

# THE PIONEERS OF PROTEIN

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*In the 1950s when I started bodybuilding, most guys believed all you had to do to develop your body was lift weights. They didn't think what you ate really mattered. Now we all know differently.<sup>1</sup>*

—Frank Zane

Nutritional supplements have become big business as America enters the twenty-first century. One can scarcely thumb through the first 30 pages of any fitness or muscle magazine without being inundated with advertisements for these kinds of products. What all of them have in common is some kind of protein ingredient or an improved way of ingesting this basic building block for muscle. Protein products are now sold as stock items at nutritional outlets, such as General Nutrition Center (GNC) stores and supermarkets. Even Wal-Mart sells its own brand of protein supplements for low-carbohydrate diets. Surprisingly, however, this nutritional advancement which (along with steroids) sparked a revolution in bodybuilding, is of relatively recent vintage. Although dietary regulation extends back to the health reformers of the early nineteenth century, and some aspects of the health food industry trace their origin to the isolation of the first vitamin in 1911, the efficacy of protein supplementation was not appreciated until after World War II.<sup>2</sup> Obviously, leading iron game promoters in the 1950s—Bob Hoffman, Peary Rader, and Joe Weider—played major roles in its development, commercialization, and acceptance, but the prominence of their public pitch has obscured the activities of earlier pioneers who first conceived the idea of protein supplements.

In the spring of 1946 Paul Bragg, noted physical culturist and natural foods advocate, visited Hoffman at his home in York.<sup>3</sup> With an eye to striking up some sort of business proposition and aware of the "tremendous influence" Hoffman had "over thousands of young men in America and over the world," Bragg encouraged him to enter the food business. Upon returning to his home in Burbank, California, Bragg further pursued this line in a letter, explaining to Bob that he would be doing his legions of followers

a real service to see that they get from you supplementary foods and special foods that will be part of their training program. As I told you in York, you have done what no

other barbell man has ever done. You have made your barbell students nutrition-conscious and that has been the weak link all through the history of barbells. I remember thirty-five years ago or more talking to Mr. Calvert. At that time I wanted him to add some dietetic information to his course, which I agreed to co-operate with him on. But he brushed me off with, 'As long as they eat good nourishing food that's all that is necessary.' . . . and his idea of good nourishing food was fried meat, mashed potatoes, white bread, coffee, and dessert. I feel that he would have had twice the influence over his students if he had made them a little more food-conscious—and that is exactly what you have done.

By way of an additional rationale and incentive to this altruistic appeal, Bragg held out the prospect of a lucrative income from a product which, unlike barbells, would generate a constant turnover in sales.

I believe, Bob, that we can really add a tremendous income to your earnings, because the food business is not like the athletic equipment business. In 1913 I bought a set of barbells from the Milo Barbell Company and today they are just as fine as they were way back there in the dim past. But when you get thousands of your students eating your food and they consume it, you have no idea of the tremendous income that you will have rolling in.<sup>4</sup>

Bragg even suggested that the product line be called "Bob Hoffman Health Foods." That Bob did not enthusiastically embrace Bragg's offer to collaborate in such an uncertain enterprise is not surprising. In his reply he admitted that "I have no great amount of ideas as to what we should sell for I have not delved into the subject to any great extent." Whole wheat bread was the only mar-

ketable food item Hoffman could suggest, the commodification of protein being beyond the imagination of both physical culturists.<sup>5</sup> Food supplements, at least at this point, would have been an even greater leap in the dark than either oil burners or barbells, the two commodities on which he had established his fortune in York.

