOTH FOR ITS USE OF THE WORD "BAR-BELL" AND FOR THE PANTALOONS WORN BY THE WOMEN IN THE ILLUSTRATIONS. BRENNAR'S IMPLEMENTS WERE MADE ENTIRELY OF WOOD AND WERE OFTEN USED WITH A PARTNER, AS SHOWN HERE.

the next year a second club formed at Wandsbeck, near Hamburg.⁷³

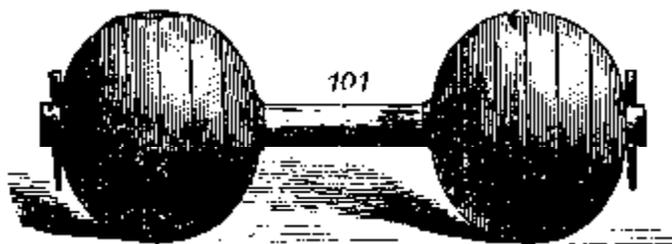
According to Mueller, the first iron barbells used in Germany were massive, heavy implements made with solid globes. These gave way in the 1870s to "hollow globical bars, filled with sand or lead." By the 1880s Mueller wrote, "hollow globe bars, filled with discs," were available for purchase in Germany. These were sold, according to Mueller, in Köln (Cologne) by the firm of Heyden, a company he believed was one of the oldest equipment manufacturers in Germany. Disc barbells were also sold in this decade by the Meyer company, located in Hagen.⁷⁴

Some historians have credited the German strongman, Professor Attila [Louis Durlacher]—who assisted Sandow in the early stages of his career and then opened a gym in New York City in 1893—with the idea of using sand or lead shot inside hollow spheres to vary the weight of barbells, dumbbells and kettlebells.⁷⁵ Although Attila's stage performances undoubtedly helped to popularize this type of implement, Boston strongman George Barker Windship is a much more deserving candidate for the honor of having "invented" shot-loading weights.⁷⁶ In 1859, well in advance of Attila, Windship decided to try to see if he could "put up" the greatest weight on record. He procured two sixty-eight pound "shells" and screwed them on a wrought-iron handle, creating an empty dumbbell of 141 pounds, which was "capable of being increased to 180 pounds by the simple process of pouring shot into the cavities of the shells, after having first separated them from the handle."⁷⁷ Windship also appears to have the best claim of being the "inventor" of plate-loading equipment. In his quest for size and strength, Windship used his considerable creativity to develop and patent several exercise devices. One of these was a plate-loading dumbbell which he began marketing in 1865. Windship's dumbbell could be adjusted from eight to 101 pounds in half pound increments; it sold for \$16.00.⁷⁸

Although Windship patented his plate-loading design in 1865, his sudden death in 1876 diminished America's interest in lifting as a form of regular exercise. What is more, many Americans blamed Windship's death by stroke at age forty-two on his heavy lifting, a fact which caused a decline in interest in strength training for several decades. During the 1880s and 1890s heavy dumbbells and barbells were nearly impossible to find in America. Peck and Snyder's *Price List of Out & Indoor Sport and Pastimes* for 1886, for example, offered a good assortment of rowing machines, pulleys, cable exercisers, and wooden clubs and dumbbells; but their iron dumbbells only went up to fifty pounds in weight. No iron barbells of any sort appeared in the catalog.⁷⁹ Even at the turn of the century, heavy equipment was not readily available in the United States. The 1902 *Sears and Roebucks Catalog*, for instance, only offered dumbbells up to twenty-five pounds in weight. Again, no barbells were available for purchase.⁸⁰

Although professional strongmen apparently found individual metal workers who created spherical dumbbells and barbells for their shows, the average man who wanted to emulate these showmen had difficulty finding weight training equipment. In America, that problem was finally solved by Alan Calvert of Philadelphia, Pennsylvania, who founded the Milo Barbell Company in 1902. Strength historian David P. Willoughby considered the advent of the Milo Company as "the greatest single impetus ever given to weightlifting in this country."⁸¹

