



# IRON GAME HISTORY



Volume 8 Number 4

March 2005

## *Joe & Betty Weider Create Million Dollar Endowment for U.T.-Austin Collection*

In February of 2004, Joe and Betty Weider provided \$200,000 to the Todd-McLean Physical Culture Collection at the University of Texas at Austin, and pledged to endow the Collection over the next few years with a total of \$1 million. As most readers of *IGH* know, the Physical Culture Collection consists of archival materials related to physical fitness, sport training, purposive exercise, weightlifting, bodybuilding, physical education, and alternative medicine.

As every student of physical culture knows, Joe and Betty Weider are true pioneers in the areas of bodybuilding and publishing, and some years ago they established the Weider Foundation as a way to provide funds to the many causes and institutions they support. In the case of the pledge to the University of Texas, only the interest on the money can be used, and it has to be used to support the work at the Physical Culture Collection. The pledge was structured so that \$200,000 was transferred from the Weider Foundation to U.T. in February of 2004, and an additional \$200,000 was transferred in February of 2005. For three more years, an additional \$200,000 will be provided each February until the pledged endowment of \$1 million has been completed.

Any Iron Gamer would realize how deeply grateful Jan and I are

for this support. It will be an enormous benefit to our efforts to build the Collection and, especially, to make it available to more and more people. One of our problems through the years has been that because budgets are tight at our university, as they are at similar institutions, we've been unable to assemble the sort of staff we need in order to function as a normal library. Almost all of the work that has been done on the Collection in the 23 years since we brought it to U.T. has been done by the two of us. Over the past ten years or so, we've gotten a lot of valuable help from graduate students, especially Kim Beckwith, and this past semester the Department of Intercollegiate Athletics provided funding for a full-time graduate student to work 20 hours a week on projects related to the Collection. Some

readers will recall that in our early years at the university, the late Charles A. Smith came to the campus twice a week and helped us with filing and photo identification. Even so, we have never had any part-time or full-time archivists or librarians, and we have no secretary who works only for us. This is one of the reasons that we're sometimes slow in responding to letters and phone calls, but the Weider Endowment, especially once it's completed, will help us become what we've always dreamed of becoming—a well-



**Joe and Betty Weider look over George Hackenschmidt's scrapbook with Terry and Jan Todd. Note the painting of Joe "The Mighty Atom" Greenstein in the background.**

staffed, research library open during regular hours and able to help many more people than we're able to help now. As I've written before, both Jan and I have full-time jobs at U.T., and the work we do at the Collection is not part of our job descriptions.

Over the past 45 years, we've amassed hundreds of thousands of items in our Collection, including books, photos, magazines, posters, catalogues, art, films, videos, and artifacts on everything from the Olympic movement to professional strongmen (and women) to naturopathy to vaudeville to athletic conditioning to ergogenic aids; and it's very gratifying to have people as well-known as the Weiders acknowledge the importance of having this archive preserved in a public institution

for future generations.

For almost his entire life, Joe Weider has been working to raise public awareness of the importance of weight training and fitness. It's a well-known story, but it bears repeating here. Joe started his publishing career in 1940 at the age of 17 with a seventh grade education, a love of lifting weights, and a total of \$7 in his pocket, but it was enough to launch a modest newsletter called *Your Physique*.

In addition to publishing, of course, Joe's involvement in the fitness industry has included the creation—with his brother and partner, Ben—of the Mr. Olympia contest in 1965 and the Ms. Olympia contest in 1980. Everyone who reads *IGH* is aware that the most

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THE JOURNAL OF PHYSICAL CULTURE  
VOL. 8 NO. 4 MARCH 2005

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*Iron Game History* is published by the McLean Sports History Fellowship at the University of Texas at Austin, under the auspices of the Department of Kinesiology and Health Education. U.S. subscription rate: \$25.00 per four issues, \$40.00 per eight issues. McLean Fellowship subscriptions \$55.00 per eight issues; Patron subscriptions \$100.00 per eight issues. Canada & overseas subscriptions: \$30.00 per four issues and \$45.00 per eight issues. U.S. funds only. See page 36 for further details.

**Address all correspondence and subscription requests to:** *Iron Game History*, Anna Hiss Gym #22, The University of Texas, Austin, Texas 78712. Telephone: 512-471-4890. Fax: 512-488-0114. **Back issues are available through our website or by writing to the address below.**

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*Iron Game History* is a non-profit enterprise.

**Postmaster:** Send address corrections to: *IGH*, Anna Hiss Gym #22, University of Texas, Austin, Texas 78712.  
(ISSN 1069-7276)

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famous winner of the Mr. Olympia contest is Arnold Schwarzenegger, a seven-time title holder, mega-filmstar and the current governor of California. Joe brought Schwarzenegger to the U.S. and served as his mentor as Schwarzenegger rose to fame as a bodybuilder, and they remain close friends today. Recently, while Joe was recuperating from five and a half hours of back surgery, Arnold called him almost every day to check on his progress.

Joe founded the International Federation of Bodybuilders with Ben, who is the IFBB president, over 50 years ago. Today, Joe is anything but retired, and he still owns a line of sports nutrition products used by athletes around the world. Betty Weider has also been influential in bodybuilding, and it's a little-known fact that she's the person who came up with the title for the Mr. Olympia contest. What's more, her image is widely credited as playing a significant role in "getting women into gyms" and alleviating the stigma of a toned, muscled, sculpted female form.

A few months after Joe and Betty sent the first installment of the endowment to the University of Texas, they visited the U.T. campus. They had never been here before, but they spent most of Friday, April 16, looking through the Collection and being interviewed by various local publications. On Saturday, April 17, they were introduced by Governor Rick Perry at the opening ceremonies of the Texas Roundup Fitness Festival, and we got a clear example of the far-ranging effect of Joe's life when Governor Perry, upon meeting Joe, immediately launched into a long, heartfelt story about how he had read Joe's magazines as a boy and young man and about how much they had helped him with his self-confidence. And to show he wasn't kidding, the Governor hit a creditable double-biceps shot for Joe, to the delight of everyone who was watching.

During his 63-year publishing career, Joe's empire grew to include magazines such as *Muscle & Fitness*, *Flex*, *Men's Fitness*, *Muscle Power*, *Muscle Builder*, *Shape*, *Fit Pregnancy*, *Natural Health* and *Muscle & Fitness Hers*—many of which were translated into over 23 different languages and sold all over the world. Just over two years ago Joe sold his fleet of magazines, and he decided to give some of the proceeds back to the field that has been his passion for so long. In the inter-



**Joe and Betty Weider were special guests at Arnold Schwarzenegger's inauguration as governor of California in 2004.**

vening period, Jan and I kept that decision close to our hearts. We realize that we could never have built the Collection to what it is today without help from like-minded friends who wanted to see the history of our game preserved—friends who either gave us their own collections or allowed us to buy them at a fraction of their true value. We also knew that we could never take the Collection where it needed to go without the sort of major endowment that Joe and Betty are in the process of providing.

Here's some background: Joe contacted us and wished us well soon after we came back to U.T. in 1983 and started to donate our Physical Culture materials to the university. After 1990, when we began *Iron Game History*, Joe called me after almost every issue to talk about something we had published and to tell me how much he appreciated our little publication. His phone calls and his promise to help us have enabled us to maintain the will to continue our effort to preserve the memories of the thousands of Physical Culturists who have made significant contributions to the field. In February of 2004 he and Betty made good on that promise, and now they have given us the second installment of their million dollar endowment. Jan and I feel sure that all of you who subscribe to *IGH* join us in thanking the Weiders for sharing their philanthropy with a collection dedicated to the field in which they have made their living and their lives.

# The Conversion of Dr. Peter Karpovich

Jan and Terry Todd  
The University of Texas at Austin

One of the great tasks that faces Springfield College," Professor Peter Karpovich told a reporter in February of 1940, "is to fight these muscle builders." The men who promoted lifting, Karpovich explained, were no better than "quacks" and "faddists," and some of them, he continued, believed that heavy training could do "anything—just develop big muscles and . . . (even) all your illness will go (away)."<sup>1</sup> But just two months later, face-to-face with America's foremost "faddist"—Bob Hoffman, founder of the York Barbell Company—Karpovich had an epiphany. Following that first meeting—when Hoffman produced dramatic evidence of the beneficial effects of weight training—this internationally recognized scientist and proud opponent of heavy lifting conducted extensive research that transformed him into strength science's most eminent and visible advocate. Over the next two decades, Karpovich conducted several seminal studies that examined the bedrock on which the arguments normally cited against heavy lifting were built—that it would make a person both slow and inflexible. *Musclebound*. Karpovich then went on to collaborate with Jim Murray on the first science-based book on the subject of strength training. The Karpovich-Murray book, *Weight Training in Athletics*, revolutionized the field of training athletes and was also adopted as a textbook in many PE classes.<sup>2</sup>

The story of Karpovich's conversion from weight training's antagonist to its "promoter" began, however, not in the laboratory but at a weekly student assembly, or "Forum," held at Springfield College in Massachusetts. Karpovich, his fellow faculty members, and the Springfield student body had gathered on 4 April 1940, to watch a presentation by Bob Hoffman, publisher of *Strength & Health* magazine. Hoffman, who had several world-class weightlifters with him, was a bombastic evangelist for the beneficial effects of weight training. Little did he realize that by changing the attitude of Russian-born immigrant Peter Karpovich,

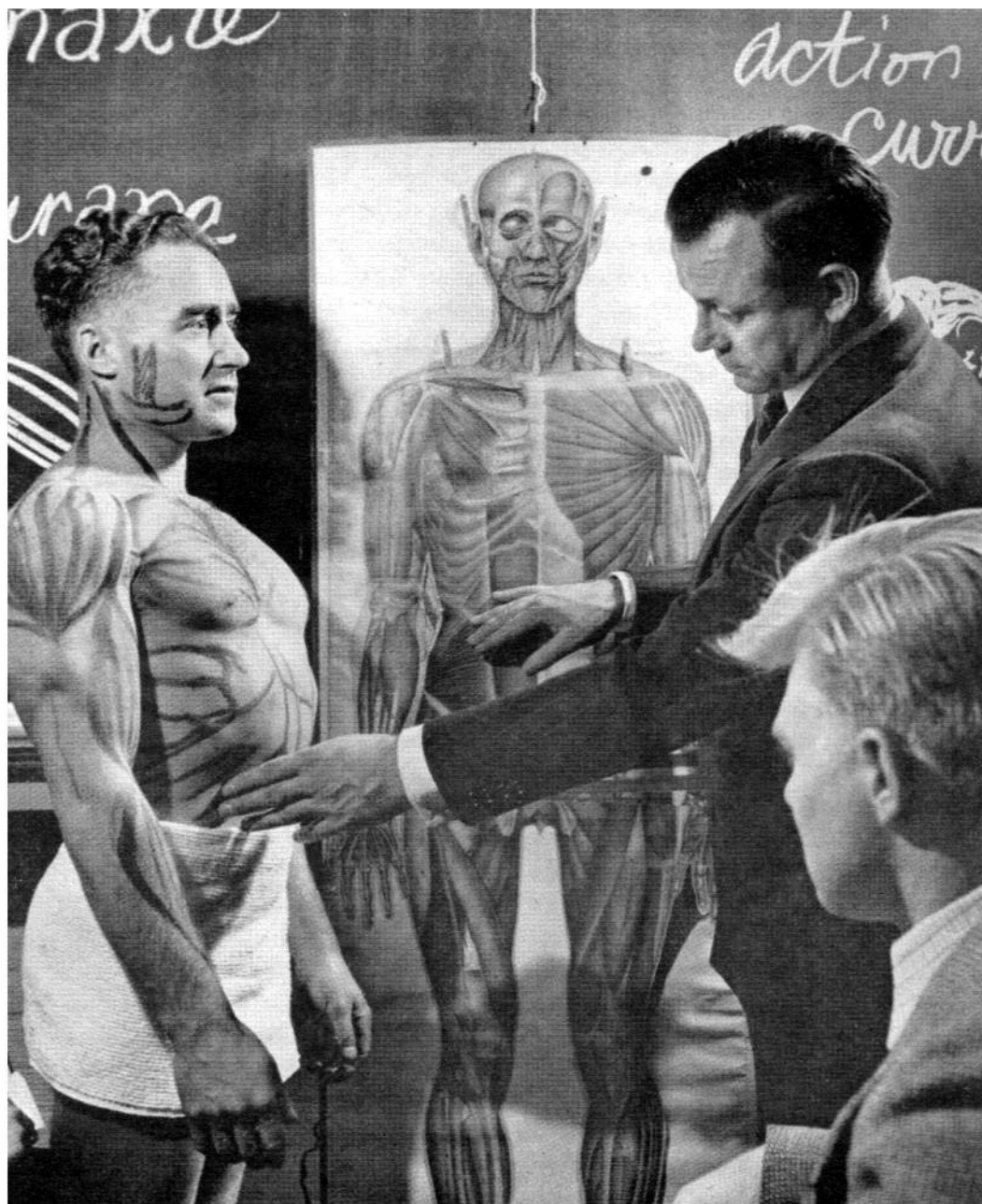
Springfield College's most distinguished professor, he would succeed beyond his wildest dreams in helping to promote his sport.

The Forum show on "The Place of Weightlifting in Physical Education" had been initiated by an undergraduate student, Fraysher Ferguson, a dedicated weight trainer and *Strength & Health* subscriber who was tired of the anti-lifting comments he heard so frequently on campus.<sup>3</sup> In an interview in July of 2002, Ferguson said, "I went to Springfield because I wanted to study physical education and I knew that at that time—because of its links to the YMCA—Springfield College was the best place in the country. But when I got there everyone seemed to be against weightlifting and I began to feel ostracized because I believed in it. I was a very good all around athlete but that didn't seem to matter. Professors would say negative things about it in class all the time, and it used to burn me up. I knew they'd never touched a barbell and had no way to know whether it worked or not."<sup>4</sup> Despite what he was taught in his classes, Ferguson continued to train and distinguished himself as an outstanding athlete at the college. So talented was he, in fact, that it was said of him that he could beat everyone at Springfield in every sport except varsity athletes in their particular specialty. Finally, in his senior year, Ferguson was able to use his personal example as an argument to the Forum's organizing committee and got the group's permission to invite someone to speak on lifting at the Springfield Forum. According to Ferguson, he wrote immediately to Hoffman, "When I sent the letter off, I didn't really expect he (Hoffman) would agree to come. I knew he was really busy but I thought maybe there might be a chance he'd be in the area and we could make it work. And to my total surprise he agreed. When I learned that he was bringing John Grimek, the current Mr. America, and John Davis and Tony Terlazzo, America's two best weightlifters, I could hardly believe it. I can remember it clearly, even though it was 60 years

ago. That show, and what Davis and Grimek did, changed more people's attitudes than anything. You couldn't believe lifting would make you musclebound when you saw them in action."<sup>5</sup>

The resistance to weight training felt by Ferguson was certainly not unusual in the first half of the twentieth century. Since Dr. George Barker Windship's untimely death in the 1870s, and even before, the professional physical education community had warned against the supposed dangers of heavy lifting and had spread the belief that weight training would make a person slow, clumsy, and less flexible.<sup>6</sup> This view was shared by almost all coaches, military fitness instructors, YMCA directors, and even by exercise physiologists like Karpovich.<sup>7</sup> In the 1930s, there were even recommendations by some national YMCA officials to ban weightlifting of any sort in all of their facilities.<sup>8</sup> However, the belief in the connection between weight training and musclebinding was not based on any particular body of scientific research. Instead, it was based on persuasive myths and hearsay (which are beyond the scope of this paper) that had become as embedded within the mindset of the sport science community as they had with the public at large.

In any case, what could have happened at the show on 4 April 1940 to change Karpovich's mind?