Still Bragg had planted an idea that would later bear fruit, rightly reckoning that Hoffman had already done much to raise nutrition-consciousness. Indeed correct eating figured prominently in Bob's first "big book," *How to Be Strong, Healthy, and Happy*, published in 1938. He believed that "a strong and healthy man must consume foods which contain all the necessary elements," but Hoffman saw no need for any scientific study of food to determine what kinds were best for any particular bodily function. "A wide variety of good plain natural foods," he advised, "will be sufficient to supply the body with all the minerals and vitamins it requires."<sup>6</sup> Much the same message is conveyed in a follow-up volume entitled *Better Nutrition for the Strength and Health Seeker*, published in 1940. Here Hoffman recognizes the importance of protein as the most necessary ingredient to tissue building and repair, but he places no special emphasis on its value to weightlifters or the amount of protein that should be consumed. In line with most recent studies, he believed that most people probably consumed too much protein since the body can only ingest a limited amount of it for tissue growth. The remainder is available for fuel, but even in that process there is considerable wastage. "Starch, sugar and fat are burned up almost one hundred per cent in the body, but only part of a protein is burned and the rest is eliminated, mostly from the kidneys." It was for this reason that "those who suffer from Bright's Disease are warned to be very moderate in their eating of meat." Another reason for exercising moderation was that "protein is expensive as compared to starches and sugars." Finally, according to data Hoffman cited from the Technical Committee of the League of Nations, the recommended dose of protein per day for an adult over twenty-one was only .045 gram (or 1/60<sup>th</sup> of an ounce) per pound of bodyweight. This computed as just 2.5 ounces for a 154 pound man and 2.1 ounces for a 132 pound woman.<sup>7</sup> Hoffman therefore recommended a balanced diet consisting of simple foods from all the nutritional categories. While it must have disappointed him that this book sold so few copies, especially in contrast to his books on sex technique and marriage, nutrition

remained, second only to proper physical training, as one of his four essential rules for good health.<sup>8</sup> In any consideration of nutritional awareness among early iron game promoters, Hoffman was clearly in the forefront, as he was in virtually all other categories.

Notably different in outlook was Peary Rader's *Iron Man*, which—though offering ample coverage of lifting events, bodybuilders, training routines, and exercises—was for years almost totally devoid of insights or advice on nutrition. Finally, in an early 1948 issue Rader prescribed a "Diet for the Strongman," but it was obvious that he knew little about the subject. He simply advised readers that "the diet of most successful bodybuilders is just the average well rounded diet." To gain muscular bodyweight one just needed to eat more nourishing foods, but "the more you worry about your diet, the less you benefit by it."<sup>9</sup> It was only through outside advertisements that any nutritional information was made available to *Iron Man* readers. They began in late 1948 with an ad for vitamins and minerals from Walter Marcy's House of Health in Los Angeles and continued in 1950 with Kevetts hi-potency tablets and "44" supplemental food beverage. The latter was sold in powdered form by Patton's Dietetics of Los Angeles and Schenectady and contained such ingredients as soy beans, deep sea kelp, and whole wheat germ.<sup>10</sup> It was the first protein supplement advertised for weightlifters.

Whether these products stimulated further developments is uncertain, but the December 1950 issue of *Iron Man* featured an article by Irvin Johnson entitled "Build Bigger Biceps Faster with Food Supplements." In introducing it Rader explained that Johnson had originally come from New Jersey to Chicago to take voice lessons and now operated one of the finest gyms in the country. When they first met at the 1947 national championships in Chicago, Johnson was far from robust in either health or physique, although he had been training with weights for some years. Now, however, Rader was "amazed" at his transformation. "He had gained a great deal of weight and had a beautiful physique which had recently won him a physique contest in Chicago. He had developed one of the most pleasant and magnetic personalities we have ever had the pleasure of contacting." Rader was also impressed with Johnson's layout, which included a large modern gym, comfortable living quarters, and a huge voice studio with up-to-date recording equipment. But the centerpiece was "a big modern kitchen where he and some of the boys of the gym con-

coct new and unusual and result producing foods and meals." It was by this means that Johnson had transformed his body and achieved amazing results for his trainees. One boy of thirteen, in just four weeks, had supposedly put five inches on his chest, an inch on his arms, and increased his press from 95 to 132 pounds without ever practicing the press. Another lad of 19, after two years of no results, was said to have gained twenty pounds of muscle in just two weeks of training. And Johnson himself, once only able to do 165 pounds for ten repetitions in the leg press, gained 45 pounds and now claimed to do 660 pounds for twelve repetitions. Johnson attributed these gains in great part to intake of B complex vitamins which improved digestion, assimilation, and appetite for bodybuilders.<sup>11</sup> In the following issue Johnson explains how B complex contributed to "bulging muscles" and provides information on how readers can order them from his gym.