The first devices sold by Milo were shot-loading barbells with canister-shaped "bells" on each end. To change the weight a wing-nut, shown in the accompanying advertisement from the April 1902 issue of *Physical Culture*, was un-screwed and the lid removed.⁸² How many of these \$7.50 sets sold is not known. However, customers apparently complained about the amount of time it took to change the weight by this method. In 1908, Calvert introduced a new model which he called the Milo Triplex.⁸³ In an advertising brochure from 1909, the four and a half foot Triplex appeared to be a simple globe barbell when it was fully loaded and ready to lift. However, removing the outer shells revealed Calvert's new innovation. The eight and one-half-inch spheres were divided into two sections. On one side, up to thirty pounds of shot could be loaded in the end of the globe. On the other side of the divider, iron plates from twenty-five to two and a half pounds could be added or subtracted to vary the weight. Fully loaded, the bar weighed 105 pounds; additional handles allowed the Triplex spheres to be used for kettlebells or dumbbells.⁸⁴



WINDSHIP'S PLATE-LOADING DUMBELL WHICH HE PATENTED ON 14 FEBRUARY 1865. THE BAR COULD BE LOADED FROM EIGHT TO 101 POUNDS IN HALF POUND INCREMENTS.

One of Calvert's main rivals in the exercise equipment industry was British strongman Thomas Inch, a man historian David Webster called "the first to introduce plate barbells and dumbbells."⁸⁵ Inch was an enthusiastic advocate of plate-loading barbells but, as previously noted, he did not invent them. Born in 1881, Inch was active in the British physical culture community by 1910. He ran a gym, sold equipment and wrote at least twenty short books.⁸⁶ However, he rarely included copyright dates in his texts, making it difficult to trace his career. Nonetheless, Inch was an early, and important contributor to the development of the barbell. In *Scientific Weightlifting*, one of his earliest texts, Inch advertised a variety of barbells which he sold through the mail. Like Calvert, he offered a combination globe/plate-loading barbell, although Inch's bar had the plates on the outside of the globes. He also offered a variety of plate loading sets, claiming, "I am the only person supplying these bells."⁸⁷ Inch strongly favored plate-loading barbells and claimed that "The advantages of having a set of plates with a bar to fit, and collars, etc., are not generally understood. . . One bell may cover a great number of lifts and thus a great saving is effected in both space and money."⁸⁸ Calvert, who also sold plate-loading bells by 1909, did not agree. "The principal defect of bells that load only with plates," Calvert wrote, "is that they cannot be increased in weight except in jumps of 5 lbs or more. In order to practice weightlifting safely and successfully you *must* have a bell that can be increased one ounce at a time if necessary—and this alone makes it unwise to use a bell which loads only with iron plates."⁸⁹ Despite his personal preference for spherical weights, Calvert was astute enough to sense the change in training methods which plate loading barbells represented. By 1910 his catalogue also included four different plate-loading sets which were modern in appearance and lacked the spherical shells at each end.⁹⁰

In Germany, exposed-plate barbells and dumbbells were first introduced by Josef Markl, a former member of the Rasso Trio, who "constructed so-called ring-bars . . . with huge thick discs" in 1889.⁹¹ According to

Mueller, at least three German companies quickly stole Markl's idea and began manufacturing disc-loading barbells. Heinrich Meyer's equipment company in Hagen, Westfalen, sold a set in which all the plates were of the same height. Hermann Fechner of Dresden-Trachau and Hermann Stein of Magdeburg also manufactured plate-loading barbell sets in the 1890s.⁹² Another early reference to plate-loading barbells can be found in *The Official Gazette of the U.S. Patent Office* for 1889. Patent number 405,128 described an "Exercising Bar," invented by Samuel B. Stockburger of Canton, Ohio. Stockburger's barbell consisted of a bar made of "spring material of such length to be grasped by two hands, the removable weights. . . and means for attaching said weights." Stockburger appears to be the first person to suggest using a flexible bar for weightlifting. The illustration accompanying his patent application shows five plates on each end of the bar. All are of the same height but their thickness varied considerably.⁹³