**Known for his innovative teaching methods, Karpovich turned student Harold LeMaistre into a living muscle chart in this anatomy class.** Photo courtesy Springfield College

According to the *Springfield Student*, the campus newspaper, Ferguson had put together a show for the Springfield students that contained a little of everything. In addition to Hoffman and the men from the York Barbell Company, Fraysher invited Bob Jones, then manager of the Milo Barbell Company, to participate. Jones was an exceptional handbalancer and he got things started that morning with a display of difficult gymnastics moves beyond any of Springfield's students, finishing with a

handstand on his thumbs alone. Then, John Davis and Tony Terlazzo came on stage to demonstrate the competition "Olympic" lifts, and as the paper put it, "The ease with which these men tossed around 300 pounds attested to their amazing strength, speed, and co-ordination."<sup>9</sup> Next on stage was Frank Eversole, whose "feats of contortion" and muscle control were warmly received, and then, finally, John Grimek strode on to the platform to pose for the spectators in the packed auditorium. As Grimek hit his poses, displaying the thickness and incredible density of the muscles that had made him Mr. America, he certainly appeared to be the very embodiment of the "musclebound" athlete.<sup>10</sup>

As Ferguson explained recently, "When the demonstrations were over, Hoffman gave only a brief pep talk about the value of lifting because he wanted to leave time for questions." And when Hoffman asked the audience if anyone wanted to ask a question, a murmur spread through the audience as Dr. Karpovich's hand went up. "Everyone at Springfield knew how he hated lifting," Ferguson explained, "and so we were on the edges of our seats wondering what he would ask."<sup>11</sup>

According to Karpovich, who tells his own version of the story in *Weight Training in Athletics*, what Karpovich asked wasn't for Hoffman to give him some sort of scientific proof of the efficacy of training but, rather, "I sweetly asked Mr. Hoffman to ask Mr. Grimek to scratch his back between his shoulder blades."<sup>12</sup>

The room went silent. Hoffman looked at Grimek. Grimek looked at Hoffman. Finally, according to John Grimek, who was a bit taken aback by the challenge, he said, "But my back doesn't itch," which drew nervous laughter from the rapt students.<sup>13</sup> "And then I went ahead and scratched my back with my right hand from both above and below and then did it with my left hand. Karpovich sat down."<sup>14</sup> John Davis then stepped to the front of the stage and also easily passed the "scratch test," at which point, according to Karpovich, "the audience roared with laughter at my expense."<sup>15</sup>

Grimek, interviewed about the Springfield show in 1993, still had vivid memories of Karpovich more than fifty years later. "Once I'd done all the scratching he wanted, I figured I'd show him who was musclebound. I did a full split for him, all the way down. Then, I leaned over and almost touched my elbows to the floor with my legs straight. We had to hear that stuff all the time, and I was just trying to make the point that it was ridiculous to believe you'd lose flexibility because you

lifted and had some muscles. Later on, John Davis did some standing broad jumps that were a lot longer than anyone at the school could do. That pretty well shut them up."<sup>16</sup>

At that time, Davis was reportedly able to make a standing broad jump of well over 11 feet—a remarkable distance for a man of 5'9" and 210-215 pounds or, for that matter, a man of any size. What's more, Davis also treated the students at Springfield to one of his favorite stunts—a standing back-flip performed with a 50 lb. dumbbell in each hand.<sup>17</sup>

The impression on the students made by Grimek's flexibility and Davis's leaps was profound and would, quite literally, last a lifetime. Proof of the staying power of the impression they made came in the summer of 1990 when the authors were in Springfield to do research at the college library. As luck would have it, there was an alumni meeting at Springfield College at the same time. There were dozens of men in attendance at that meeting who had been at Springfield in 1940 when Bob Hoffman brought Grimek, Davis, and the other lifters to campus, and five of those men were chosen at random and asked if they remembered "when the weightlifters came to Springfield." Every one of the men had a clear recollection of the event, and were happy to share it. Even though what they were remembering had happened a half century earlier, they could see it as if it had happened yesterday. Apparently, their precise recall of the event owed a great deal to the indelible impression made on all the students by the charismatic Professor Karpovich. They all spoke about his adamant opposition to weight training, and how eagerly they anticipated the fireworks they were sure would erupt at the weightlifting demonstration. They explained that when they heard the lifters were coming to campus they were excited because they knew Dr. Karpovich would challenge them. They all remembered how Grimek looked, saying that they'd seen photos of "musclemen," but that no one had even seen so much muscle on one man before. All of the five alumni remembered how the students looked at Karpovich when Hoffman asked if there were any questions. They recalled when Karpovich asked Grimek to scratch his back and said they knew he wouldn't be able to do it. But when Grimek scratched his back and then did that full split, it was as if they were learning, as one man said, that "black was white and up was down." The alumnae also couldn't stop talking about John Davis, especially the back flip he

did with the two big dumbbells. They said it looked like magic. They also laughingly recalled that after the demonstration the lifters went out with some of the students to a field and proceeded to throw and kick a football farther than any Springfield student could.

The students were not the only ones there who were thunderstruck by what the lifters could do. Dr. Karpovich himself, as has been said, was speechless, but not for long. Following the demonstration, he approached the lifters and apologized for his comment, saying that he had always been taught that heavy lifting would make a person slow and inflexible, but that what he had seen that day made him want to know more about resistance training. In short, Karpovich was inspired by the demonstration to study resistance training and learn what it really did to the body. Unfortunately, the full impact of that April assembly wouldn't be felt for a decade as World War II broke out in Europe and Springfield College decided to close its doors for the duration of the war. Karpovich's Russian roots also became a problem during this era when, after being offered the job as Director of the U.S. Army's research laboratory in Natick, Massachusetts, the Federal Bureau of Investigation raised concerns about his family members back in Russia and the offer was rescinded. However, Karpovich's reputation as a sports scientist was such that the Air Force asked him to work with them instead, and so, as a civilian, he served as Chief of the Laboratory of Physical Fitness for the School of Aviation Medicine at Randolph Field in San Antonio, Texas, from 1942 - 1945.<sup>18</sup> Although he'd done considerable work analyzing energy expenditure in swimming,<sup>19</sup> Karpovich began new lines of research during the war, on artificial respiration,<sup>20</sup> the fitness of military personnel,<sup>21</sup> the oxygen consumption of military personnel involved in various tasks,<sup>22</sup> and, as the war finally ended, on rehabilitation techniques.<sup>23</sup> Following the war, as the nation and Springfield gradually returned to normal, Karpovich had time to begin thinking again about the question of strength training. He knew, of course, that to move in that direction was not without a certain professional risk. As his former student, the distinguished past-president of the American College of Sports Medicine, Howard Knuttgen, observed, "Karpovich became interested in strength when it really was not very acceptable." According to Knuttgen, the field of exercise physiology was then dominated by people who primarily studied various aspects of cardiovascular function and strength

was not considered important to the study of physiology. "While I can't give you all the historical reasons," Knuttgen continued, "the weightlifters definitely had a negative image." In fact, Knuttgen explained, "If someone came to the American Physiological Society and was going to give a paper on strength training, people would have raised their eyebrows and asked, 'what the heck is going on here? What are they looking at that for?'"<sup>24</sup>

Luckily for the strength coaching profession, Karpovich was not a man to be put off by a few raised eyebrows. Nor was he afraid to tell the truth, even when the truth invalidated things he and other exercise scientists had taught and believed for many years. And so, in the late 1940s, when he was once again back to his normal routine at Springfield, Karpovich asked a young master's student, William S. Zorbas, to help him investigate one of the most basic principles of the musclebound mythology—that weight training made a person slower. Karpovich and Zorbas reasoned that since weight training seemed to have the greatest impact on the musculature of the arms and upper body, the best way to test the efficacy of lifting was by creating a device to test the speed of arm rotation. And so Karpovich devised a recording device, attached to a rotary handle, that was able to measure the length of time it took a person to turn the handle 24 times. Karpovich and Zorbas administered the test to 600 men between the ages of 18 and 30 using two main groups. They tested 300 "lifters"—men who had been actively engaged in weightlifting or bodybuilding for at least six months—including a number of competitors from the Senior National Championships in weightlifting. For their controls, Karpovich and Zorbas also measured 300 "non-lifters," who were further subdivided into two groups: 150 Springfield College students, who'd had the benefit of a well-rounded physical education program, and 150 liberal arts students from nearby American International College, who had not participated in regular physical training.<sup>25</sup>

The results of their research, published in *Research Quarterly* in 1951, were unequivocal. The weightlifters were significantly faster than both groups of non-lifters, leading Zorbas and Karpovich to write, "The findings of this study appear to be contrary to the common opinion of coaches, trainers, and others associated with physical education who believe that weight lifting will slow down the athlete."<sup>26</sup>

The following year, Karpovich struck another blow for the pro-lifting faction with the publication of



"Incidence of Injuries in Weight Lifting" in the *Journal of Physical Education*. In his introduction to the piece, Karpovich explained that until very recently he had shared the commonly held belief that lifting was a dangerous activity that could cause muscle and tendon pulls, hernias, and even damage the heart. His concern about this led him to question two small groups of recreational weight lifters in the Springfield area who assured him that such injuries were rare and generally trivial. Armed with this information, Karpovich decided to implement a truly monumental survey (especially in a time before computers) of the accident rate in weightlifting. Through the National YMCA Physical Education Council, numerous private weightlifting clubs, and from advertisements placed in *Iron Man* and *Strength & Health* magazines, Karpovich collected data from 31,702 participants during the year 1949-1950. He had begun the survey process with a special interest in whether lifting actually increased heart disease and hernias (frequently cited as being more common in lifters). He was obviously pleased to report that among the more than 31,000 men surveyed not one man had reported any sort of heart condition; that the hernia and hemorrhoid rate was well below the military's selective service norm, and that overall, there was only a 1.5% accident or injury rate reported. Aware that self-reported survey data are frequently suspect, Karpovich checked his figures by personally interviewing 75 weightlifters in New England and found similar numbers in that group for heart and hernia. He also reported only a 4.5% overall injury rate among the 75 New England lifters. Although the second figure was higher than the one from his large survey, it was still well below the injury rates for most other sports, causing Karpovich to conclude that weight training's reputation as "dangerous" was unfounded.<sup>27</sup>

Karpovich then examined another supporting belief of the anti-lifting platform, the notion that weightlifting primarily appealed to men of lower than normal intelligence. Through his university connections he gained access to the academic records of 392 collegiate weightlifters from three different universities for statistical analysis. Again, Karpovich found the old myths did not hold water. On the standard scale of A for excellent, B for good, C for average, and so on, the weightlifters had just over a B average. Wrote Karpovich, "Probably the same personal quality that enables a student to make himself study is also needed in order to make him stick to the systematic grind of weight train-

ing."<sup>28</sup>

Karpovich's most thorough defense of lifting appeared in the *Journal of the Association for Physical and Mental Rehabilitation* in 1954. In that piece, Karpovich laid out the most prevalent arguments against weight training—that it damages the heart, that it leads to serious bodily injuries, that it "makes participants 'muscle bound' and reduces their proficiency in other physical activities," and that it is primarily practiced by "egocentric exhibitionists, with homosexual tendencies." However, Karpovich goes on to conclude, "When ... one starts searching scientific literature for a basis for all these accusations, one will soon discover that the evidence is either lacking or inconclusive."<sup>29</sup>

The post-War years were a productive time for Karpovich. In addition to the work he did with Zorbas, he continued to work on the problem of artificial respiration, and also looked at the impact of "warming-up" on athletic performance.<sup>30</sup> In addition, he agreed to co-author the third edition of *Physiology of Muscular Activity* with E. C. Schneider, in 1948, and served as sole author of the book beginning with the fourth edition in 1953.<sup>31</sup> Nearly every collegiate student of physiology in the 1950s learned their physiology from Karpovich's popular text, which was translated into five languages and went through eight editions.<sup>32</sup>

Karpovich also had a major impact on his students in those post-war years according to Howard Knuttgen, who worked at Springfield as an undergraduate lab assistant with Charles Tipton (ACSM president in 1973) in the early 1950s. Knuttgen said about his Russian mentor, "We were both terrified of Dr. Karpovich and fascinated by him." Working on a campus with extremely limited funding and only minimal equipment, Knuttgen recalled, Karpovich had begun to enlist undergraduates like himself and Charles Tipton to help with experiments and to teach lab techniques to the other undergraduates. "We were turned on by physiology, applied exercise physiology, through our undergraduate experience there," Knuttgen explained. While they relished the opportunity to work closely with him, they also feared him. According to Knuttgen and Creighton Hale, who taught with Karpovich at Springfield between 1950 and 1955, Karpovich had a great sense of humor, but he didn't suffer fools gladly. When he gave an exam, for instance, he'd call the students into his office in groups of four or five the week after the test to quiz them about their answers. This terrified the students. When his

probing didn't produce the correct answer, Karpovich told more than one that they were getting a grade shaped like the red corpuscle, "a zero."<sup>33</sup>

Karpovich's toughness was also a hallmark of his career as a researcher who, undaunted by Springfield's limited resources for science, did some of his most important work using homemade equipment. A flour can bought in a five-and-ten cent store, for instance, became the drum in a device he called the "natograph," which was used to measure a swimmer's progress in swimming. An aluminum saucepan, borrowed from a colleague's wife, played a pivotal role in another study. His was a "junkshop laboratory," he told Jim Murray.<sup>34</sup>

Karpovich's early life had undoubtedly prepared him to deal well with Springfield's privations. Born Peter Vasilievich Karpovich in Louga, a small town about 80 miles from St. Petersburg on 6 April 1896, Peter was the sixth of nine children. His interest in exercise developed from conversations he had with his older brother, Nicholas, who took classes in gymnastics from two Springfield College alumnae, Eric Moraller and Gregorie Matchikhin, who'd been sent by the YMCA to work in St. Petersburg (later Leningrad, and now St. Petersburg again). Nicholas, the second oldest of the children, took a special interest in his younger brother, and paid for Peter to have French and Latin lessons which the family could not otherwise have afforded. He also introduced Peter to chemistry by telling him it was "magic." Throughout his teaching career, in fact, Karpovich would put on a "magic" show in his lab at Springfield during which he astonished undergraduates by turning water into "cream" and replicating the "burning bush of Moses" trick. Nicholas' inspiration fostered in young Karpovich a desire to study medicine, even though his family had no resources to support his education. So he applied to the Imperial Military Medical Academy in Petrograd where he learned his physiology from the famous behaviorist, Ivan Pavlov, on a government scholarship that barely covered his living expenses. It was a tumultuous education. World War I provided the first complications as the war with the Germans eventually reached St. Petersburg. Because he was a soldier as well as a medical student, Karpovich was called to duty and worked as a medic, crawling through trenches, filled with corpses—while the Germans continued to bomb—searching for those still alive. He saved dozens



**Popular as a lecturer, Karpovich delivered many keynote addresses in his lifetime. Here he lectures at the "Health is Wealth" conference of 1964.**

of men and was subsequently awarded the St. George Medal for his bravery. Then, in his third year of medical school, the Russian Revolution broke out and he became actively involved in the marches, rallies, and fighting in his area of Russia. After the Communists came to power, Karpovich, who had opposed the revolution, was jailed briefly for not supporting the new party line.<sup>35</sup>

Following graduation, Karpovich, who was still considered part of the military, was ordered to help fight a nationwide epidemic of typhus that ultimately infected approximately 20,000,000 Russians. The newly credentialed Dr. Karpovich, who had seen only two cases of typhus in his life, found himself in charge of a hospital in the small town of Kotelnich, filled with a diffident and unskilled staff. Karpovich stayed there for eleven months, suffered through a personal bout with typhus, and then, in 1920, fell in love and married Alice Neuman.