So taken was Rader by the breakthroughs reported by Johnson in numerous long-distance calls to Nebraska, that he virtually devoted an issue (July 1951) to them. It featured "The Irvin Johnson Story," a Horatio Alger style recounting of the subject's transformation from a "weakling" to a "superman." Then there were two articles by Johnson himself, the first being the success story of how two of his young charges, Bill McDonough and Johnny Gaal, won the Mr. Chicago and Mr. Jr. Illinois physique titles by employing his revolutionary diet system.<sup>12</sup> In the second one Johnson reveals the so-called "Miracle Food," a protein concoction that he developed in his kitchen laboratory. To demonstrate its efficacy, Johnson experimented on a pair of twins, named Larry and John, who worked out at his gym. Larry had always been bigger and more developed, but when John began supplementing his diet with Johnson's new protein food he became larger than his brother. John's arm alone became one inch larger than Larry's.<sup>13</sup> Even more impressive were the revelations of Rader in an editorial. For him, proof of the effectiveness of Johnson's supplements came from successful experiments he



Bob Hoffman shakes Irvin Johnson's hand during the 1951 Mr. World Contest in Philadelphia in this photo from *Tomorrow's Man* magazine. Just two months later, Hoffman launched his own line of high protein supplements in *Strength & Health*.

had performed on an underweight young woman of 23 and himself. Rader admitted in an editorial that he had become soft from not exercising regularly. But after taking Johnson's vitamin B1 complex and protein food he "immediately began to feel better. Even without exercise I found my muscles becoming firmer and apparently growing somewhat." The results seemed miraculous. "I can truthfully say that I've never felt better in all my life. My bodyweight has increased, tho I had no particular desire to increase it and made no effort in this direction. In fact I gained 15 pounds in one month." The only caveat to Rader's enthusiastic endorsement of Johnson's system was the latter's philosophy that "heavy, intense work where you squeeze out the last repetition possible is neither necessary nor desirable." That impressive results could be achieved with light weights or even no weights was a concept that would likely be questioned by many experienced bodybuilders, but Rader was "dedicated to furthering this great work" of Johnson's. "Progress that you would have considered a miracle in the past will become commonplace in the future," he prophesied.<sup>14</sup> Rader had become a true believer in

"Irvin Johnson's Hi-Protein Food." It was a silver bullet!

Subsequent issues of *Iron Man* featured hyperbolic ads and articles about Johnson's products. "We Produce The Greatest Before and After Cases in the World," boasted an ad for his Vitamin Mineral Supplement. "No One Can Equal Us!" And this was followed by a layout of nine before/after photos with his bodybuilding course and the claim that some of his pupils gained as much as seven inches on their chests in just thirty-five days.<sup>15</sup> In the September issue of 1951 Rader reported "one of the hardest things to believe" from a phone conversation he had had "the other day" with Johnson.

The case of a young man who had trained a year with little progress and weighed 169 pounds. His blood pressure was only 100. His arm measured 14½ inches. He stayed there just 24 hours under the special diet treatment of Mr. Johnson and left weighing 181, blood pressure normal and arm measuring 16¾ inches. Mr. Johnson says, 'no one will believe this so there is no use writing it up.'

"Fantastic? No, It Really Happened!!" is the heading Rader chose to divulge these latest "Miracles in Muscles."<sup>16</sup> But a nagging sense of doubt, along with an immense curiosity from readers over these sensational results, must have led him back to Chicago to revisit Johnson's studio some weeks later. There Rader found that although Johnson emphasized diet more than exercise, his pupils displayed remarkable physical development. He was especially impressed with Jim Park, a future Mr. America "whose arms look like hams hanging from his shoulders." What's more, Rader was struck by the radiance exhibited by some of Johnson's pupils. "Their faces and personalities undergo remarkable changes," he noted. To allay any suspicion that his publicizing of Johnson's methods was done out of self-interest, Rader made it clear that "we have no interest at all in selling Johnson's products. He pays for his ads like everyone else . . . In fact York Barbell Co. have full sales rights to the proteins. So we don't get a single cent, gift or concession for what we have said, and our articles have in no way been commercially aimed."<sup>17</sup> Still it was

Rader's enthusiastic endorsements and free publicity that initially aroused the interest of iron gamers to the possibilities of protein supplements.