Conclusion

Throughout the twentieth century, a host of exercise entrepreneurs have contributed to the evolution of the plate-loading barbell. Theodore Siebert of Germany began marketing his *Siebert's Universal-Scheibenstange* (Universal disc loading bar) in 1901. In 1905, Franz Veltum of Fechenheim, Germany, introduced the Veltum-Barbell, which, according to Mueller, was the "first revolving-type barbell."⁹⁴ In 1910, Veltum's revolving barbell began to be manufactured by the Nürnberg-based equipment company of Kaspar Berg. The Veltum-Barbell was soon known as the Berg-Barbell or *Berg-Hantel* and its sales helped the Berg company become the most successful barbell manufacturer in Germany in the early twentieth century. In 1928, Kaspar Berg introduced a new model, the first "modern" Olympic barbell. These bars, used for the first time at the Olympic Games in Amsterdam in 1928, were then copied by the York Barbell Company, the Jackson Barbell Company, and nearly all other twentieth-century manufacturers. The York "Olympic Bar" was actually copied from a set Henry "Mile" Steinborn was given in the late 1920s by Dr. William Edward Campbell, Jr., an Atlanta ophthalmologist.⁹⁵ In the early 1930s Bob

Progressive Weight-Lifting
HAS DEVELOPED ALL THE FAMOUS
Modern Samsons
NOW EXHIBITING BEFORE THE PUBLIC

And it is the ONLY SYSTEM of exercise which produces GREAT MUSCULAR DEVELOPMENT and at the same time teaches athletes to apply their strength.

In the MILO ADJUSTABLE BAR-BELL we offer an exercising device which will enable all AMBITIOUS YOUNG ATHLETES to build up physiques equal to those of professional strong men. : : : :

PRICE
\$7.50

THE MILO
ADJUSTABLE BAR-BELL
(Patent Allowed).

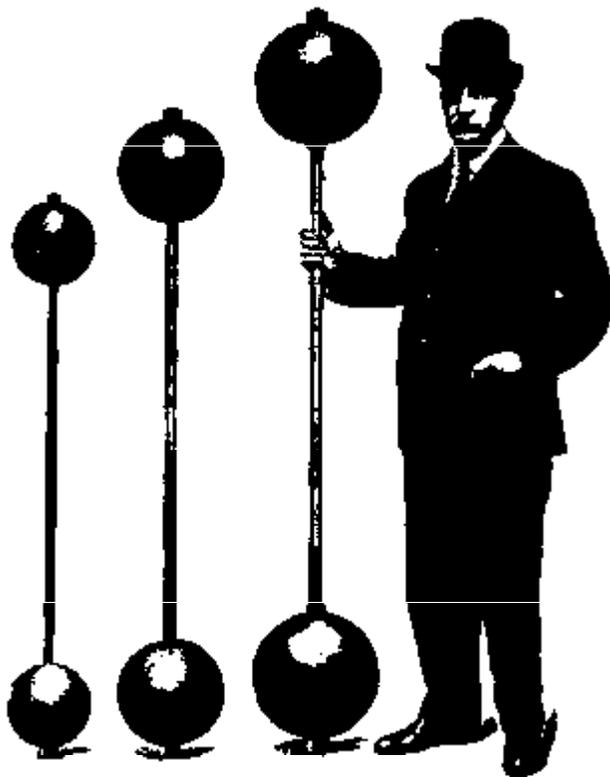
Send 2c. stamp for Descriptive Booklet to the : : : : :



Milo Bar-Bell Co.
218 Arch St.
PHILADELPHIA, PA.

Complete instructions in weight lifting with every bell.

THIS 1902 ADVERTISEMENT FOR THE MILO ADJUSTABLE BAR-BELL APPEARED IN *PHYSICAL CULTURE* MAGAZINE. DALE FRIESZ DONATED A MILO DUMBBELL, MADE ON THIS MODEL, TO OUR COLLECTION.



ALAN CALVERT, FOUNDER OF THE MILO BARBELL COMPANY, ARGUED THAT SHOT-LOADING BARBELLS, AS SEEN HERE FROM A COMPANY CATALOGUE, WERE SUPERIOR TO PLATE-LOADING BELLS BECAUSE SHOT-WADING ALLOWED THE WEIGHT TO BE INCREASED BY A FEW OUNCES AT A TIME.

Hoffman asked Steinborn to loan the set to York so that it could be copied.