Within weeks of his wedding, he was posted to the town of Ekaterinburg. There, in addition to medical duties, he taught physiology and anatomy in the local school. Karpovich was happy with his new situation; he enjoyed his teaching and had begun to think that teach-

ing, and not the practice of medicine, would be his life's work. Then one night, at three in the morning, soldiers appeared at his front door, took him to the train station and loaded him into a boxcar along with the other faculty from the school. He was told he was being detained for activities against the state. Twenty-two days later, Karpovich was finally freed from prison, but he was so physically debilitated by the experience that he could hardly stand. All charges against him were dropped, and Karpovich was told to pack and move to yet another small town, Kamyshlov, to serve as garrison physician. After staying there for several months, he and his wife returned to St. Petersburg—by that time called Leningrad—where he began an intensive postgraduate course in medicine. Six months later, Karpovich received orders to move his family (which now included his son, George) to Mongolia to serve as a military surgeon. Karpovich, however, had had enough. He had a different dream, one that had begun as a boy when he first met the YMCA's representatives in St. Petersburg and one of them suggested that he should become a doctor who studied athletes.<sup>36</sup>

Karpovich decided that rather than move to Mongolia, he'd defect and try to get to Springfield College in Massachusetts where he could meet his idol, James H. McCurdy, and study with him to learn more about sports medicine. Several of his friends, he reasoned, had gone to Europe and gotten extra medical training, and then returned safely to Russia, so why couldn't he do the same? Little did he know, however, when he left his wife and son behind to start his walk across the swamps and marshes to the Latvian border, that he would never return to his motherland. It was by all accounts a horrendous trip. A companion, who went with him as guide, fell ill with an abscess near his groin and Karpovich ended up performing field surgery on him using his pocket knife and then keeping him hidden in an abandoned bath house on the edge of a small village until he healed. Karpovich told a reporter in 1950, "As ill luck would have it, just as Latvia and freedom were near, we ran into an armed Soviet sentry." However, Karpovich continued, "It pays to be a *fizcultura* fan for just such emergencies. I persuaded the sentry to let us through by hopping on top of him, throwing his gun away and leaving him tied up in the swamp."<sup>37</sup>

Once inside Latvia, Karpovich's troubles were still not over. The Latvian border guards immediately

picked him up and put him in a concentration camp with other Soviet Russians who were trying to escape the communist regime at home. However, the Latvian guards allowed him to send word to the local YMCA who soon arranged for his release and helped him reunite with his wife and son. Karpovich stayed in the Latvian capital, Riga, for the next three years, working at 'the YMCA from 1922 to 1925 and doing sports medicine work with several local teams. Finally, in the fall of 1925, he entered Springfield College as a special student. He joined the faculty the following next year, at age 30, and became a naturalized U.S. citizen in 1935.<sup>38</sup>

Creighton Hale, who served on the faculty with Karpovich from 1950-1955, recalled that although Karpovich escaped, he was not unscathed by his experiences. Karpovich suffered from severe claustrophobia, according to Hale, brought on by hiding in a large oven during his escape and being so frequently imprisoned. "He was not at all comfortable being off the ground floor in a building," Hale recalled, "and when he went to New York, he couldn't ride in a subway. He'd go right in one door and out the other." But, said Hale, Karpovich did not lose his sense of humor, or his personal dignity. Hale also noted that, "I don't believe in that field that there was anyone more respected than [Karpovich] was, and I knew all of them—Dill and Morehouse and so on."<sup>39</sup>

It should be noted that Karpovich's career was not without its rough patches. In 1964, for example, Karpovich found himself in court in a case pitting him and the Federal Trade Commission (FTC) against his former student, Dr. Thomas Cureton, and the Viobin Wheat Germ Oil company. The case resulted from advertising for the Viobin company that claimed wheat germ oil was beneficial for the heart, would increase endurance in middle-aged men, and would help an athlete lift more weight. These claims were based largely on research done by Cureton, then a professor at the University of Illinois. Karpovich took exception to the claims in the advertising and publicly attacked Cureton's research methods. Subsequently, Karpovich received a \$4800 grant from the FTC to do his own testing on the Viobin products. When Karpovich's research failed to support Viobin's claims, Viobin sued. During the trial, Viobin's lawyers discredited Karpovich by demonstrating that his study had not used the Viobin product and, furthermore, that there were serious questions about the veracity of Karpovich's Russian medical degree. The

case was eventually dismissed but Karpovich's professional reputation took a heavy blow.<sup>40</sup>

Karpovich's last published contribution to the acceptance of strength training for athletes was his joint authorship, with *Strength & Health* editor, Jim Murray, of *Weight Training for Athletics* in 1956. Murray recalled his first meeting with Karpovich and his second wife, the famous physical educator Josephine Rathbone, in 1955. "I went to New York thinking I was doing him a favor by letting him in on the project," reported Murray, but, in reality, Karpovich wanted to evaluate Murray's knowledge, "and especially my character before he would agree to collaborate." It was a good meeting, however, and Murray recalled years later, "Looking back, I'm as proud of the fact that Dr. Karpovich was willing to work with me as of anything I've done in my seventy years."<sup>41</sup> *Weight Training in Athletics* achieved what Murray and Karpovich had hoped it would. Karpovich's name on the cover made the book acceptable for use as a textbook by physical educators and reassured coaches that it would not hurt their athletes to lift weights. Prentice-Hall subsequently published a second, revised edition of the book, in 1983.

By the time the second edition came out, however, Karpovich was dead. He retired from Springfield College in 1969 and began shortly thereafter to have major health problems. He did almost no research work after his official retirement, although his biographer reports that in 1972 he was "analyzing the world weightlifting records in order to predict the new records which can be expected in the future."<sup>42</sup> Sadly, that research does not appear to have been published. On 13 June 1975 Karpovich took an overdose of barbiturates and committed suicide. His wife, Josephine Rathbone, later wrote, "He had gone because his lifework was finished, in a fashion that was very common in Russia."<sup>43</sup> Creighton Hale, who was with Mrs. Karpovich at a convention on the day she got the news, said that he didn't think she was surprised that Karpovich had ended his life at age 79.<sup>44</sup>

Thomas Kuhn's seminal work—*The Structure of Scientific Revolutions*—argues that the history of science should not be viewed as a series of "significant discoveries" but, rather, as a series of paradigm shifts that occur with much conflict and resistance from the scientific community itself. Scientists, who have believed in one approach to science, Kuhn argues, find it hard to

give up the "knowledge" supporting the earlier theory or paradigm. This resistance to change, he says, is understandable because, "scientists, being only human, cannot always admit their errors, even when confronted with strict proof."<sup>45</sup> Only rarely, Kuhn explains, does a scientist "see the light," and then openly admit the error of his earlier thinking. Generally, conversion to the new paradigm is usually more gradual. Kuhn would no doubt have seen Karpovich's conversion to, and impact upon, weight training as an interesting case study. To Karpovich's everlasting credit, he was not afraid to change directions in mid-career or to publicly admit his mistaken belief in muscle-binding. Said Creighton Hale, "He told the story on himself many times. He wasn't afraid to say that he'd been wrong. And, really, from that time on, he was very supportive of strength training."<sup>46</sup>

For more than 25 years now, the National Strength and Conditioning Association has sponsored clinics, symposia, and published several hundred research articles suggesting that strength training is beneficial for athletes because—as it builds strength—it also increases speed and explosiveness, promotes greater flexibility, and tends to make athletes less susceptible to injuries. However, in the first half of the twentieth century, almost all coaches, physical educators, and even exercise scientists believed exactly the opposite. The "paradigm" for strength training until at least 1950 was that weight training was detrimental to athletes and unworthy of study by "serious" scientists. That paradigm shifted in large part because of the remarkable career of Peter V. Karpovich. As Jim Murray put it, "One seldom hears the term 'musclebound' anymore and muscular heroes abound in popular motion pictures, no longer portrayed as clumsy oafs. For that, much credit should go to Dr. Peter Karpovich, whose influence lives on three decades after his death."<sup>47</sup>

## Notes:

<sup>1</sup> "Dr. Karpovich Scheduled to Speak," *Springfield Union*. 18 February 1940.

<sup>2</sup> James Murray and Peter V. Karpovich, *Weight Training in Athletics* (Edgewood Cliffs, N.J.: Prentice Hall, 1956).

<sup>3</sup> "Bob Hoffman Exhibits his Troupe at Weekly Forum," *Springfield Student*, 31(10 April 1940): 4.

<sup>4</sup> Fraysher Ferguson, interview with authors, Columbus, Ohio, July 2002.

- <sup>5</sup> A. Parry, "The Medical Sage of Sports," *Esquire* 21 (March, 1950): 68 & 122.
- <sup>6</sup> Terry Todd, "The Myth of the Muscle-bound Lifter. *NSCA Journal* 7(3) (1985): 37-41.
- <sup>7</sup> Vic Boff, "My Friend: John C. Grimek," *Iron Game History*. 6(1)(1999):10-11.
- <sup>8</sup> "Bob Hoffman Exhibits," p. 4.
- <sup>9</sup> Ibid.
- <sup>10</sup> Ferguson interview.
- <sup>11</sup> Murray and Karpovich, *Weight Training*.
- <sup>12</sup> John Grimek, personal interview, New York, October 1993.
- <sup>13</sup> Ibid.
- <sup>14</sup> Jim Murray, "Weightlifting's Non-lifting Patron Saint," *Iron Game History*. 4(6) (1997): 3-5.
- <sup>15</sup> Grimek interview.
- <sup>16</sup> Ibid.
- <sup>17</sup> A. V. Seetharaman, "Peter V. Karpovich. M.D.: His Life and Contributions to Physical Education," Ph.D. diss., Boston University, 1972.
- <sup>18</sup> Peter V. Karpovich, "Water Resistance in Swimming," *Research Quarterly* 4(1933 supplement): 21; Peter V. Karpovich, "Effect of Oxygen Inhalation on Swimming Performances," *Research Quarterly* 5(1934): 24; Peter V. Karpovich, "Analysis of the Propelling Force in the Crawl Stroke," *Research Quarterly* 6(1935 supplement): 49; Peter V. Karpovich, "Respiration in Swimming and Diving," *Research Quarterly* 10(1939): 3; and Peter V. Karpovich & K. Pestrecov, "Mechanical Work Done and Efficiency of Swimming Crawl and Backstrokes," *Arbeitsphysiologie*. 10(1939):504.
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- <sup>25</sup> W.S. Zorbas and Peter V. Karpovich, "The Effect of Weight Lifting upon the Speed of Muscular Contractions," *Research Quarterly*, 22-2(1951): 145-148.
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- <sup>31</sup> Seetharaman, "Peter V. Karpovich. M.D, 118.
- <sup>32</sup> Howard Knuttgen, personal communication, October 2002; Creighton Hale, personal communication, October 2002.
- <sup>33</sup> Jim Murray, Weightlifting's Non-lifting Patron Saint. *Iron Game History*. 4(6): 3-5.1997.
- <sup>34</sup> Seetharaman, "Peter V. Karpovich. M.D, 126.
- <sup>35</sup> Ibid.
- <sup>36</sup> Parry, "Medical Sage of Sports," 68 & 122.
- <sup>37</sup> Seetharaman, "Peter V. Karpovich. M.D, 172 and Parry, "Medical Sage of Sports," 122.
- <sup>38</sup> Creighton Hale, personal communication, October 2002.
- <sup>39</sup> Seetharaman, "Peter V. Karpovich. M.D, 188.
- <sup>40</sup> Murray, "Weightlifting's Non-lifting Patron Saint," 5.
- <sup>41</sup> Seetharaman, "Peter V. Karpovich. M.D, 190.
- <sup>42</sup> J.L. Rathbone. *My Twentieth Century*. Unpublished memoir, on deposit at Babson Library, (Springfield College: Springfield, MA).
- <sup>43</sup> Creighton Hale, personal communication, October 2002.
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- <sup>45</sup> Creighton Hale, personal communication, October 2002.
- <sup>46</sup> Murray, "Weightlifting's non-lifting patron saint," 4.
- <sup>47</sup> Ibid.

## The Murray/Karpovich Correspondence

Following the publication of an earlier version of the preceding article in the *Journal of Strength & Conditioning Research* (Volume 17(2) 2003: 213-220), Jim Murray sent us the following letters related to his famous collaboration with Dr. Karpovich. Because the letters provide unusual insight into the evolution of strength training for athletes, we decided to share these excerpts with our readers.

February 18, 2003

Dear Terry and Jan,

Jim Lorimer sent me a copy of the Karpovich paper that you wrote and I found it fascinating. There are few people who write well and also compile solid information. I'm pleased that you gave Fraysher Ferguson the credit he was due for arranging the meeting at Springfield College.

I can't remember what year it was that I met Dr. Karpovich the last time. I had the unpleasant task of closing a Johnson & Johnson plant at Chicopee. It had been too antiquated to be maintained. While I was there, however, I had the good fortune to attend a Karpovich memorial lecture at Springfield and at that time he was in good health and as humorous as ever. He was an excellent speaker and was able to be very funny as he provided information.

The first time I met the Karpoviches was at Columbia University and he told me to meet him at Josephine Rathbone's apartment in New York. I thought to myself, "How 'bout that old rascal. He has a girlfriend in the city." (Shades of Bob Hoffman!) Later, of course, I learned that Mrs. Karpovich was the renowned physical educator Josephine Rathbone, who published under her maiden name. Later they visited us at Morrisville, and they gave us bread and salt—a Russian custom upon entering a new home.

As you reported, I thought I was doing him a favor by letting him in on a book that I wanted to write. I had written a book, *Weight Lifting and Progressive Resistance Exercise* for A.S. Barnes & Company's "Sports Library" series, which had exceeded all the publisher's expectations, and Prentice Hall was interested in my doing one for them. I had briefly mentioned DeLorme's approach for strengthening the quadriceps and other remedial exercises and had also reported on Karpovich's work on speed of muscular contraction and



Jim Murray, Josephine Rathbone and Peter Karpovich on the front porch of Jim Murray's home in 1968. Photo courtesy Jim Murray

on the incidence of injuries in weightlifting. I had also mentioned such outstanding athletes as Bob Richards, Henry Wittenberg, Walter Barnes, Dick Cleveland, Frank Stranahan, Bob Feller, Ralph Kiner, Parry O'Brien and Jack Kelly, none of whom were "muscle bound."

I had planned to ask John Terpak to co-author the book for Prentice Hall, but the publisher wanted someone who had credentials in physical education. I suggested three possibilities: C. H. McCloy, Dick Ganslen, and Peter Karpovich. Prentice Hall knew of Dr. Karpovich and I contacted him. What a wonderful choice! My blind luck was working for me that time! I was also lucky again to have Dr. Karpovich be compatible. When we met, after a day-long meeting, Dr. Karpovich agreed to work with me.

As you quoted me, "Looking back, I'm as proud of the fact that Dr. Karpovich was willing to work with me as of anything I've done in my seventy years." Now we could update that to seventy-seven years. I was saddened to learn that Dr. Karpovich had committed suicide. I hadn't contacted him since our chance meeting when I was closing Chicopee and I hadn't known that he had been in poor health. The last time that I met him he was fine, vigorous, and continuing to mentor his students.

The roster of old-timers is getting shorter, so many of them turning up in the obituary columns—Vic Boff, George Eiferman, Al Berger, and on and on. The current crop of bodybuilders and weightlifters probably don't know who these Iron Men were.

With best regards,  
Jim Murray

## Excerpts from The Murray/Karpovich Correspondence

September, 18, 1958

Dear Jim:

I am full of good intentions but the devil sometimes twists them. I was so sure that I could go to the DuPont Laboratory in August or September, but as yet I could not find a single day on which I can leave Springfield. I am writing this letter to indicate that it is not just a matter of forgetfulness on my part.

I sent a letter to Prentice Hall with your suggestion on advertising our book in "Strength and Health." The letter was supposed to go to Mickey Finn but we addressed it to Tom Collins so we had to send a follow up letter. I haven't heard from them as yet. Probably "both of them" are mad.

Since our coaches are back on the campus, I will discuss your suggestions regarding weight training for shot putters and see what will happen. I have sent suggestions to our Track and Field Events coach.

Peter V. Karpovich, M.D.

April 14, 1961

Dear Doctor Karpovich,

Re: Pitman's article on weight training in junior high schools, the boys exercised twice a week for six months. A possible explanation for improved running time would be that the boys were appreciably stronger and therefore could run with less total effort. I'm sure that there is a point of diminishing returns where added strength will not do this, but it seems reasonable to have this result with previously untrained (any kind of training) subjects. I can't understand, though, why the controls became slower. I also doubt that Pitman had the most effective program, though it did produce results. . .

My meeting with Phil Rasch has opened an interesting correspondence. He sent me his article on endurance training, which is intended for his and Morehouse's book when they revise it. I think the principal of "circuit training" could be developed effectively for various sports, for military training, and for other uses.

He also sent me a copy of Klein's article on the deep squat exercise. I'm glad we included the material on pp. 118 & 119 of *Weight Training* . . . about the possible danger of full knee bends, though I'm still not sure Klein is right. It's one thing to demonstrate a fact that knees exercised with full bends have less stability than unexercised knees and another to show that this instability is harmful.... Football players don't seem to be very good subjects, unless we could find really large numbers who have done a lot of deep squatting exercises and then found that these players had significantly higher incidence of knee injuries than non-squatters. As far as non-football players are concerned, I wonder about the significance of the stretched ligaments and tendons. Are these strong, flexible legs any more likely to be injured than less strong legs that are unaccustomed to full flexion of the joint? What happens to an unstretched tendon when it receives the trauma that would sprain a stretched one? Might it not stretch too, or perhaps even tear? Is there any difference between the flexibility of knees and the flexibility of spines or other joints as acquired by acrobats? Is this increased range of motion dangerous too? I guess I'll write to Klein and see if he has considered these things. In the meantime, I think he's right that we can strengthen legs without fully flexing the knees, and the use of a "stopper" as described in *Weight Training* ... is a good way to do it.