How Bob Hoffman obtained the exclusive rights to market "Johnson's Hi Protein Food" is not difficult to imagine. *Strength & Health* was the leading publication in its field, and it is not unlikely that Johnson made a pitch to York for advertising space. But Hoffman viewed his magazine as a company sales catalog and did not like to promote non-York products or anything in which he did not have a direct hand. So he featured a half page ad for Johnson's Hi-Protein, beginning in the April 1951 issue, but it had to be "endorsed and recommended by Bob Hoffman, Famous Olympic Coach" and ordered from the York Barbell Company. Interestingly it was accompanied by an article and cover picture of Jim Park, though without the kind of fawning tributes to his mentor (Johnson) that were so characteristic of Rader's articles.<sup>18</sup> For Hoffman it was just a business proposition and not a revelation. Soon, however, he was showing a renewed interest in nutrition. In the September 1951 issue he admits that he was formerly "not convinced of the necessity for food concentrates and vitamin supplements." But his views were altered "as more and more conclusive evidence" called attention "to the depletion of the soil. The deficiencies have become pronounced through soil erosion and general depletion of vital elements through improper or inadequate fertilization replacement." [Editors' note: Hoffman's views were no doubt influenced by Louis Bromfield's best-selling 1933 book, *The Farm*, which lyrically described the restoration of the soil on his family farm in Ohio by means of organic principles.] Plain simple food was no longer enough, Hoffman argued. Now it was necessary to take protein, vitamin, and mineral supplements to compensate for the inadequacies of the average diet. There ensued in the same issue not only another article on nutrition but an ad for Hoffman's latest product, the York Vitamin-Mineral Food Supplement. Closely following Johnson's line, he insisted that his product helped to "increase the ingestion of protein in building sound muscle tissue."<sup>19</sup> Much though it contradicts his previous position in *Better Nutrition*, Hoffman's advocacy for protein and vitamin/mineral supplements crescendos in successive issues of his magazine.

Then in the February issue of 1952 an

epiphany—the point of his promotion becomes clear with the sudden replacement of Johnson's Hi-Protein Food ad with one for Bob Hoffman's High-Protein Food, replete already with seven testimonials from satisfied customers. One of them, Bob Butterfield of Stockton, California, had already consumed four pounds of the stuff and felt "like a new man." Don Burwell of Tacoma, Washington, "found that plain soy flour is no match for this miracle food" which "added ½ inch to my arms." Christian Herr of Eden, Pennsylvania, had been consuming Bob's High-Protein "for several months" and liked it so much that he had his entire family taking it. Amazingly all seven testimonials had the new product spelled correctly. Indeed the only way for Hoffman to have received such glowing responses was for him to have taken letters received by his office for Johnson's Hi-Protein and altered the product's name ever so slightly. Whether he also now filled orders for Johnson's product that continued to be addressed to York Barbell Company with his own protein miracle food cannot be determined, but it would have been a logical next step—a modified version of the age-old practice of "bait and switch."<sup>20</sup> But such devious methods were exactly the way Bob promoted his "new, improved body building food," although it was being marketed in the same four pound packages for \$4.00 and available in the same chocolate, vanilla, black walnut, coconut, and plain flavors as Johnson's original brand.

In subsequent issues of *Strength & Health*, Hoffman further appropriated Johnson's innovations as his own, claiming that his weightlifters, with the aid of "generous quantities of Hoffman's High Protein body-building food" entered the previous year's world championship in Milan "in such condition that they scored the greatest victory ever." But if anyone's protein was used in preparation for the victory in Milan in the fall of 1951, it would have been Johnson's. Furthermore it seemed necessary to concoct a story of Hoffman's High Protein's scientific development to convince curious readers of its credibility.