In the twentieth century, plate-loading barbells quickly passed the kettlebell and Indian club in popularity and joined the dumbbell as the favored tool of serious trainers. Although the late-twentieth century has seen the invention of a number of high-tech, expensive machines which claim to be superior to all other forms of training, the simple dumbbell and barbell still reign supreme. Almost all sport scientists consider them superior to machines for building athletic power. Whether the dumbbell and barbell ever become obsolete—as the Indian club and kettlebell have—remains to be seen; however, the almost infinite adaptability and effectiveness of these simple tools suggests that they will be at the heart of the iron game for some years to come.

Notes

The author would like to thank David Chapman for his assistance in translating Edmund Desbonnet's, *The Kings of Strength*; Henry Steinborn for material on the Berg Barbell Company; Joe Roark for sending the piece by Edgar Mueller; and George H. Miller, Jr. for sending information on Calvert's patents.

¹Terry Todd, "The History of Resistance Exercise and Its Role in United

States Education" (PhD. diss., University of Texas, 1966), 26.

²The wrestler Milo of Crotona is often referred to as the Father of Progressive Resistance Exercise. According to legend, Milo built his strength by shouldering and walking with a calf every day until it was fully grown. Milo lived in the fifth century B.C. and won the championship six times at Olympia and seven times at Pythia. David P. Willoughby, *The Super Athletes* (New York: A.S. Barnes, 1970), 29-30.

³Norman E. Gardiner, *Athletics of the Ancient World* (Oxford: Clarendon Press, 1955), 6.

⁴*Ibid.*, 153.

⁵*Ibid.*, 169-170.

⁶John W. F. Blundell, M.D., *The Muscles and Their Story, From the Earliest Times; Including the Whole Text Of Mercurialis, and the Opinions of Other Writers Ancient and Modern, on Mental and Bodily Development* (London: Chapman & Hall, 1864), 165-166.

⁷*Ibid.*, 171.

⁸See Allen Guttmann, *Women's Sports: A History* (New York: Columbia University, 1991): 38, for an analysis of the meaning of this mosaic.

⁹Sir Thomas Elyot, *The Boke Named the Governor*, S. E. Lehmborg, ed. (London: J. M. Dent & Sons, 1962), 59-60, quoted in Todd, "History of Resistance Exercise," 34.

¹⁰Ellen Gerber, *Innovators and Institutions in Physical Education* (Philadelphia: Lea and Febiger, 1971). 109-110.

¹¹David P. Webster, *The Iron Game* (Irvine, Scotland: by the author, 1976), 7. Edgar Mueller, German strongman and author of *Goerner the Mighty*, claimed that Camerarius was the first to describe true dumbbell exercises. See: Edgar Mueller, "The History of the Two Hands Jerk; Clean; and Snatch-Lifting and Apparatus Used For It In Germany, Austria and France," Unpublished manuscript, Todd-McLean Collection, The University of Texas at Austin.

¹²Quoted in: Joseph Strutt, *The Sports and Pastimes of the People of England, Including the Rural and Domestic Recreations, May Games, Mummeries, Shows, Processions, Pageants, and Pompous Spectacles, From the Earliest Period to the Present Time* (London: 1845), 77.

¹³*The Living Thoughts of Montaigne*, pres. Andre Gide, ed. Alfred O. Mendel, and trans. John Florio (New York: Green & Co., 1939), 58.

¹⁴Information on the life and legacy of Mercurialis is available in L. H. Joseph, "Medical Gymnastics in the Sixteenth and Seventeenth Centuries," *Ciba* 10(March-April 1949):1041-1045 and in Jack Berryman, "The Tradition of the Six Things Non-Natural: Exercise and Medicine from Hippocrates Through Ante-Bellum America," *Exercise and Sport Sciences Reviews* 17(1989): 526.

526; Gerber, *Innovators*, 22-26.

¹⁵Hieronymus Mercurialis, *De Arte Gymnastica* (Amsterdam: 1672). Reprint edition, The Scholars Press, Ilkey England.

¹⁶Joseph, "Medical Gymnastics," 1041-42.

¹⁷Mercurialis classified exercise into two main types—preventive and therapeutic—and believed that the quantity and duration of exercise should be individualized according to a person's constitution and level of fitness.