Jim Murray

**Undated****Dear Doctor Karpovich,**

I know John Ziegler well; you will remember that I obtained the data from him that you included in our book. In fact, I was one of the subjects included in his data. In addition to the test of effects on blood pressure, Doctor Ziegler also thought testosterone injections would increase lifters' strength, and he tested this theory on a number of the [York] men—but not on me! (Maybe some day I'll be interested in goat glands, but not yet.) He is a nice fellow, a pleasant companion, an interesting conversationalist . . . but I think it is very important to him to be associated with Hoffman so that he can go on trips with the weightlifters as team physician. I am enclosing a copy of "the most important article" Bob Hoffman ever wrote, which reveals all that is worth knowing—short of spending \$5.00 for the real, inside information about isometric and isotonic exercises. I'm also enclosing an advertisement which is self-explanatory.

Now, I am not closing my mind to the possibilities of isometric exercises, but I am looking for something that I can't find "holes" in without half trying, and something about practical weight training that hasn't been known and practiced for years. If Ziegler can assure you that the "isometric" exercises are really something different from short range partial lifting simulations with overload, and that they were practiced instead of—not in addition to—other weight lifting exercise, I will be impressed. But I will want to test results myself with some of the men who lift at our club. Ziegler is talking about a couple of men "tested" under uncontrolled conditions. I would accept empiric results myself, but would have to be convinced the results were due to something specific and that they might not have been produced anyway, by hard standard training. We can't rule out the effect of suggestion in these weight lifters, either.

For years, lifters have been using very short range partial movements as part of their training, employing weights far heavier than they could lift in the full movement. This is valuable in making progress, but I have never known of anyone using this kind of routine exclusively. The kind of thing I mean is to take a weight from shoulder high stands that is 50-100 lbs. more than the man can press, and then try to press it, making a very slight movement against overload. Also, suspending weights at a height near arms' length overhead and then

pushing them up an inch or so. There have been many variations on these exercises and others, which seem to be helpful. *[Ed Note: At the time this letter was written, only a few people on the "inside" knew that the primary reason for the dramatic increase in the strength and muscular development of Bill March, Tony Garcy and Louis Riecke was their use of the anabolic steroid methandrostenolone (Dianabol) given to them, with Bob Hoffman's knowledge, by Dr. John Ziegler.]*

I hope we will be able to get together again in the not too distant future, since it is so hard to debate by letter. In the meantime, I must try to devise isometric exercises for the men at my gym to pacify them and save them the money the more gullible ones will otherwise spend on the products of Hoffman's super selling genius. I believe I have finally convinced them they will get as much benefit from steaks as from his overpriced soybeans and seaweed but this new thing has them very excited.

**Jim Murray****October 30, 1961****Dear Doctor Karpovich**

I guess you saw the issue of *Sports Illustrated* dealing with the "new" isometric exercises, which mentions your comments. The thing that troubles me about these various reports is that the effect of isometric contractions either is not isolated, or the testing itself is questionable. As I wrote you before, I think testing against a dynamometer is itself so much like an isometric contraction that an effect of "practice" may enter into the tests. I hope it won't be too long before we'll have a chance to get together and talk, because I'm afraid I'm not making myself clear as to why I feel the scientific studies have not been definitive.

Of course, the shortcomings of the "physical culture" studies are fairly obvious, the most important being failure to isolate the effect from other training. You will see where various champions are now doing isometric exercises . . . but almost invariably they were champions before they did these particular exercises. The salesmen of "isometric" courses and equipment point to the rather sensational improvement of Louis Reicke, but I think many different factors may have been involved in his improvement. . .

I wonder if there really is any different physiologic effect? The isometric contraction is really a strong



effort against resistance that can't be overcome, as is the partial movement against a great overload. Another similar type of exercise that has been done by lifters is to have assistants help get the weight into the final "lifted" position, and then "un-lift" it, working to impede the "falling" of the weight as it is lowered. . .

Sometime ago I read that the people at the School of Aerospace Medicine Laboratory, Brooks Air Force Base, San Antonio, were concerned about the problem of creating a condition like invalidism in space travelers, because of their necessary immobilization and weightlessness. So, I wrote and suggested that they provide for the space man an exercise bar attached to elastic strands for resistance, in order to maintain muscle tone and aid venous return of blood to the heart despite weightlessness and inactivity. I diagrammed how these strands could be attached to the space man's "couch" so that he could extend his arms against resistance and so he could hold the bar across his shoulders and work his legs against resistance. I also suggested that if lack of room would make these movements impossible, some degree of muscle work could be obtained by doing isometric efforts such as trying to extend the feet through the "floor" while simultaneously trying to push the hands through the "roof." I asked for comments on those suggestions, but haven't heard from them as yet.

**Jim Murray**

**February 19, 1962**

**Dear Doctor Karpovich:**

I am impressed by Rasch's contention that there is a certain minimal strength needed for success in athletics, specific to the sport, beyond which additional strength produces negligible benefits. Of course, this would be much greater for putting the shot than for playing basketball, but this kind of gross judgment doesn't help determine exactly what that minimal level is. What is the minimal strength for a shot putter, in terms of pressing a barbell, that will be sufficient for him to put the shot 60 feet? Gubner, who is fantastically muscular, is beating O'Brien and Long, which you might expect, since he can probably press 50 lbs. more than either of them could do at his best. However, Gubner could also press that much more than Neider, whose outdoor record he has yet to beat. (Barring injury, however, he will surely beat it. Gubner is the N.Y.U. freshman I suggested you test to see how far his arm was extended when he

released the shot. He is likely to make the Olympic team both as a shot putter and heavyweight weightlifter.) The point I guess I am trying to make is that you can attain this minimal level of strength with barbells, and in the process you have a measuring going on that tells you when it is reached. This seems to me to be an advantage for isotonic weight training over isometric contractions.

One more comment on isometric exercise, before I next have a chance to talk with you: I am amazed at the ready acceptance of this training system by coaches. These same coaches condemned weight training for years, and many still condemn it, because you necessarily move slowly against weight resistance, and because you may "strain yourself trying to lift something heavy." Now, practically overnight, they eagerly embrace a training system that is so "slow" that there is no movement at all, and in which a person "strains" against something so "heavy" that he can't possibly move it at all. One coach, in fact, was quoted in *Sports Illustrated* as saying isometric contractions are the "finest thing for body building and overall coordination we've ever had." This coach claimed he lost 12 lbs and two inches from his waistline with 30 seconds of isometric contractions a day. Inches, maybe, but what was the physiology involved in weight loss via non-moving contractions of 30 seconds a day?

**Jim Murray**

**April 19, 1968**

**Dear Doctor Karpovich:**

Jane and I enjoyed visiting with you and Mrs. Karpovich yesterday, although the visit was all too brief. After you left I realized you had asked me a question I had not really answered—about Dr. John Ziegler . . .

But I have some doubts about his capabilities because he once undertook to inject testosterone into weightlifters in an attempt to make them stronger. This, in itself, might not be so objectionable, but I did not feel that he was controlling these experiments in any way including observing the men to determine whether the treatments might be damaging them physiologically. I notice that he is currently advertising himself (in *Iron Man* magazine) as a scientific innovator who invented isometrics, or something like that.

**Sincerely,  
Jim Murray**

# Arthur Jones:

## AN UNCONVENTIONAL CHARACTER

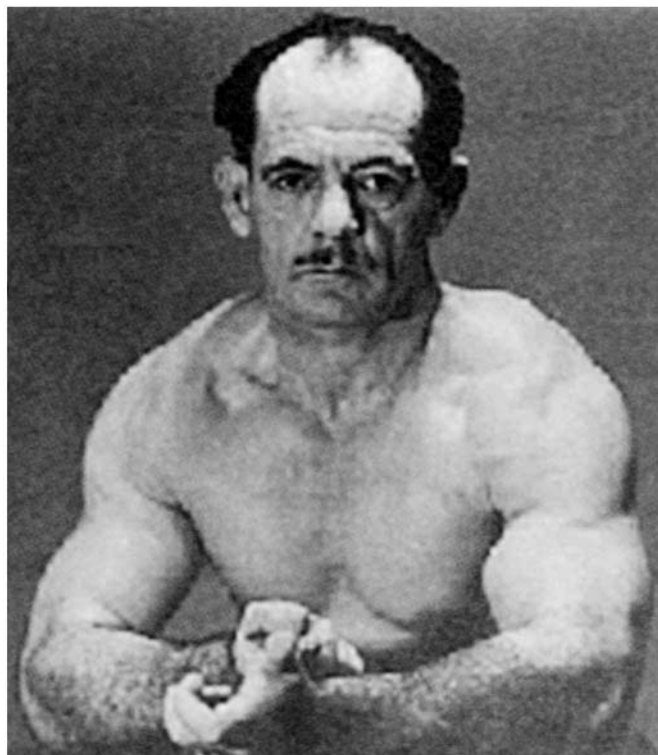
***Bill Pearl***

It's impossible to overlook this opportunity to give you more insight on the Arthur Jones I know. He is, by far, one of the most unique individuals I've ever met. Mike Mentzer (former I.F.B.B. Mr. America winner) attempted to describe Arthur by stating, "Arthur Jones is not a relaxing person to be with. He does not lightly exchange words. He spews facts, torrents of them, gleaned from studies and perhaps more important, from practical application of theory, personal observations and incisive deduction. You don't converse with Arthur Jones: you attend his lectures. He is opinionated, challenging, intense and blunt."

I am in total agreement with Mike. This is just a taste of my on-again/off-again relationship with Arthur, which began in 1958. Early one Monday morning, while I was opening the door to my Sacramento gym, Arthur appeared out of nowhere. He was wearing khaki pants, a khaki shirt, and a jacket that half-covered a .357 magnum pistol strapped to his belt.

In his heavily southern-accented, no-nonsense, baritone voice, he began the introduction, "You're Bill Pearl. My name is Arthur Jones. I'm from Slidell, Louisiana. I've come to see if you're interested in participating in a 'gawd'-damn movie I'm going to produce. I'll need you for about a month. It's going to be filmed in Florida and Louisiana."

I asked, "Do you make movies for a living?" He articulated every word with a slight pause in between to make sure that he wouldn't have to repeat himself, "Hell, no. I have a large wildlife game reserve in Slidell that supplies most of the animal parks and zoos throughout the country with reptiles, exotic birds, monkeys and oth-



**Although Arthur Jones loved his coffee and cigarettes, he loved resistance training, too, and he practiced it in his earlier years. In the early 1960s, as this photo attests, Jones possessed an admirable physique.**

er 'gawd'-damn wildlife that I capture in South America. But I'm not new to the film business. I've made several documentaries." "When do you plan to start filming?" I asked. "As soon as I can get your ass down to Louisiana." "What am I supposed to do in this movie?" "Whatever it takes to make the 'gawd'-damn thing sell!" "How much are you willing to pay?" "How much are you worth?" We agreed on a price and, to this day, I've never picked up a tab when we've been together. His pride seemed offended whenever I've tried.

During those few days in Sacramento, it became obvious that we were from different worlds. Arthur had a definite opinion on everything. When it came to bodybuilding, he was convinced that the fastest muscular gains came from doing, "One set per muscle group—three days per week—while training to failure."

On politics, I asked, "Do you think John F. Kennedy will become the next President of the United States?" His reply, "It really doesn't matter. Some right-thinking Texan will take care of the son-of-a-bitch."

Our differences became more obvious during the filming of his movie *Voodoo Swamp*. Arthur could survive on Coca-Cola and cigarettes while holding court with whomever until the wee hours of the morning, and

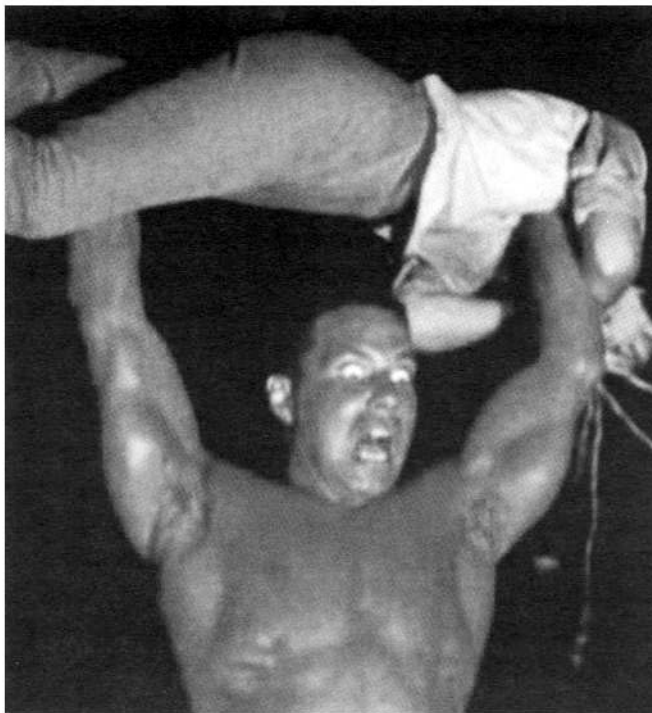
then expect everyone to be ready to go at his beck and call. I needed food, rest, and consistency.

We clashed about a week into the filming. Six of us were jammed into his new Oldsmobile station wagon traveling to shoot a scene that had me trudging up to my neck in swamp water filled with leeches. The car radio was tuned to a country station blaring so loud it was impossible to think. He made matters worse by chain smoking in the closed vehicle. I was dragging from lack of sleep, and a white bread bologna sandwich wasn't my idea of a balanced diet.

Things came to a head when he began playing "grab-ass" with the script girl sitting between us. I sat thinking, "This is ridiculous." I flicked off the radio and shouted, "Stop the car!" Arthur retaliated with, "Why? You got a 'gawd'-damn problem?" I shouted, "I've got several problems! First, I can't breathe! Second, I don't do well on bologna sandwiches! Third, I've had as much sleep this past week as I normally get in a night. Now you two decide to start screwing around. Either there are some drastic changes, or I'm out of here!" He apologized by saying something like, "I didn't realize you were so 'gawd'-damn sensitive."

The more violent side of Arthur erupted while we were shooting a night scene that had me throwing a stunt man off a bridge into a large pool of water. We had done the scene several times, which always ended in a big splash, but on the final take, there was a thud. The stunt man had landed on the bank rather than in the water. With a loud moan he cried, "Arthur—if we're going to do this again, make sure Mr. Pearl tosses me further to the left!"

A carload of teenage boys had stopped to watch the filming. As they drove away, a crew member called out that he was missing an expensive camera. He was insistent that the teenagers had taken it.



**Bill Pearl's relationship with Arthur Jones began in 1958 when Jones invited him to play the "monster" in *Voodoo Swamp*, Jones' first attempt at feature film making.**

In less than a block, they were pulled over. Arthur ran to their car screaming, "Did one of you steal my 'gawd'-damn camera?" There was no response. Arthur pulled out his pistol, drew back the hammer, placed the barrel in the middle of the driver's forehead saying, "Boy, I'm going to ask you one more time, before I scatter your 'gawd'-damn brains all over this car! Did one of you steal my 'gawd'-damn camera?" His reputation must have preceded him. The driver stuttered, "Honest Mr. Jones, we did not ta—ta—take your camera." Not satisfied, Arthur told me to begin searching the car. Fortunately, one of his crew ran up

screaming that they had found it stored in the back of the station wagon. It seemed everyone but Arthur let out a sigh, as he eased back the hammer of the gun.

In our final days of filming, Arthur had rented a beautiful old mansion on the outskirts of New Orleans. I was to be kept imprisoned in the mansion while recovering from the lady witch doctor's spell. They had me tied to beds, chairs, or whatever, to prevent me from causing more harm. Arthur had left instructions for Shorty, the head cameraman, to shoot a scene in the enormous living room where I was tied between two large pillars.