The production of a 'miracle food,' such as High-Protein, is not a hit-or-miss affair. A world famous food research laboratory is put to work. Their chemists and the doctors, who are a part of their organization, work out the product. They profit by their years

of study, experience and research.

After a lengthy period of research and testing, the proper blend is obtained. It must be nutritious, containing—as far as possible—all the necessary amino acids, and it must be pleasant to the taste, so that using it is a pleasure. The blend has been prepared and then the aid of a big, nationally known packing company, is enlisted. It is their work to fill the prescription or formula, to prepare the food as outlined by the research laboratories. The ingredients must be handled in a sanitary manner, properly packaged and prepared for shipment. All of this was done with the Hoffman products. We never leave anything to chance.<sup>21</sup>

These were high-sounding phrases, but as generations of York employees could readily attest, all York products were packaged and shipped from the company's plant on Broad Street and later Ridge Avenue. Also Jim Murray, Hoffman's managing editor, has a very different version of his boss's "invention of the wheel" protein story. Not only did Bob virtually steal Johnson's idea but he created his own formula in a most unscientific manner. He ordered some Hershey's sweet chocolate, and Murray observed him "stirring his mixture with a canoe paddle in a soy bean flour container. He was sweating away while stirring and tasting, saying, 'yuk, no one will buy that,' and so mixed more."<sup>22</sup> This trial and error process was a far cry from Hoffman's claims about the involvement of chemists and doctors and a "world famous research laboratory." It was simply a crude attempt to imitate Johnson's discovery.

Soon, in an attempt to distance himself from the other brand, Hoffman changed the spelling of his product to "Hi-Proteen" and produced a new set of testimonials, again premature to the product's availability. "I like your new Hi-Proteen much better than the high protein food you formerly sold," wrote Charles Adolph of Mogadore, Ohio.<sup>23</sup> By the June 1952 issue of *Strength & Health* he was able to feature Hi-Proteen ads with pictures of John Grimek, Steve Stanko, Jules Bacon, and himself on the boxes. Now, in accompanying articles on nutrition, Hoffman was no longer convinced that exercise was the most important of his essentials of health. But he was certain that many bodybuilders failed through poor nutrition to build the muscles they crave.<sup>24</sup>

Obviously the monetary success and potential of his protein supplement was having an impact on his philosophy of health, perhaps more than it was having on its consumers. In the October 1952 issue Bob claimed that he had recently made great gains in weight and strength through regular consumption of Hi-Proteen and exercise over an eight week period. "From 246 to 260 pounds in bodyweight, and from the 100 pounds I had been using in most exercises to 225 in a number of them. . . . Sometimes when I was performing an exercise it would feel lighter than it should and I would have to recount the plates to make sure I was using the right weight. . . . Right now I am in the midst of a program of living almost on Hi-Proteen alone."<sup>25</sup> Like Rader, Hoffman had become a true believer in the efficacy of protein supplements, but only by pushing Johnson aside and capitalizing on his ideas.

In the meantime Johnson's standing was also being jeopardized by developments in Rader's organization. Differences in the philosophy of training between the two physical culturists, prevalent in the beginning of their relationship, continued to widen, especially as Johnson's prize pupil, Jim Park, came to the fore. To bolster his concept of "nutrition being more important than exercise in building strength, health, and physique," Johnson carried out an experiment on Park. He put him on a diet of many light meals of various food concentrates, including the new high protein tablet that he was marketing, and a casual exercise program that included Roman chair leg extensions but "NO deep knee bends or squats." This unique program was "a good thing," pronounced Johnson.

Too many squats, especially with heavy weights, produce big fannies, broaden the hips, and develop an upper thigh like that of a woman. I believe too, that squats work against, rather than for stimulating glandular functions, which is just exactly the opposite of what most weight lifters believe. Many muscle-men claim the squat is a great exercise because it develops a big rib box. Here in Chicago we have proved that it is possible to build the chest bigger and faster by doing our Hi-Chest Pull than it is by doing hundreds of squats. The squat, as you can see, is not one of our favorite exercises. It's vastly over-rated in our opinion.