¹⁸Joseph, "Medical Gymnastics," 1045. See also: Blundell, *The Muscles*, iv. Blundell spent seven years translating Mercurialis' work into English only to decide that a simple translation rendered a product "too diffuse and verbose to suit the modern reader." So, he organized Mercurialis' ideas into subject chapters, divested them "of obsolete argument without impairing their sense," and tried to "make them subservient to the knowledge of the

present day.” Blundell noted in his preface that “for two centuries at least,” *De Arte Gymnastica* was the major source of information about exercise in the classical period and for the proper uses of exercise in therapy and prevention.

¹⁹Gerber, *Innovators*, 22-23.

²⁰Mercurialis, *De Arte Gymnastica* 162-164.

²¹Joseph Addison, *The Spectator* 2(115) 12 July 1711 (London: Longman, Green & Co. 1898). 163.

²²Addison, *Spectator*, paragraph 7 & 8. Quoted in *The Oxford English Dictionary* vol. 4, 2nd ed. (London: Clarendon Press, 1989), 1115.

²³*A Course of Calisthenics for Young Ladies in Schools and Families With Some Remarks on Physical Education* (Hartford H.&F. J. Huntington, 1831). 45-54.

²⁴*Oxford English Dictionary*, 115.

²⁵Webster, *Iron Game*, 7. Webster found the description of this early dumbbell machine in: “Chancellor Ferguson’s paper to the Archaeological Institute in 1895.”

²⁶Upon Franklin’s death, his physician testified to the importance of hygienic living to Franklin’s longevity. William Temple Franklin ed. *Memoirs of the Life and Writings of Benjamin Franklin, L.L.D. F.B.S. &c. ...Written by Himself a Late Period and Continued to the Time of His Death, By his Grandson; William Temple Franklin* vol. 1 (London: printed for Henry Colburn, 1818), 408.

²⁷Benjamin Franklin to his son, 19 August 1772, quoted in Albert Henry Smyth, ed, *The Writings of Benjamin Franklin* vol. 5 (New York: 1905-07), 411-412; and in Todd, “History of Resistance Exercise,” 38-39.

²⁸Franklin to Le Veillard, 22 April 1786. Quoted in Carl Van Doren, *Benjamin Franklin* (New York The Viking Press, 1938), 743; “and in Todd, “History of Resistance Exercise,” 39.

²⁹*Ibid.*

³⁰Strutt, *Sports and Pastimes of the People of England*, 77.

³¹J. C. F. GutsMuths, *Gymnastics for Youth: Or a Practical Guide to Delightful and Amusing Exercises for the Use of Schools* (Philadelphia: William Duane, 1802) 316.

³²*Ibid.*

³³*Ibid.*, 317.

³⁴Charles Beck *A Treatise on Gymnastiks, Taken Chiefly from the German of F. L. Jahn* (Northhampton, Massachusetts: Simeon Butler, 1828), 123.

³⁵*Ibid.*, 121.

³⁶*Ibid.*

³⁷The ancient Greeks’ use of wax and lead particles should perhaps, also be considered a form of variable resistance training.

³⁸Quoted in: Sim D. Kehoe, *The Indian Club Exercise* (New York: American News Company, 1866). 7.

³⁹See David P. Webster, *Bodybuilding: An Illustrated History* (New York: ArcoPublishing, 1982), 123-124, for other information on club training.

⁴⁰Joseph S. Alter, *The Wrestler’s Body: Identity and Ideology in North India* (Berkeley: University of California Press, 1992), 64.

⁴¹*Ibid.*, 64-65.

⁴²*Ibid.*, 109-110.

⁴³*Ibid.*

⁴⁴Kehoe, *Indian Club Exercise*, 7.

⁴⁵Craven [Donald Walker], *British Manly Exercises; In Which Rowing*

and Sailing are Now First Discussed (London: 1834). An eleventh edition was entitled: *Walker’s Manly Exercises: Containing Rowing, Sailing, Riding, Driving, Racing, Hunting, Shooting and Other Manly Sports* (London: George Bell & Sons, 1888).

⁴⁶Donald Walker, *Exercises for Ladies Calculated to Preserve & Improve Beauty and to Prevent and Correct Personal Defects* (London: Thomas Hurst, 1835) xx.