Shorty, like Arthur, was a chain smoker. He had a bad habit of setting lighted cigarettes on everything, which began to take its toll on the beautiful antique furnishings. What upset me even more was that he'd drop the butts on the marble floors, and then grind them out with the soles of his shoes. I finally told him, "Shorty, you do that one more time, and I'm going to bounce you on your can." Sure enough, the next cigarette out of his mouth went on the floor to be ground to death. I jerked out of the ties and hit him so hard it knocked him, the camera, the tripod, the lights and canisters of film onto the floor.

Arthur heard the commotion and ran into the room

shouting, "What-n-the-'gawd'-damn-hell's going on here?" Shorty looked up, saying, "He just hit me, and I bet he broke the camera." Arthur asked, "Why in the hell did you do that?" I replied, "Because he has destroyed half of the antique furniture in this house with his lousy cigarettes and is now doing the same to the marble floors. It's going to cost you more money for repairs than you'll make from the movie." Arthur looked at Shorty and said something like, "You stupid moron. I should blow your 'gawd'-damn brains out." I returned to Sacramento without ever seeing the finished version of the movie.

Several months later, Arthur invited me to view his latest film, that he shot and produced in Africa. The screening took place in a private Hollywood studio. I had no idea what to expect, but knew it would not be a sequel to the movie *Lassie*. The least violent part of the two-hour documentary was the opening scene. It showed several natives dragging an enormous crocodile from a lake. The natives were close to losing limbs, as they struggled to get the crocodile subdued and turned over on its back, before Arthur stepped in with a huge knife to slit open its belly to pull out a young boy.

After another lapse of time, Arthur phoned from the Los Angeles International Airport asking if he could stay with me for a few days. I had moved from Sacramento to Los Angeles and was living close to the airport in the apartment above the Manchester Gym with a spare bedroom—so—"Sure!"

He was back to supplying animal parks and zoos with reptiles, exotic birds, monkeys and other 'gawd'-damn wildlife. He was headed for the Galapagos Islands, located six hundred fifty miles west of Ecuador.

After keeping me up most of the night, he went to a corner cafe the following morning for coffee. I walked into the spare bedroom to find several large stacks of one hundred dollar bills lying on the bed, which had not been slept in. The apartment had been broken into a couple of weeks before, which caused me more than a little anxiety seeing somewhere between \$35,000.00 and \$50,000.00 in cash lying out in plain view. When Arthur returned, I suggested that he find a better place for his money. Later, I asked, "Why are you carrying so much cash?" His answer, "Money talks, especially American money."

Weeks went by before another phone call from Arthur, which originated from the Los Angeles International Airport's freight depot. Offering no explanation,

Arthur barked, "Bill, this is a matter of life and death! I want you to immediately go to the produce mart in Los Angeles. Pick up five-hundred pounds of 'gawd'-damn bananas! Bring them to the United Air Lines freight depot as quickly as possible." (The telephone went click.)

I was at the produce mart in twenty minutes. I found an outdoor fruit stand and didn't bother shopping prices or explaining why I was buying five-hundred pounds of "'gawd'-damned bananas;" I didn't know myself.

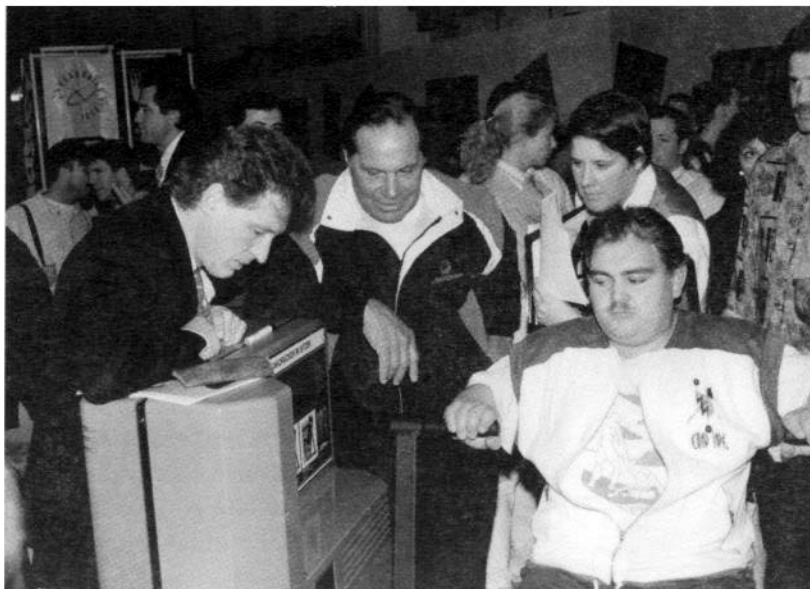
The United Air Lines freight depot's loading dock was filled with crates of exotic birds. Arthur was running around screaming, "The 'gawd'-damn things are going to die if they don't get food and water. You continue filling the water dishes, I'll do the rest."

He eventually calmed down, but insisted he had to travel in the cargo hold of the airplane to be sure the birds were fed and watered on their trip to Slidell. He was told to go the United Air Lines main terminal to obtain permission.

Standing next in line at the ticket counter, I watched Arthur get a pained look on his face while, through clenched teeth he screamed, "My 'gawd'-damn hemorrhoids are killing me." The female ticket agent and everyone close by gasped as he loosened his pants and jammed his right hand down the back of his shorts to take care of the problem. Squaring himself away before stepping up to the counter, he offered the agent his tickets with the hand that had just preformed the miracle. She bellowed out, "I can't take this! I'm calling my supervisor!" He looked at me, saying, "What the 'gawd'-damn hell's wrong with her?"

When we first met in Sacramento, one of our original discussions had been on strength training. Arthur had shown particular interest in a new selectorized arm-curl machine that had been designed by my friend Bob Clark. The machine used an off-centered cam that caused the resistance to vary as the user curled the lever arm through its range of motion.

There was no need to explain Clark's concept of using the off-centered cam to alter the resistance of an exercise to Arthur. He was well aware of the benefits. In fact, he went on a tirade that not only covered strength curves, but also the amount of energy stored in muscles, the recovery time between workouts, and the benefits of shorter, all-out effort training sessions. He was so convincing, my hard-core bodybuilders couldn't wait to



**Robert Mills and Bill Pearl encouraging a Lifecircuit user during a trade show in Essen, Germany.**

give his system of training a try. Twelve years later, when he launched his new line of Nautilus exercise machines, he was still using the same pitch.

Arthur founded Nautilus Sports/Medical Industries in 1970. His new line of exercise machines became so popular over the next ten years, it was said that more money was spent on Nautilus than on all other commercial gym equipment being sold.

The first version of his machine was previewed in Culver City, California, at that year's A.A.U. Mr. America Contest. I acted as Master of Ceremonies. My training partner, Chris Dickerson, became the first Afro-American to win the title.

Arthur had transported the prototype from Slidell, to Culver City, in a rented trailer. To save money, he stayed at our home in Pasadena. His 13-year-old son, Gary, remarked with confidence, "We can put another inch on your arm in a month, if you'll use the machine."

The Nautilus multi-station unit that sat in the lobby of the Culver City convention hall looked like a bad substitute for the popular Universal multi-station unit. Arthur's unit was cumbersome, poorly built, painted blue and equipped with lever arms to hold free-weights. It was immediately nicknamed "The Blue Monster." Its best selling points were Arthur's gift-of-gab and the off-centered cams, which were pitched to everyone who would listen.

I later commented to Arthur that trying to compete against the Universal multi-station unit might be a mis-

take. I suggested that he design separate pieces of equipment incorporating the off-centered cam and then promote his theory of training, which could only be done "on his machines." How much influence my suggestion had on his decision to do this is anyone's guess, but that's what eventually evolved.

At the beginning of the Nautilus reign, Arthur used the editorial pages of *Iron Man* magazine to promote his concepts. Issue after issue was filled with his opinions on training. The magazine was so hard-core, its readers were more than willing to give Arthur's theories a try, if they could get their hands on his equipment. Sales of his units were going out of sight. Prospective buyers were phoning my gym day and night to confirm what Arthur was preaching. There were so many calls, in fact, that it started interfering with my ability to run my business. He convinced me that my time wasn't being wasted. In exchange, he was going to give me the new Nautilus Biceps/Triceps and Torso Pullover machines, *plus* an exclusive written Nautilus franchise for the State of California.

He then tried to convince me that bodybuilding had changed since my last competition in 1967. The only way I could win the 1971 N.A.B.B.A. Professional contest was by following his training principles, along with incorporating the Nautilus machines into my programs. It mattered little that I'd done quite well with free weights for twenty-five years. When the Biceps/Triceps and Torso Pullover machines arrived, I placed them in the living room of our home for my own personal use. Later, to Judy's relief, they were transferred to the gym, where they became so popular it was nearly impossible to get near them.

Our relationship became more strained when I informed Arthur that I had replaced the lever arms of my Nautilus machines in the Pasadena Health Club with weight stacks. Arthur went ballistic saying, "You ruined the 'gawd'-damn biomechanics by doing that." My reply was, "Arthur, you're wrong. The movement is even better. Because of the weight stacks you now start the motion from a dead stop rather than having a swinging motion. Besides, there are no weight plates to pick up, the machines are more simple, safer and faster to use." "Yah . . . but. . . but," he sputtered. Later it occurred to me that Arthur might not have been so upset because I

ruined the "gawd-damn" biomechanics of his machines, as he was with the fact that he was now going to have to add weight stacks to the machines he was currently manufacturing. It was possible that he didn't have the capital to make the conversion at that time.

It came down to where I either had to replace the lever arms on my machines, or he was going to renege on the exclusive Nautilus franchise for California. Stupidly, I told him it would be a relief to get back to running my gym. That remark probably cost me millions of dollars from the profits of the sales of Nautilus in the State of California over the next several years.

Matters didn't improve when I publicly questioned Arthur's theories regarding the advantages that came from training on the Nautilus Isokinetic machines. Much of the promotional material in the early days of Nautilus was based on the claim that free weights were obsolete, injury-causing antiques. I disagreed. He claimed that three twenty-minute workouts per week on Nautilus equipment could produce a physique like mine. Again, I disagreed by stating, "Nobody who has trained exclusively on Nautilus has won a major physique contest." This enraged Arthur to the extent that he began threatening Leo and me with phone taps and hit men. Why he included Leo is anyone's guess.

He used *Iron Man* magazine to wage his war, which became more venomous with each issue. The final straw occurred when he commented that it was "rumored" that my training partner, twenty-eight-year-old Willie Stedman, had died because of the use of anabolic steroids, which I supposedly had supplied. It was sadly true that Willy had died, but the cause of death was pneumonia, brought on by a lethal strain of Asian flu. I contacted Peary Rader, the owner and publisher of *Iron Man* magazine, threatening a lawsuit if a retraction wasn't printed.

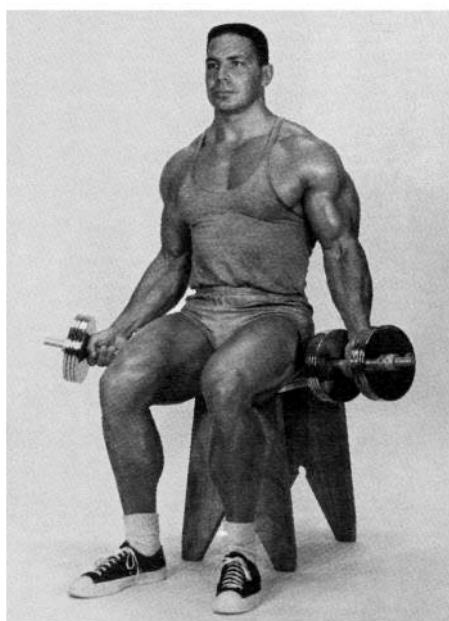
I kept training for the 1971 N.A.B.B.A. Mr. Universe, using the same methods that had brought the best results in the past. By now, Arthur was so irate it was "rumored" that he had given Sergio Oliva \$5,000.00 to come to Florida to train on Nautilus with a promise of another \$5,000.00 if he won the contest.

To rattle me even more, Arthur sent recent photos of Sergio with a note reading something like, "What do you think about this?" I sent the photos back with a note, saying, "I have never seen YOU looking better. There is a good chance, if YOU can stay in that kind of condition, YOU might place high in the contest."

Before leaving for London, I gave my final warm-up exhibition in Brooklyn, New York. The backstage was loaded with bodybuilding celebrities: Boyer Coe, Mike and Ray Mentzer, Dave Draper to mention a few. Again, Arthur appeared out of nowhere. He began showing everyone recent photos of Sergio, asking for comment. When he noticed I was ignoring him, he turned, handed me the photos, saying in a loud voice, "What do you think?" I replied, "He looks great—you look like shit." Turning a couple of shades of red, possibly more out of embarrassment than anger, he began muttering something about getting his gun. Before he finished the sentence, I said, "If you come back with a gun, I'm going to stick it up your butt and blow your brains out!"

On Friday, September 18, 1971, the Victoria Palace in London, England, was packed for the 23rd annual N.A.B.B.A. Mr. Universe contest. Leo, his wife, and Judy were seated near the front row, Arthur several rows behind. The audience anxiously waited until the last announcements were made. "Ladies and gentlemen, the 1971 N.A.B.B.A. Amateur Mr. Universe for 1971 is—Ken Waller of the United States." The Master of Ceremonies, Cecil Peck, went on, "The 1971 N.A.B.B.A. Professional Mr. Universe is (he stopped for a long pause) Bill Pearl!" The crowd went wild. After I received the trophy, Reg Park walked over to congratulate me while Sergio Oliva and Frank Zane walked offstage.

A few years elapsed with no word from Arthur; then again a knock on our door. Arthur, his wife, and their business partner, Dan Baldwin, were standing on the porch. I remarked, "If you're man enough to come to our home, the least I can do is invite you in." Once seated, it became obvious that everyone was on his best behavior—except Judy. The



**Pearl at his best, 232 pounds of rock-hard muscle.**

following is her version of that day:

"One peaceful Sunday morning, there was a knock on our door. I opened it to find Arthur, his wife, and Dan Baldwin, standing on our porch. I closed the door in their faces before leaving to tell Bill. He shook Arthur's hand, as if nothing had happened. The next is his recollection as to my obstinate refusal of hospitality. When Bill offered them coffee, my reply was, 'We don't have coffee in the house. We're not drinking caffeinated products.' He then offered them tea. My response was, 'We only have herbal tea.' He then asked if they would like milk or sugar. I informed him, 'We don't have any milk or refined sugar, only brown raw sugar.' The response was, 'That'll be fine.'"

Once Judy sat with our guests, she couldn't help but admire Arthur's intellect and vision. He began describing a system for health clubs that would incorporate a membership card that could be swiped into the terminal of several exercise machines, which received their resistance from a computer controlled electronic motor. The machines would record the member's workout and at the end of the training session, print a read-out, or store the material for future reference. Arthur was describing in the early 1970s what became in the 1990s the Lifecircuit® and Lifecenter®, produced by Life Fitness. The visit ended peacefully with never a mention of any break in our relationship or why he had suddenly decided to "drop by."

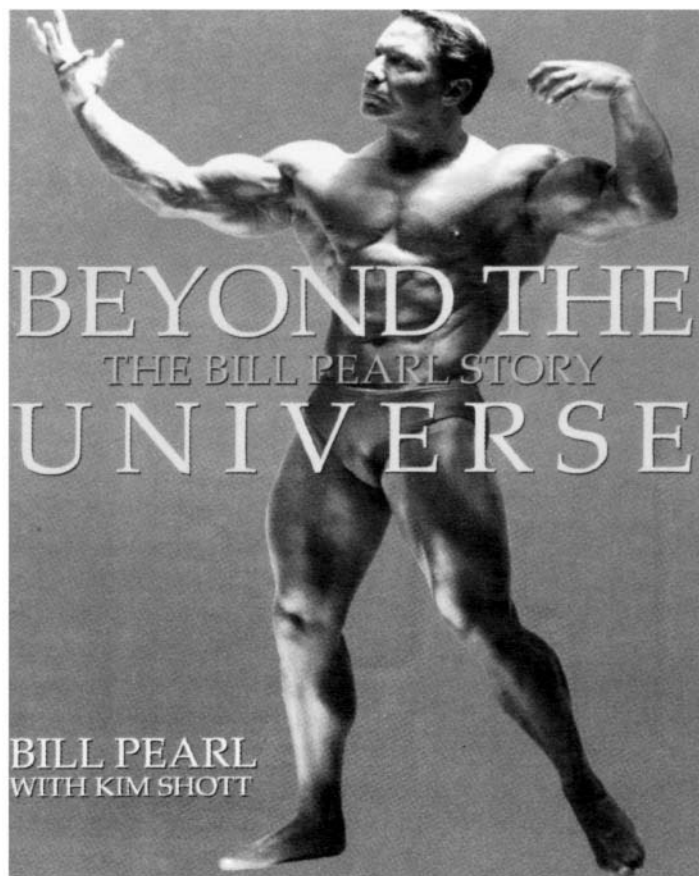
We stayed in touch, but with long gaps in between. I appeared on two of his weekly *Wild Cargo* television shows. My job was to take gunnysacks filled with venomous cobra snakes and dump them on the floor of the television studio as the cameras recorded Arthur's ability to toy with deadly reptiles. On another occasion he flew me from Las Vegas, Nevada, to Los Angeles, California, in his private jet. Months later, I attended a lecture at the University of Virginia where he was extremely hard on the medical profession, telling the audience what a "gawd-damn" bunch of misfits they were. Later, I toured the Nautilus factory in Deland, Florida, which was indeed impressive.