Not only did Park go on to win the Mr. Chicago title, but he increased his maximum squat from 350 to 415 pounds during the experiment. "Amazing? You bet it is," declared Johnson. "Here's the guy who increased the amount of weight he could handle in the squat by not doing the exercise at all and by concentrating on correct eating and on other exercises." These results flew directly in the face of Rader's foremost beliefs about training, so much so that he had to contact Park to verify whether they were true. Having done that, Rader had no recourse but to issue an editorial disclaimer to Johnson's views, especially on the squat and the value of heavy exercise. "We feel that you must work hard to accomplish anything worthwhile. Nothing worthwhile comes easy in this life."<sup>26</sup> Further to assume the moral high ground, Rader reiterated that his publicizing of Johnson's teachings and products was not motivated by any prospect of commercial gain.<sup>27</sup>

A second volley of skepticism came from a Scottish writer, David Martin, who believed Johnson had been imprecise and misleading in his article concerning the amount of protein tablets that would be necessary to build muscle.<sup>28</sup> In his rejoinder, Johnson pointed out that his tablets actually contained 86% protein, rather than the 47% assumed by Martin. Furthermore, he explained that ordinary meat contains "intact protein" that cannot be utilized by the body until it is broken down into amino acids by proteolytic enzymes from the stomach, pancreas, and intestines. "In addition to containing a high concentration of protein, our tablets contain enzymes to aid in utilizing protein. Because they are easy to digest, they are more effective than intact protein." Thus, he reasoned that "pound for pound, our tablets give more usable protein than meat" and that "a few pills take up a lot less room" in the stomach "than a steak. . . . Also, the smaller quantity permits the digestive juices to do a better job of assimilation. Naturally, it is more difficult to digest a lot than a little."<sup>29</sup> It was quality, not quantity, that counted. Johnson's rationale was convincing enough, but his system's credibility received a more important boost when Jim Park won the Mr. America title in 1952. Although he did not claim full responsibility, Johnson's new ads stated that his "Hi Protein Tablets played an important part in the nutritional program followed by Jim Park in preparation for the

recent Mr. America contest in which he scored so dramatic a success. And Jim is but one of hundreds who will testify to the amazing results achieved through use of these tablets in conjunction with other protein foods.<sup>30</sup> In subsequent months Johnson's advertising efforts intensified, even to the extent that he founded his own magazine, *Tomorrow's Man*, to reveal "the miraculous transformations now being performed by the latest science of nutrition and exercise. You won't find the information and inspiration contained in this magazine anywhere else in the world," he promised.<sup>31</sup>

By now it was obvious that a parting of the ways between Rader and Johnson, just as with Hoffman, was imminent, but the circumstances were different. Soon Rader was marketing his own brand of food supplement called "Super Protein" in advertisements closely resembling those of Johnson. Like Johnson, his product contained 85% protein, and he featured before/after pictures and success stories. By way of innovation, Rader promised to present a different case history in each issue, including the subject's exercise program (headed by breathing squats!), diet, measurement data, and strength tests. His first subject, Dick Fouts, gained fifteen pounds in seventeen days with gains of .6 inches in arm, 2 inches in chest, and 1.3 inches in thigh measurements and increases of 70 and 40 pounds in the squat and bench press respectively. Subsequent subject stories featured such headings as "Bill Brewster's 25 Day Miracle," "High School Student Gains 18 lbs. in 1 month," and "Bob Power gains as much in ONE MONTH with SUPER PROTEIN diet as he gained in previous fifteen months without Super Protein."<sup>32</sup> By no means the least significant aspect of this new enterprise was that Rader's product could only be obtained from his "Body Culture Equipment Co., Alliance, Nebr." Super Protein marked

FOR THAT SUPER-PHYSIQUE

GAIN WEIGHT

Hoffman's  
**SPECIAL HI-PROTEIN**  
"GAIN WEIGHT"  
A Body Building Food  
For Those Who Want  
To Gain Weight  
**70% PROTEIN**  
MADE BY  
BOB HOFFMAN, YORK BARBELL CO.  
YORK, PENNSYLVANIA