⁴⁷Professor Harrison, *Indian Clubs, Dumb-bells and Sword Exercises* 2nd ed. (London: Dean and Son, n.d.), 9. The term “Mugdaugh” is used in *Dewitt’s Athletic Exercises for Health and Strength* (New York: Dewitt, circa 1870), 23.

⁴⁸Quoted in Russell Trall’s *The Illustrated Family Gymnasium* (New York: Fowler & Wells, 1857), 58.

⁴⁹Harrison, *Indian Clubs*, preface.

⁵⁰Kehoe, *Indian Club Exercise*, 7-9.

⁵¹*Ibid.*, 24, 27-28.

⁵²*Ibid.*, 30.

⁵³*Ibid.*, 22-25.

⁵⁴Ed Iames, *How to Acquire Health Strength and Muscle* 12th ed. (New York: by the author, 1878), frontpiece.

⁵⁵Pemmican was a form of concentrated food, developed by Native Americans. It was made by mixing together rendered animal fat cured, powdered meat; and, occasionally, berries. Because of its high nutritive values, a small amount of pemmican went a long way, and allowed its user to go a long way too.

⁵⁶Thomas Wentworth Higginson, “Gymnastics,” *The Atlantic Monthly* 7(March 1861): 289.

⁵⁷*Ibid.*, 288-289. See also the chapter entitled “Remarkable Feats of Muscular Strength,” in James, *Health, Strength and Muscle*, 60-63.

⁵⁸Edmund Desbonnet, *Les Rois de la Force* (Paris: Librairie Berger-Levrault, 1911),60.

⁵⁹According to Edgar Mueller, the German system of exercises called *Turnen* included exercises using globe-ended dumbbells up to five kilos in weight and iron bars up to three kilos in weight. Globe-ended barbells were not added to the system in Germany until the 1890s, when “One hand and Two hands Repetition-Pressing (from the hang” to overhead) with medium heavy massive short globe barbells weighing 25 kilos for one-handed Pressing and 37.5 kilos for two handed pressing. Short globe or spherical Barbells (not dumbbells) mostly used by gymnastics (Turnen) were named in Germany *Turner-Kugelstange* or *Turner-Kugelhantel* or *Turner-Kugelstab*.” From: Mueller, “History of the Two Hands Jerk,” 7.

⁶⁰Desbonnet, *Les Rois de la Force*, 59.

⁶¹Nicolas Andry, *Orthopaedia: Or the Art of Correcting and Preventing Deformities in Children* (London: A. Miller, 1743), 55-74.

⁶²Quoted in Persis McCurdy, “The History of Physical Training at Mount Holyoke College,” *American Physical Education Review* 14(1909): 144.

⁶³Mueller, “History of the Two Hands Jerk,” 7.

⁶⁴*Ibid.*

⁶⁵No information on “Trelar” could be found. Harrison, *Indian Clubs, Dumb Bells and Sword Exercises*, 34.

⁶⁶*Dewitt’s Athletic Exercises*, 17.

⁶⁷Madame Brennar, *Gymnastics for Ladies, A Treatise on the Science and Art of Calisthenics and Gymnastic Exercises* (London: by Madame Brennar at her Gymnasium, 1870), 33.

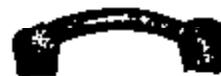
⁶⁸See, for instance, R. H. McCartney, *Gill’s Bar-bell and Wand Exercis-*

Vorteile der BERG-Hantel



Olympia-Trainierhanteln

Beliebig verstellbar, von 6 – 100 kg.



THE 1936 CATALOG OF THE BERG BARBELL COMPANY CONTAINED SEVERAL REVOLVING-SLEEVE BARBELLS, AND THREE STYLES OF DUMBELLS. THE BERG HANTEL WAS COPIED BY THE YORK BARBELL COMPANY. CATALOG COURTESY HENRY STEINBORN

es for Use in Schools with Musical Accompaniments (London, George Gill and Sons, n.d); and R. Tait McKenzie, *Barnjum Bar Bell Drill* (New York: American Sports Publishing Company, 1906).

⁶⁹Desbonnet, *Les Rois de la Force*, 32; and Mueller, History of the Two Hands Jerk," 8.