With time, we grew even further apart. When I phoned, his usual reaction was, "What the 'gawd'-damn hell do you want?" His latest comeback when asked how he was doing, was, "I'm sitting here waiting to die."

Our last face-to-face visit occurred in 2001 at his home in Ocala, Florida. At the age of seventy-nine, he

claimed to be in poor health, but his mind was as sharp as ever. Sitting on a sofa, wearing only a bathrobe that revealed everything from his chest down, his first words were, "It's been 43 years, 5 months and 26 days since we first met." The next couple of hours were spent rehashing research he'd done on negative training in the 1980s. The rest of the time was taken up by his recitation of the mistakes I'd made over the years. I was able to point out a few of his. Yet, I couldn't help but thank him for the profound impact he'd had on my life. I closed the visit by saying, "Arthur, you've been a good teacher." His reply, "Well, school is over! This is the last 'gawd'-damn time we'll see each other." As I reached to shake his hand, he lit another cigarette.

*Editors' note: This article is reprinted from Bill Pearl's **Beyond the Universe: The Bill Pearl Story**. To order the book, go to: [www.billpearl.com](http://www.billpearl.com). We have our own recollections about Arthur, and they rival the ones Bill reveals. Arthur was/is, indeed, a talented, mercurial, violent, creative, egocentric, and fascinating man.*



# THE GYM:

## PLACE OF BODILY REGIMES- TRAINING, DIET, AND DOPING

Bjorn Barland,  
Norwegian University of Sport and Physical Education

In modern society, study of themes like *body and society*, *body and modernity*, and *body and identity* has received increasing popularity.<sup>1</sup> As an object for research, the body has become academically legitimate. One of the main challenges in an academic approach to the human body is to understand the processes that actually create the body as an example of modernity. The challenge is to track the physical and social processes that turn the body into something we can accurately describe and analyze as distinctly modern. The first question is: What kinds of processes do indeed create a modern body? With this as a theme, the present article first focuses upon the processes of training, dieting, and doping as crucial elements in the creation of a modern body. Secondly, this article analyzes the social process that encloses the training, dieting, and doping and thus generates a meaningful way of life.

As a project, the body needs arenas in which the constructions can take place. It can occur at cosmetic clinics, health clinics, beauty salons, gyms, or health clubs.<sup>2</sup> During the last two decades, scientific papers have frequently been introduced on body-culture. A growing part of body-culture is bodybuilding, and the doping issues that are so central to this activity. This activity, of course, takes place primarily in bodybuilding gyms, which cultivate the worship of the body, and where doping plays a central part in the construction of the body. With the body as the medium, and doping as one of the key techniques, a new identity can be constructed.

What kind of action takes place inside a gym?

What kind of meaning or rationality is tied to the regimes of training, dieting, and doping to make them meaningful in a bodybuilder's life plan or in the process through which a bodybuilder creates an identity? To answer these questions I took the role of a cultural anthropologist and went into the "field."

My article is mainly based on fieldwork and participant observation in various gyms in the eastern part of Norway. The article is also based on participant observation from several national bodybuilding competitions. My challenge as a fieldworker was to find and become a part of the gyms where the processes of training, dieting, and doping were being used by active bodybuilders. Fieldwork in closed and separate environments like the gym is all about finding and recognizing patterns which can lead to an increased understanding of this sub-culture.<sup>3</sup>

Over time, I developed genuine closeness to the field and the informants. During my fieldwork, I learned how the participants and the members of different gyms created their unique lifestyles through a process of training, dieting, and doping. My particular goal was to track the meaning and rationale of doping in bodybuilding in order to better understand it. To attain that understanding I had to listen to the users' voices, as I am not a user myself. With this theoretical backcloth in mind it is now time to enter a bodybuilder-oriented gym.

### Inside the Gym

After a quick change in a warm and steamy locker room you enter the weight room, the center of all



activity in the gym. Inside the room, the activity is noticeable. Numerous people use free weights, lie on the benches, lift dumbbells, and etc. The walls of the gym are covered with mirrors. The few open places not covered by mirrors are wall-papered with posters of Arnold Schwarzenegger and Sylvester Stallone. Opposite the counter is an interior wall, decorated with pictures from different events held inside the gym. There is also a printed acknowledgment of a wedding present to someone in the gym. It seems evident that some members have spent a lot of time here, making the gym more or less a second home. Through the loud, fast-paced disco music, you can hear clinks and thuds of weights being used and hitting the floor. The knocks and thuds to the floor have aged a dirty carpet that once upon a time had probably been a pleasant, dark-orange color. The smell in the air is a mix of cottage cheese, boiled eggs, and sweat. It is not an unpleasant smell, one that I have grown accustomed to due in large part to my field work inside these types of gyms for more than two years.

At first glance, it looks like everyone in the room exercises face to face with the mirror. One soon understands the unrivaled importance of the mirror. To display the body or to pose in front of the mirror is a key act inside the bodybuilding culture. Not only for the competent, experienced bodybuilders, but also for the "weekend workout" types, and the "gym rats." Many—maybe too many—see the mirrors inside the gym as a sign of self-obsession or see them as the ultimate expression of the gym as a symbol of a narcissistic culture. To see the mirrors in the gym as simple narcissism, however, is to reduce the opportunity to understand complicated yet crucial inter-human phenomena in bodybuilding. Mirrors in the gym have several functions besides that of just casting a reflection. The mirror is the most important facility for communication. Through the mirror you can see someone without making it obvious you are looking at them. In a bodybuilding gym, it becomes quite evident that a hierarchical system is in place. Soon one understands not to interfere with the bodybuilders or experts without their permission.

After a while I became aware of a few guys posing in front of the mirror. To pose in the gym is to display the body in a shared community by way of the common medium, the mirror. The first time you see this happening, you may feel a bit embarrassed. However, after some time you understand that it is a part of life inside

the gym. In addition to the removal of a sweatshirt, a man may take off his T-shirt and flex into the mirror to view pectoral or biceps development. The other guys taking part in this evaluation in turn also use the mirror for the very same thing. Not face to face, however, but into the mirror. The mirror is the all-important medium for communication and evaluation.

What are they looking for? Do bodybuilders pose in the gym to see how big they are becoming or have become? Is it to evaluate size, definition, or maybe to see if the body is dry, hard, sharp, and deep? It is all of these things, at various times. For those who participate in a bodybuilding contest, it is vital to constantly evaluate definition, sharpness, and the results of training on muscle mass and structure.

Muscle definition is an absolute requirement. If you do not achieve definition, then you are not a real bodybuilder. "*Doc*" was one of my key informants inside the gym. He was a competent bodybuilder, and his nickname refers to his interest in and knowledge about doping. In the gym, he was an oracle on the subject of doping. "*Doc*" had tried almost everything, and he had an enormous overview of everything that was available on the market. He said this about the importance of a defined body in terms of a bodybuilder:

When you have gone through a definition period, you have won a great victory over yourself and you will for certain be stronger and thus more disciplined as a person. Those who go through a "*Deff*" (definition period) with success have achieved as human beings.

The posing ceremony in the gym is also something special. To pose in the gym is something a bit more than just a display of muscles. When someone flexes in the gym, it is a message, a confirmation of taking part in the community. It is also a confirmation of the connection to what the gym sees as important. Flexing in the mirror confirms to oneself and to others that progress is being made. To flex one's muscles publicly is to become incorporated into the gym community. The point is to do this with some discretion. This is not easy inside a gym with mirrors all over the place. Nevertheless, to hide in plain sight yet still be seen is the aim.

To be noticed is more than just "*social mirror-*

ing." It is also a way to "seat" oneself in a certain context. Communication through the mirror is a way of integration or disintegration. To understand the symbols and the body language through the mirror is to take part in a community. When you understand the contextual codes, and are able to help form opinions of what has been seen inside the gym, you become a person of some importance. Even so, you are still not at the top of the social ladder; the top is only attainable via participation in a bodybuilding contest.

In the beginning, you have to accept or subjugate yourself to the gym's regimes. You are not forced to do this, yet if you want to be "in" you have to follow through, step by step. By participating as an active partner in the training regime, dieting, and doping, you can start as a novice. It is still a long way up the ladder to the place where the serious bodybuilders are found. As a beginner, you do not start out by dieting and doping. In the beginning there is only cautious training. After the first self-doubting period of three to four months, you start wondering about the right way to diet. Then, after a new period, you begin to think long and hard about doping. For those who decide to take part in this regime, it is not just a part of life, but a way of life. Before investigating any theoretical explanations, we have to examine the make-up of the regimes.

### Training

To build the body has to do with character, will, and self-discipline. Training is a serious process, not only for the expert bodybuilders but also for those who will never participate in anything outside the gym. For both groups, the training is planned and designed in definite program sequences. The most common beginner's program in Norway is called 4 + 1, or fours days with training and one day off. (See chart.)

The program is like a work shift; it is a long-term commitment. The bodybuilders know what is in store for the coming months. One's social life must work around the training regime. Going out to the movies, or out to eat, or out on dates are worked into the training regime schedule. The informant who followed this program never did much in the way of social activity as, by day three, he was far too exhausted.

How one should correctly train is the subject of much debate. Based on this 4 + 1 training regime, each muscle group can be trained in a unique manner. How

Training Schedule	4 + 1 System	1 set = 8-16 reps
Day One	Chest	4 Sets
Day Two	Back & Forearms	3 Sets Back 1 Set Forearms
Day Three	Shoulders & Legs	3 Sets Shoulders 3 Sets Legs
Day Four	Arms	3 Sets Biceps 3 Sets Triceps
Day Five	OFF	

heavy the bodybuilders train depends on which muscle group they are working, and the date of the next competition. They talk about shocking the muscle, stressing it to the point of near exhaustion. To sum up—training is not an arbitrary thing, but a well-planned and organized long-term process.

To train this way requires knowledge of how to balance training, resting, and dieting. And, of course, of how to insure an adequate intake of hormones. If the trainer can find a balance between these regimes, a specific rhythm will develop during which they all work and function together. If the trainer can get into this rhythm, he will have control. Rhythm is a bodily experience and a manifestation of knowledge in action. The body swells, and the muscles grow.

Inside the gym, there are from time to time professional bodybuilders present. They will be visiting the gym, or staying in town for some reason. During my field experience there was a pro bodybuilder who visited the gym on occasion. His nickname was *The Animal*. He was enormous. To study a pro bodybuilder is more than just interesting for less-advanced bodybuilders; it is a way to redefine the body's possibilities. This is so because *The Animal* possesses something that the others do not:

The Animal doesn't drive himself particularly harder than I do but he just "grows muscles" in an incredible way. It is as if he just sets his mind to it, and they grow...I don't understand it. I can't see how someone can have such muscle-mass...amazing.

Another of my key informants had studied *The Animal* when he was training his back. This informant, too, was completely astonished by what he saw. He stated:

I saw The Animal train his back. It (the back) was quite unbelievable. He pulled the weight right down, and his back reacted like a machine. It was as if his back muscles were "alive," like the muscles were just crawling under the skin, working on their own.

If you read a muscle magazine, such as *Muscle & Fitness*, there are always articles in which a well-known bodybuilder supposedly reveals his/her "secrets" to training. Generally, the secrets are common programs, but often there is something that brings to light a new twist to the old program. What every article has in common is the necessity of hard work and nothing but hard work. No short cuts, just hard work.

The most important thing during a workout is to be in touch with and concentrate on the muscles themselves. If you don't have that *contact*, you are not able to separate the right muscle and then you don't get the correct response to what you are doing. *Contact* is essential to force or "*fool*" the muscle to grow. If you get contact you will get a *Pump*. The *Pump* is one of the most important concepts inside the gym. The *Pump* is a reward for good, systematic training. The *Pump* is a measurement of doing things the correct way when training. To *get pumped* is in a literal sense to blow up the muscles. The muscle responds to the training by filling with blood and thus becoming solid or hard. It can remind one—as Arnold Schwarzenegger himself so famously said—of an erection. A requirement for the *Pump* is a mental connection or contact with the muscle. To have contact or to get contact with the muscle or muscles is a matter of skill and seriousness in training. An informant expressed it in this manner:

For one year I did not grow in my biceps at all. So, I started with one arm concentrated curls with light weights, not heavier... It was then that I got hold of it (biceps), and then I started to make

progress as far as biceps growth.

In periods before a big bodybuilding contest, there is a special atmosphere in the gym. Training is a concrete physical act inside the gym. But you will also notice that there is always someone sitting there having something to eat. Or, if they don't eat they talk about what to eat after the workout or what will be consumed at the next mealtime. Words such as protein, fat, and definition are used over and over again. Inside the gym, to eat is something far more than just having a meal. It is a *diet—a way of life*.

### Dieting

Just like the training regimes, the diet is a result of strategic, thorough planning. The meals are put together with exactness gained from previous experiences. Nothing is put into diet regimes that will not influence body development in the right way.<sup>4</sup> During a "definition period" in training, the bodybuilders absorb everything that can help build muscle while burning fat. They plan their meals with a fanatical zeal. The diet or the food is more or less an item of worship, similar to what one sees in an anorexic. One week before a competition I called up an informant. He was consumed with writing down every kind of rich meal he would prepare and consume *after* the competition. He wrote down every recipe he could think of on yellow post-its to hang up all around his apartment. The hunger made him desperate.

Through these diet regimes the body loses all "redundant" fat and the muscle is thus displayed with sharpness under thin, tight, dry skin. The period before a contest is a period of self-denial and sacrifice. If you do the right thing during a diet you will get the bodily reward, such as *stripes* on the gluteal (gluteus) muscle. *Stripes* are how the bundles of muscle around the gluteal area are described when the muscle strands are seen to be separated, or in a "stripe" configuration which only occurs with an extremely low percentage of body fat. Another sign of success is the distinct, square-sectioned form of the stomach. Extreme leanness makes it possible to separate every muscle in the stomach region. Right before a competition, a serious bodybuilder watches over his/her body to prevent the *smoothing over* of the muscles. If you *smooth out* at this crucial time, weeks and months of training and dieting are wasted. To

*smooth out* is to lose the dry, sharp, and lean body. The separation and definition of the muscles slip away and you have to start all over again. After the contest the trainer gets to eat and drink with long-delayed hunger as a way to celebrate the end of this stage of the cycle.

The patterns and logic of training and dieting focus attention on a routine that is built up inside the gym. Training and dieting are two cornerstones of a program of designing or creating a body. The last cornerstone in this long and complicated process is doping.

### Doping

It is difficult to consider doping to be an undisguised act or a concrete phenomenon inside the gym. Doping is present and hidden at the same time. There is a lot of communication about doping in the gym by means of codes, jargon, and body language. Those who don't understand the codes for doping conversation may chat or ask about it in public. Those who do are branded as careless people. They often experience sanctions such as silence or even exclusion. Those who do not understand the codes for communication in connection to doping are generally beginners, or outsiders. Through codes, body-language, and in particular zones in the gym, doping is the subject of continuous communication. To become part of the community that revolves around doping takes time. I, myself, made several attempts before I understood what was going on. At that point I became aware of the social infrastructure in the gym. At that point I had been in the gym for more than three months.

The concentration on doping is enormous. However, the information about doping circulating in the gym is based on individual experiences, not on scientific studies. These personal experiences are organized and shared with the community as "esoteric" knowledge, and help determine what drugs are used. The chart represents the regime for an average steroid user during a 12 week cycle.

Normally, a dosage per day is taken at the same time each day; a schedule is maintained. There is also a steroid for everything. If you want to get lean you can use Anavar. Anavar is also quite popular among females. If you're *smooth* you can use Primobolan. Some steroids leave the body after weeks while other steroids take months to leave. If you use steroids by injection, you have to know where and when to inject them, and how to handle the "squirt" or needle. As already mentioned,

Anabolic Drug	Dosage Per Day	Length of Time
Winstrol	10-25 mg	8 weeks
Dianabol	6-30 mg	9 weeks
Testosterone	1-25 mg	40 days
Anadrol	5-50 mg	7 weeks
Primobolan	4-50 mg	7 weeks

*Doc* was considered the ultimate expert on nearly every facet of doping. *Doc*, himself, had experimented with most types of steroids, and he would teach those who were seriously interested. Not just everyone could ask *Doc* about steroids, however. If you wanted to learn from him, you had to be extremely serious, and acquire some basic, background knowledge concerning the matter beforehand. If you qualified, all you had to do was line up and wait your turn. *Doc* would give advice to anyone he considered qualified to ask for advice. It made no difference if they were competitors for the next competition, or just a member at the gym.

In spite of *Doc's* "knowledge," the gym also circulated ideas about hormones that were more or less superstition. Below is a quotation that supposedly explains the "secret" of using Human Growth Hormone the correct way:

A lot of people do not get any effect from growth hormones because they do it all wrong. Mr. NN did it all right. That's why he became so big. If growth hormones give the right effect you have to keep the ampules in the fridge and inject the hormones in the left biceps. It has something to do with the brain and the veins. Not everybody understands or knows this. That is why they don't get any effect.

Belief at the gym in the effectiveness of doping is widespread and accepted, whereas belief in medical warnings about the dangers of bodybuilding drugs is either denied or ignored. If a pro bodybuilder says that steroids and growth hormones used in the proper way do no harm, then he is thought to be right. End of discus-

sion. Should you try to discuss medical or scientific evidence that says the opposite, you will be ignored. Another factor tied to drug use was the clear distinction between the "use" and "misuse" of doping. To "use" doping was to set up a "rational" regime—one with training and dieting. Those who "misused" doping were those who could not or would not try to understand the importance of placing doping in its proper perspective.

The paradox is that the bodybuilding community is, in many ways, a product of modern scientific pharmacology. This becomes evident when we look at the (old) *Bible* of the steroid world, the late Daniel Duchaine's *Underground Steroid Handbook*,<sup>5</sup> and the following quotation:

I have never lied about steroids, and I'm not going to now. Look, I'm not an altruistic person, things like plain, ordinary lies don't hurt me; hey, we're in America, we should get used to stuff like this, it happens everyday. No I'm pissed because this anti-steroid propaganda has resulted in lots of excellent steroids going off the market and too, too many fake, dirty and potentially dangerous drugs replacing them. I choose to live my life in an enhanced metabolic state because I function better this way. I'm stronger, more attentive, and less lazy and yes, healthier while using anabolic steroids. I don't want to go without them for the same reason that, for example, some particular person wouldn't go without thyroid, or Valium. If the drug doesn't damage your health (and I assure you, I am very healthy while using steroids) and improves your day to day life, why not take advantage of what science and technology has created for us?

In that one quotation we find both the confession and the renouncement. *Science and technology* have created the possibilities, but Duchaine does not listen if "science" tries to warn of the possible consequences of using some of these drugs.

The aim for me, of course, was not to raise the

scientific level within the gym. For me, it was more important to analyze those processes that generated consensus about steroid use. The way the members of the gym handled the side effects of steroid use was a key to either entering or staying in the community. To tolerate those who got angry and irritated at others during a doping cycle was a sign of wisdom and understanding in the subculture of the gym. This had a double meaning. When you showed understanding, you signaled that you realized that steroid use can be the reason for unpleasant and literally rude behavior. At the same time, you also signal that by accepting the behavior you expect the same understanding next time *you* are on a heavy cycle of steroids. Such "understanding" is a way to communicate about what's important and what is not. It is also an environmentally exclusive way to convert a negative effect into one which is positive, and to amplify the acceptance of steroid use.

So, the community is developed through meaningful communication based on the regimes of training, dieting, and doping. But the knowledge and seriousness must also be displayed by one's body. After months or years under these regimes, the body is placed inside a hierarchical system. The knowledge, the way you have understood the principles of training, dieting, and doping have to be displayed for the community to witness. It is not enough to just talk. Action and how you build a body is the only way to *be somebody*. It is a long trip. The first step is to use all of the right clothes that manifest belonging to the gym. Then, after a while, you see your body change. Soon you can do your first posing session inside the gym. The next step is to be a *gym-rat*. The *gym-rats* are the most serious, hard-training members of the community. They train a lot, follow a strict diet, and use steroids in the same way as the bodybuilders, but they never carry through. *Gym-rats* never take the final step and participate in a bodybuilding contest. Only a few in this community follow through. The contest is, in the gym, the final *rite de passage*. After a contest you will join those at the top of the subculture of the gym. The *gym-rats* in contrast are marked as being something less than real bodybuilders.

You can see it in the legs, he is a typical 'beach builder.' Has a good upper body but thin legs. If you want to be a real bodybuilder you have to show it with

the way the legs are developed. Having brawny legs is the way to separate the experts from the beach guys.

For an outsider the life inside the gym can appear strange and odd. But is it possible to make it comprehensible? If the answer is yes, how do we explain the gym as a social phenomenon? A social phenomenon has to be understood. And how is the gym organized, and is it based on intrinsic values or meaning? Why do my informants and others in the gym choose this way of life? Because, to them, it is a meaningful way of life. To adopt a life made up of the regimes of training, dieting, and doping provides an opportunity to build a body and, more important, to build something together, with others of a like mind. In a modern pluralistic society with all its options, why would someone choose a life inside the gym with its regimes of training, dieting, and doping? To choose such a life inside the gym seems peculiar and strange. What can help us to understand such a choice? First, we have to realize that to build the body involves something more than to simply change its appearance. Building a body in the gym is also to build an identity. Training in itself is a process, with definite relations and codes which, in sum, explain that this is a way of life. Training is secular asceticism. *To train* is in and of itself not enough. What is important is the *way* training is done.

Training is systematic, it is predictable, and it must be methodologically correct. Part by part is the body trained. The different body parts are to be discussed in the third person and should be treated individually, influenced, and forced to respond. But it is not only training which is subject to this methodological rationality. A nutrition regime or *diet* is also subject to the same discipline. Nutritional regimes are to be followed in a slavish manner. The same meals with the precise allotted ingredients are to be eaten at the same times, day after day. Training, diet, and doping are all-consuming. *Face*, a key informant, told me about how time at work and leisure time was spent to find new training programs, find new exercises, and compose training programs with the exercises which were already known. He also said that the use of doping was not a way to escape or a cheap and impulsive way to have a short term gain. He said dope was not used to avoid training; it was used in order to be able to train even harder.

The gym is a modern arena for identity-constructing processes. Modernity's pluralism has made a wide range of constructed identities available, and some are a life-time project. To build "a modern body" is such a life-time project. Seen in this light, it is possible to view such a project as a modern vocation. Seen in this light, identity is created by adding a significant amount of muscle to one's physique. Doping is done in the service of accelerating this building process, but doping is also involved in esoteric knowledge that helps to create a fellowship. Doping deals with building or constructing something together with others, and it deals with constructing a body in an environment which creates a consensus that the shared activities of training, diet, and doping—and the lifestyle they demand—are worthy.

#### Notes:

<sup>1</sup> M. Featherstone, "Lifestyle and Consumer Culture," *Theory, Culture & Society* 4(February 1987):1; A. Giddens, *Modernity and Self-identity* (Cambridge: Polity Press, 1991); M. Featherstone, "The Body in Consumer Culture," in M. Featherstone, M. Hepworth & B.S. Turner, eds., *The Body. Social Process and Cultural Theory* (London: Sage Publications, 1991); S. Scott and D. Morgan, *Body Matters*. (The Falmer Press, 1993); C. Shilling, *The Body and Social Theory*. (London: SAGE Publications, 1993); P. Falk, *The Consuming Body*. (London: SAGE Publications, 1994); P.A. Mellor and C. Shilling, *Re-forming the Body: Religion, Community and Modernity* (London: SAGE Publications, 1997); and Kenneth R. Dutton, *The Perfectible Body*. (London: Casell, 1995).

<sup>2</sup> A.M. Klein, "The Master Blaster: Empire Building & Body Building," *Arena Review* 5:3(1981): 29-32; A.M. Klein, "Pumping Irony: Crises and Contradiction in Bodybuilding," *Sociology of Sport Journal* 3(1986): 112-133; A.M. Klein, "Fear and Self-loathing in Southern California: Narcissism and Fascism in Bodybuilding Subculture," *The Journal of Psychoanalytic Anthropology*, 10:2(1987): 117-137; A.M. Klein, "Managing Deviance: Hustling, Homophobia, and the Bodybuilding Subculture," *Deviant Behavior* 10(1989): 11-27; A.M. Klein, "Man Makes Himself: Alienation and Self-objectification in Bodybuilding," *Play & Culture*, 5:4(1992): 326-337; A.M. Klein, *Little Big Men. Bodybuilding Subculture and Gender Construction* (New York: State University Of New York Press, 1993); A. Bolin, "Flex Appeal, Food and Fat: Competitive Bodybuilding, Gender and Diet," *Play & Culture* 5:4(1992): 378-400; T. Johansson and F. Miegel, *Do the Right Thing. Lifestyle and Identity in Contemporary Youth Culture* (Stockholm: Almqvist & Wiksell International, 1992); Dutton, *Perfectible*; T. Johansson, "Gendered Spaces: The gym Culture and the Construction of Gender," *YOUNG* 4:3(1996): 32-47.

<sup>3</sup> H. Blummer, *Symbolic Interactionism. Perspective and Method*. (California: University of California press, 1969/1986); E.C. Cuff and G.C.F. Payne, *Perspectives in Sociology [1992 Samhällsvetenskapliga perspektiv.]* Göteborg: Bokförlaget Korpen. 1979 (red); R.M. Lee, *Doing Research on Sensitive Topics*. (London: SAGE Publications, 1993); N.K. Denzin and Y.S. Lincoln (editors) *Handbook of Qualitative Research*. (California: SAGE publications, 1994).

<sup>4</sup> Bolin, "Flex appeal," p. 378.

<sup>5</sup> D. Duchaine, *Underground Steroid Handbook*. (USA, 1989).

# Reflections on Strength, Gender, and Lifting Formulas

*Lyle H. Schwartz, Ph.D.*

When Terry Todd called and suggested that I consider writing a brief history of how I developed the so-called "Schwartz Formula" more than thirty years ago, I was flattered, but the idea really didn't move me. It's been twenty years since I had any direct dealings with powerlifting and I've been busy with other things. Among them, I headed a materials research laboratory for the US Commerce Department for thirteen of those years, and then headed up basic research for the US Air Force. Powerlifting and weightlifting have never been too far from my thoughts, however; I've always displayed in my scientific manager's office an array of statuettes showing athletes in all states of starting or completing one or another lift. Some of these are serious, some whimsical, but all would draw some comment from my science and engineering visitors and bring to my mind the years of my own involvement in powerlifting as competitor, judge and administrator.

What did move me to write this brief note was the pleasure I had in watching the 2004 Olympic Games with my brother-in-law, Roger Yanule, and the discussion the Games engendered about how much stronger the men were than the women. (Some of the readers of this magazine may remember Roger, a strong national competitor at 242 lbs. in weightlifting in the early 1970's who just missed making the 1974 Olympic team at the tryouts in Detroit that year. Our mutual interest in the weight-sports brought Roger and me together and through him I met my wonderful wife, Celesta, whose sister Sylvia is Roger's wife...but that's another story.)

I told Roger that I knew the answer to the men/women strength difference. Men are 30% stronger than women. To be more accurate, when men and women train to their peak performances in the strength sports, powerlifting or weightlifting, the men achieve individual lifts and totals that exceed women of comparable weight by 30%. How do I know that? What data confirm that statement? Well, to clarify, I've got to go back to the Schwartz Formula and to the thinking that led me to develop it. So Terry Todd's request for an article will be answered.

We've all been confronted with the need to answer the question: "Who was the best lifter in that contest?" When powerlifting was a young sport, in the late 1960's and early 1970's, the way we answered that question was to use the Hoffman Formula. Named after Bob Hoffman of the York Barbell Company—one of weightlifting's strongest supporters in the USA from the 1930s to the 1980s—the formula worked quite well for weightlifting. Take the lifter's total, find a number in the Hoffman table corresponding to the lifter's bodyweight, multiply the two together, and you get a "corrected" total. The lifter in any contest with the highest corrected total is the "best."

What is this formula? Why does it work for weightlifting? (I'm going to be a bit mathematical here, so skip to the next paragraph if you want to return to plain English.) The simple theory behind the formula goes back to early giants in science and is based on the principle of self-similarity. Imagine two balloons in the shape of a lifter, one larger than the other. If we can match the big one by blowing air into the smaller, all dimensions growing in the same proportion, then the

<b>Table 1</b> <b>International Powerlifting Federation</b> <b>Open Total Records, 2004</b>			
<b>Weight Class in Kilos</b>	<b>Male Total in Kilos</b>	<b>Female Total in Kilos</b>	<b>Ratio</b>
52 kg.	655	497.4	1.32
56 kg.	665	525	1.26
60 kg.	715	567.5	1.26
67.5 kg.	840	625	1.33
75 kg.	862.5	657.5	1.31
82.5 kg	952.5	637.5	1.49
90 kg.	967.5	687.5	1.41

original two balloons can be said to be similar. Body weight in similar objects increases as the cube of any length (for example height), while strength presumably depends on how big the muscles are and that increases as the square of a linear dimension. Thus, if we divide a lifter's total by his bodyweight taken to the  $2/3$  power, it will correct for differences in size.

That's really what the Hoffman Formula does, and it works. When corrected using this formula, the record totals for all weight classes are essentially the same. In fact, the same formula works just as well for the individual lifts, the snatch and the clean and jerk. The success of this approach in weightlifting contests has been confirmed by many people over the years.

When powerlifting developed in the 1960's, it grew from the weightlifting community, and it was natural to use the Hoffman Formula. But it didn't work for powerlifting. Some of us began to notice that when this approach was used the bigger lifters always won, and not by a little, by a lot. Actually, the Hoffman Formula works pretty well for the squat and deadlift, both performed with the body erect as with the snatch, the clean and jerk and the press (the press being until 1972 the third lift used in Olympic lifting). It's the bench press that is the outlier. All the data showed that bench press records increase directly with bodyweight. I never really understood the underlying physical reason for this, so I was forced to seek a better formula for powerlifting based on measured data, not theory.

Since powerlifting was still a young sport in the early 1970's there was uneven development in the three lifts on the part of most self-trained athletes. I compensated for such unevenness by creating artificial "best" totals by adding together the current records in the individual lifts. A "best" total would have been achieved by that ideal lifter who could match the best performances to date in all three powerlifts. Then I fitted these data to an artificial curve and picked off numbers from the curve for each bodyweight. To use the Schwartz Formula, a person would use my table of numbers and correct just as was done in weightlifting. And it worked. Lifters of all sizes could now be compared.

As the sport grew in popularity and the better lifters trained to new heights, lifters became proficient in all three lifts, totals grew and, to my delight, the formula still worked well in the early 1980's. My approach using "best" lift totals had done a pretty good job of estimating what we could expect from more uniform

training by the athletes. But then something very new appeared on the scene. Women began to claim a spot on the powerlifting platform. Their results, however, didn't seem to fit my formula, and it was not long before Pat Malone, using a procedure similar to mine, made the appropriate adjustments. The Malone Formula corrected for bodyweight when women competed against women and did a fine job of it. Problem solved!