⁷⁰The first barbell photograph appears on page 148 with the story of Andre Prandeli. It was taken in 1888. The second and third are on page 167 and were also taken in the 1880s. Desbonnet, *Les Rois de la Force*.

⁷¹Mueller, "History of the Two Hands Snatch" 9.

⁷²"I have known Schöbig (1867-1947) as a precise and truth loving fellow," wrote Mueller. "Schöbig said to me many names of these Old-Timers but I've forgotten their names, I remember only one name: Faber, who was owner and founder of a factory of gymnastic-equipments at Leipzig." Ibid

⁷³Ibid.

⁷⁴Ibid.

⁷⁵Webster, *Iron Game*, 57.

⁷⁶It is not known who first used shot-loading or plate-loading weights in Germany. Mueller's article, which has no footnotes, contains only the general statements regarding the origin of these implements noted in the article. "James, *Health, Strength and Muscle*, 56. The 1873 edition of Russell Trall's *Illustrated Family Gymnasium* described a similar, wooden dumbbell, whose ends consisted of two interlocking hemispheres. See page 189.

⁷⁸"The Patent Graduating Dumb-Bell" [Advertising broadside] George Barker Windship Collection, Massachusetts Historical Society, Boston, Massachusetts.

⁷⁹Peck and Snyder, *Price List of Out & Indoor Sport and Pastimes* (New York: 1886).

⁸⁰*The 1902 Edition of the Sears and Roebuck Catalogue* Reprinted (Avenal, NJ: Gramercy Press, 1993). 338.

⁸¹David P. Willoughby, "History of American Weightlifting : Alan Calvert and the Milo Bar-bell Company," *Your Physique* 11(August 1949): 8.

⁸²Milo Barbell Company advertisement *Physical Culture* 7(April 1902): 3.

⁸³Calvert applied for a patent for the Milo Triplex on 29 December 1908.

⁸⁴Alan Calvert] *The Milo System of Progressive Weightlifting* [adver-

tising brochure] (Philadelphia, Milo Company, 1909).

⁸⁵Webster, *Iron Game*, 57-58.

⁸⁶See Todd, "History of Resistance Exercise," 321-333, for an annotated bibliography of these books.

⁸⁷Thomas Inch, *Scientific Weightlifting* (London: by the author, n.d), 26.

⁸⁸Ibid.

⁸⁹[Alan Calvert] *The Milo System of Heavy Weightlifting* (Philadelphia: Milo Barbell Company, n.d), 13.

⁹⁰[Alan Calvert] *1910 Catalogue of Adjustable Dumb-Bells, Bar-Bells, Kettle-Bells, etc.* (Philadelphia: Milo Barbell Company, n.d.), 13.

⁹¹Such a bar was used by Hans Beck of Munich in 1893, according to Mueller's History of the Two Hands Jerk" 10.

⁹²Ibid., 9-10.

⁹³Patent Number 405,128: "Exercising Bar," *The Official Gazette of the U.S. Patent Office* 47(June 1889).

⁹⁴Inch also advertised a bar with an "oil sleeve" which mimicked the effect of these revolving bars.

⁹⁵Telephone interview with Mrs. India Campbell, Atlanta Georgia, April 1995. William Campbell [1888-1975] graduated with his MD. degree from Columbia University in 1919 and shortly thereafter settled in Atlanta, Georgia. In the early Twenties, Williams met and became friends with Milo Steinborn who was at that time working as a professional wrestler. Campbell was a life-long weight trainer and physical culturist and he imported what was probably the first Berg-Hantel set in the United States for his personal use. On a visit to Dr. Campbell's home, Steinborn saw the set, admired it, and then received it as a gift from the doctor. According to his wife, India, Dr. Campbell introduced many young men in the Atlanta area to the benefits of weight training and often paid out of his own pocket for gym memberships and weight training equipment for his protégés. One of his disciples was Karo Whitfield who for many years ran a gym in Atlanta, where he influenced such men as Bill Curry, Paul Anderson and Harry Johnson. For information on Whitfield and Curry see: Al Thomas, "Bill Curry and the Gospel of Physical Fitness," *Iron Game History* 2(May 1993): 16-19.

⁹⁶Taped interview with Milo Steinborn, 22 December 1983; and telephone interview with Henry Steinborn, Orlando, Florida, April 1995.