Well, not quite. There was still this little issue that when women competed against men (often the case in local contests where there were few women on the platform), the men always won. And not by a little; the men would win by ten to fifty percent. This was brought to my attention by my old training buddy Bill Ennis, who was promoting co-ed meets. He asked if I could do something about this? The answer to Bill's question turned out to be a remarkable yes. I took the powerlifting records for men and corrected them using my formula. Then I did the same for women using the Malone formula. When I took the ratio of "corrected" totals, the men bested the women by 30%. This worked for every weight class except for unlimited (no formula works for these somewhat "overweight" athletes—they lift more than their smaller counterparts, but not as much as all that extra weight would produce if their bodies retained a similar shape).

So much for history. Does this all still make sense today? Well, it's really pretty hard to make comparisons in powerlifting. Drug-free, drug-using(?), this federation or that one, one-ply bench shirts vs. four-ply, loose rules or strict rules, etc., etc. What data can one trust? Terry Todd assures me that the most reliable data is that associated with the International Powerlifting Federation, and so that will be the first test. Turning to the IPF internet web sight I found the data displayed in Table I.

Since the weight classes in men's and women's competition are the same for the 52-90 kilo classes, I can ask the question of men's strength vs. women by taking the direct ratios of totals. This eliminates any issue of the differences introduced by using the Schwartz Formula for the men and the Malone Formula for the women. Clearly, for the first five weight classes displayed, the ratio clusters tightly around 1.30. Men in these weight classes do have powerlifting totals that are 30% greater than women. The disparity for the 87.5 and 90Kg classes can be traced to the relatively low totals the women in these classes are posting, and perhaps to



women who are "bulked up" and would lift almost as much as this if they shed some bodyweight. I suspect this will change as the women's participation matures further.

Another option for serious comparison is weightlifting, and what better and more timely data set could we find than the recently completed Olympic competition? I pulled the data below from a web site I Googled and analyzed them using the simplest formula available, bodyweight to the two-thirds power (see attached Table II). Lo and behold, the result is the same; men are really (only?) 30% stronger than women. (The

ratio of average men's to women's results is 1.31 for the snatch, 1.25 for the clean and jerk, and 1.28 for the totals. That's 1.3 on average (30% better for men), with an uncertainty that's rather small considering the still young state of the women's weightlifting development worldwide.)

I'm going to leave the explanation for this result to the sports physiologists, but there seems to be no doubt of the result. There are certainly many things that the fairer sex can do better than men, some things that only they can do, but men really are stronger. This is the way we evolved, and this is the way we are.

**Table II**  
**Gold Medal Results of Olympic Weightlifting, Athens, 2004**

(All weights in Kilos. Formula is bodyweight to the two thirds power.

Corrected data (\*) are results divided by formula.)

<u>BW</u>	<u>Formula</u>	<u>Snatch</u>	<u>Snatch*</u>	<u>C&amp;J</u>	<u>C&amp;J*</u>	<u>Total</u>	<u>Total*</u>
<b>Men</b>							
56	14.64	135.0	9.22	160.0	10.93	295.0	20.15
62	15.66	152.5	9.74	172.5	11.02	325.0	20.75
69	16.82	160.0	9.51	187.5	11.15	347.5	20.66
77	18.10	172.5	9.53	202.5	11.18	375.0	20.72
85	19.33	177.5	9.18	205.0	10.61	382.5	19.33
94	20.67	187.5	9.07	220.0	10.64	407.5	19.72
105	22.26	195.0	8.76	230.0	10.33	425.0	19.09
163	29.84	210.0	7.04	263.5	8.83	472.5	15.83
		<b>AV(M)=9.29</b>		<b>AV(M)=10.84</b>		<b>AV(M)=20.13</b>	
<u>BW</u>	<u>Formula</u>	<u>Snatch</u>	<u>Snatch*</u>	<u>C&amp;J</u>	<u>C&amp;J*</u>	<u>Total</u>	<u>Total*</u>
<b>Women</b>							
48	13.20	97.5	7.39	112.5	8.52	210.0	15.90
53	14.10	97.5	6.91	125.0	8.87	222.5	15.78
58	14.98	107.5	7.18	130.0	8.68	237.5	15.85
63	15.83	107.5	6.79	135.0	8.53	242.5	15.32
69	16.82	122.5	7.28	153.0	9.09	275.0	16.35
75	17.78	122.5	6.89	150.0	8.44	272.5	15.33
120	24.32	122.5	5.04	182.5	7.50	305.0	12.54
		<b>AV(W)=7.07</b>		<b>AV(W)=8.69</b>		<b>AV(W)=15.76</b>	
		<b>M/W=1.31</b>		<b>M/W=1.25</b>		<b>M/W=1.28</b>	



### Dear IGH:

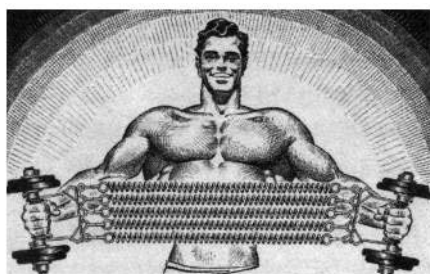
I am so sorry to have to send this news but thought it would be better than hearing it over the phone or on email. It is a banger of a shock so I hope you are sitting down.

On October 26<sup>th</sup> Patrick had an acute heart attack while working out at the gym. CPR was started immediately but oxygenated blood flow to the brain was very minimal, thus causing severe brain trauma. Patrick was in ICU until he journeyed to the end of the trail on October 30<sup>th</sup>. He briefly regained consciousness on the 28<sup>th</sup> to say a farewell to us, we believe, but after that it was a downward spiral. At least his suffering was brief and he had the attack at the place we call his second home.

He thought very highly of the both of you. The article that you wrote on him—which I have right in front of me—was such a grand tribute to a man who touched so many lives and was an inspiration to us all. It will be quite some time before I really believe he won't walk in the door tomorrow. We led a great life. Raise your glass up high and shout "*Slainte!*" (Cheers). May the wind be always at your back.

**Susie O'Shea**  
Corvallis, OR

*This letter touched us, and we suspect it will touch most of you, too, especially those who had the good luck to know Pat O'Shea. Pat had much good fortune in his life, not the least of which was his long and fruitful partnership with Susie—his fellow physical educator, fitness enthusiast and loving wife. Our article on him appeared in IGH Volume 7 No. 4 the April/May 2003 issue.*



### Dear IGH:

John Fair's *IGH* June/July 2003 article entitled "Mr. America: Idealism or Racism" was indeed interesting as well as quite a revelation in certain aspects. I, personally, think that Peary Rader's *Iron Man* magazine was the best publication in the physical culture field but I did not know about the Rader connections to the mid-1950s A.A.U. rule changes. Perhaps that's because in 1955 I briefly severed contact with the Iron Game and perhaps it was also that *Iron Man* was not available in every neighborhood. Sometimes one had to search for it. Anyway, after my having re-read John Fair's fine article many times, please permit me to share my thoughts.

Via my mental time machine I was quickly able to travel back to 1959 when I was regularly training with Arthur Harris in the Bronx Union YMCA. Those were the days when everyone was natural. The chemical monsters had not yet come. Symmetry, proportion and muscularity were admired in bodybuilding. Not just the huge size of a King Kong.

Nobody ever trained harder than Arthur Harris. Those of us who had the opportunity to train with him (me, Marvin Eder, Leroy Colbert, Elmo Santiago, all of the guys in the Bronx Union) can attest to that. He was one of the most muscular men ever. Inspired by Grimek, he was a good poser. In terms of athletic ability, in his pre-bodybuilding years he had been a skilled boxer who had sparred with champions like Beau Jack, Sandy Saddler, Ike Williams, and Johnny Saxon at the Salem Crescent Boxing Club in Harlem. His boxing career was cut short because of an accident. Then he found bodybuilding. He competed for the Mr. America title several times. Each time he was obviously the most muscular competitor. Artie would do a gut-busting set of 950 pound leg presses or 400 pound lat machine pulldowns or wide grip chins with 200 pounds or behind the neck presses with 200 pounds at a bodyweight of about 190. Drenched in sweat, he'd take a sip from his mysterious thermos and with a little smile he'd burst into a chorus of *Volare* or some other musical hit of 1958. He revealed to me in 2002 that the thermos contained only chilled water.

The 1950s were a paradoxical decade. The Fifties gave us some great music. There were marvelous groups like The Platters. There was Roy Hamilton, Dinah Washington, and Al Hibbler. Yet there were also things that were not right. About 1952 or so Arthur Harris, wearing his military uniform, had just taken his seat

on a bus somewhere in the south. Arthur, who was from New York City, had decided to sit up front behind the driver while his Army companions chose seats in the rear of the bus. The young New York City serviceman was not accustomed to what was about to transpire.

Arthur was looking to his left out the window when the bus driver, looking at Arthur in the rear view mirror of the not-moving bus, loudly declared, "Boy, you go sit in back with your friends." Arthur continued looking out the window and did not move. The bus driver, even louder, exclaimed, "Boy, did you hear me? I said go sit in back!" Arthur said nothing and did not move. The bus driver then made a grave mistake. He got up, turned and with both hands grabbed United States serviceman Arthur Harris by the lapels and lifted in an effort to force him to stand up. Poor misguided bus driver. Arthur exploded into action. When everything was over the bus driver's jaw was broken, he was sprawled in a heap on the floor and Arthur had again taken his seat looking out the window. Six months in military confinement would be Arthur's punishment. This account came from one of Arthur's military companions that day on the bus.

Young, soft spoken and articulate, Arthur Harris would be victimized by injustice on several other occasions during his life. In 1959, before he traveled to Georgia to compete in the Mr. America contest, Arthur did a posing exhibition in the Bronx Union YMCA after a weightlifting competition had finally terminated. I was there. So was Marvin Elder and his bride. I remember how thrilled I was when legendary Bob Hoffman entered the Bronx Union Y and I was the one to direct him to the gym where the weightlifting was to take place. And I remembered how perplexed I was when, after the lifting, Hoffman walked out when it was announced that Arthur Harris was about to do his posing routine for us. I didn't understand why he left. Didn't we learn about becoming big and strong in his magazine? Didn't I ask my mother a few years earlier to send money away for the York Seven-in-One Home Training Outfit? Didn't I borrow the training advice in *Strength & Health*? Why would he walk out and look so disinterested just before one of the most muscular men ever was about to pose? Yes, I was perplexed. I didn't know what to make of it. I was a naive kid. Maybe I still am to some extent. Only now I'm no longer a kid.

In the 1959 Mr. America Arthur Harris was obviously the most muscular competitor. It was the opinion of most people, including the selected winner,

that Arthur Harris should have been proclaimed Mr. America. Yet he was placed 8<sup>th</sup>. EIGHTH. Although most people were unaware of some new, arcane rules which, had they been in effect some earlier years, might have disqualified some previous winners, the reason why Arthur Harris would never win was obvious. Even when he was the best he could not win.

One can not help but wonder why haughty A.A.U. officials of that time, who had apparently never been bodybuilding champions or even worthy competitors and who manifested no discernable muscularity, with an interest only in weightlifting, should have had anything at all to do with judging physique contests. In *Strength & Health* and *Iron Man* young men were encouraged to strive but when they tried some were humiliated. That period of history eventually disappeared but too late for Arthur Harris, George Paine, and countless young bodybuilders of various ethnic groups.

In 1959 my training with Arthur Harris undoubtedly contributed to getting me in the best condition of my life, up to that time. So even after my own frustrating experience earlier that year at a Mr. New York State contest with a well known trio of A.A.U. officials (one of whom refused to give me athletic points declaring that I "could not have won" the New York High School shot put championship when I, in fact, had done exactly that), I decided to enter the 1950 Mr. America along with Arthur. I submitted my entry. My only goal was to do the best I could. However, after another unnecessarily hostile and humiliating experience at Elechester, in Queens, N.Y., I decided that there was no sensible reason to put myself through any more degrading nonsense. I did not go to the contest and I quit United States bodybuilding competition forever. Enough was enough.

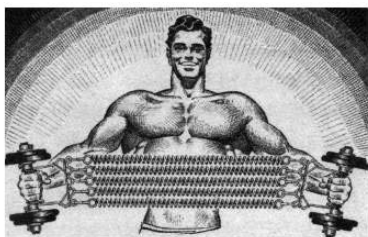
The British NABBA Mr. Universe contest in 1965 proved to have the most fairly judged bodybuilding competition I have ever seen or competed in. Each contestant was treated with respect by judges and audience alike. There was no prerequisite that each competitor had to also be a weightlifter. Apparently the NABBA people sensibly realized that these were two different activities requiring different training. Mr. Universe was what it said it was: a physique contest. My admiration for Oscar Heidenstam is boundless.

Childhood, adolescence, impressionable years. One looks for acceptance and hopes to avoid painful rejection. We seek heroes and want to be like them. We sometimes find out later in life that these "heroes" are only fragile, fault-laden human beings like ourselves.

*Strength & Health* magazine inspired many of us kids to become like John Grimek or Jules Bacon or Steven Stanko or Frank Leight or Santo Leone or Steve Reeves or Kimon Voyages or Joe Lauriano or Alan Stephan or Val Pasqua or Elias Rodriguez. We were going to become Mr. America, which was the greatest thing anyone *could* become.

Melvin Wells is gone. Arthur Harris left us on May 17, 2003. Most of the A.A.U. officials of that time have also departed. What was it all about? We who lived through that era are now very aware of how temporary everything is. At one of our AOBs reunions in New York City's Downtown Athletic Club in the late 1980s I was having a conversation with the great John Grimek. John realized that I didn't have a bodybuilding title and he suggested I enter a masters competition. I replied "John, I no longer have the *need* to get on stage and pose to have people judge me." John looked at me and said, "good for you." He realized that I had finally grown up.

**Dr. Ken Rosa**  
The Bronx, NY



**Dear IGH:**

Ian Batchelor was my favorite uncle when I was growing up and I am trying to locate any and all information I can to ensure that I can keep his memory alive for the younger folk in my family. My mother's maiden name was Alice Johansen and she had a sister "Bea" who married Ian. They had one daughter, "Janice."

Ian and Bea lived in Gardenia, California and my family lived in Salinas, CA. Ian and Bea used to come visit us now and then and he would entertain us all. He occasionally went deer hunting with my dad but he was too big to ride our horse. He *loved* to drink beer and lots of it. Bea seemed to try to keep up with him but it cost her in the end. I visited them sometime in the late Sixties and my time with Ian was nothing less than wonderful. His stories of his bartender days were most entertaining. When my mother passed away in 1992, I got to keep an old scrapbook that contained a few newspaper articles about Ian. I have the *Mighty Joe Young*

video where he was one of the ten strong men that had the tug-of-war with Joe. And, I have a few photos from 1957 that I took using my old Brownie Hawkeye camera when he visited our family when my father passed away. I would have been 13. I also came across your April 1995 article posted on the web from *Iron Game History*, entitled "Mac and Jan." The story brought mostly smiles but I was upset to learn how Janice (his only daughter) may have taken advantage of him in his final years. Other than that, my archives are pretty empty. When I speak of Ian I do not want to sound like an old geezer making up unbelievable stories. But Ian, bless his heart, seemed unbelievable.

**James J. Foster**  
Via email

*I was very happy to get your email and to learn that good old Mac is well-remembered by some of his relatives. You're right, by the way, to consider him special, as he was a truly remarkable man. Most historians of strength would consider him to have been history's greatest arm-wrestler as he apparently took on all comers for approximately 25 years and was never beaten during that time. He would play right or left-handed, with a thumblock grip (the normal grip used in arm or wrist-wrestling) or an openhand grip—depending on the challenger's preference.*

*I visited him quite a few times over the later part of his life, with the first visit coming in 1965 when he was about 58 years old and I was 27. I went to his bar that day with Bert Elliot, one of his good friends from the strength world. Mac was then retired from arm wrestling, having quit at 50 and lost a bit of weight, but he was still a big man—weighing about 280. I was in my lifting prime then, and weighed about 330, and I was proud when he compared our hands and showed me that they were almost exactly alike in size and shape. I always considered him a special friend, and I was saddened by the circumstances of his last years. But he had a hell of a life when he was in his glory days and he gave a great deal of happiness to a great number of people.*

—T. Todd

We want to wish one of our favorite strongmen—"The Great" Joe Rollino—a happy 100th birthday. Joe, who knew and worked with Warren Lincoln Travis and many of the other early twentieth-century greats, celebrated his birthday on the 18th of March with a party organized by Mike D'Angelo and other pals.