**Hoffman's**  
**GAIN WEIGHT HI-PROTEIN**

is a specially blended product that will build stronger and larger muscles. Bodybuilders who find it hard to gain weight, to increase their muscle size, or to get stronger have found this product the answer to their problems. Many users have gained from 6 to 12 pounds of muscle while using only a single pound of this nutritional product. This proves how well it serves as a catalyst in the utilization of incomplete proteins. In good nutrition the basic law of assimilation is that protein cannot be fully assimilated if any of the amino acids are missing. Protein foods lacking in amino acids will often pass through the body as waste, adding only burden to the digestive and eliminative systems. Gain Weight Hi-Protein, on the other hand, is so rich in these essential acids that it supplies nearly 10 times its own weight to facilitate assimilation of incomplete proteins.

It's recommended that you use four teaspoonsful of this product daily. This amount provides 28 grams of the best protein your body can use. Those who wish to gain more weight, however, should use double this amount to speed up the process.

Vast research with animal and human subjects prove conclusively that certain food elements can stimulate rapid body growth. These elements, it can be said, are abundant in the Gain Weight Hi-Protein. For this reason you can be assured that regular use of this product will increase bodyweight and muscle size as desired.

Gain Weight Hi-Protein is sold in Health Stores everywhere, or use the handy coupon and order direct from the manufacturer.

Bob Hoffman, York Barbell Co., York, Pa.

Please send me:

- one canister of Gain Weight Hi-Protein—\$3.00 (powder or tablets)
- four canisters of Gain Weight Hi-Protein—\$10.00 (powder only)
- Gain Weight-Energol Bargain Special—two canisters of Gain Weight Hi-Protein Powder, one pint Energol, plus Bob Hoffman's Daily Dozen course—\$10.00

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

By 1965 John Grimek's image dominated the Hi-Proteen ads in *Strength & Health* and *Muscular Development*. Never afraid of hyperbole, Hoffman's ad claims that "many users have gained from six to twelve pounds of muscle from just one pound of Hi-Proteen."

the beginning of a long line of training aids that Rader would make available to his readers over the next several decades. What's more, owing to Johnson's influence, there was a dramatic increase in the number of articles on nutrition and even an occasional (thinly disguised) editorial preaching the virtues of protein supplementation. "PROTEIN—This is a word on the lips of everyone now-a-days," he wrote at the end of 1953. "Like a lot of the rest of you, we were a bit skeptical of the results of protein supplements until we had done a lot of

testing and study. We are now honestly convinced that they are an aid of major importance in the bodybuilding program."<sup>33</sup> Rader was never as hyperbolic in his protein pitch as Johnson or Hoffman, but he clearly could not resist the temptation to cast his net in the commercial field while clinging to the traditional values for which *Iron Man* was known and respected.

Meanwhile the first issue of *Tomorrow's Man*, with Jim Park on the cover, appeared in December 1952. It was "dedicated to the young in spirit who will be tomorrow's men . . . to men willing to accept something new and revolutionary." Johnson insisted that "'Huff and puff methods of body building are as out-dated as the Roman chariot. They are based on the theory that straining and forcing the muscles will cause them to grow. I'm firmly convinced that 'The Johnson System' is the method which will bring body building out of the 'Dark Ages.'"<sup>34</sup> There was much to disturb the iron game powers-that-be in Johnson's new publication. Not only was his philosophy of diet over exercise at variance with existing beliefs, but his innovative and aggressive sales techniques threatened the barbell and food supplement profits of other commercial interests. In just a year of publication, Johnson boasted that his tiny pocket-sized publication had "grown by such leaps and bounds that it is now the biggest selling physical culture magazine on the market today!"<sup>35</sup> But it also had a different look from the others. Unlike *Strength & Health* or *Iron Man*, Johnson's magazines had a much greater proportion of pictures and comparatively little narrative. Invariably they featured handsome (even comely) young men wearing brief costumes (often G-strings) or even nudes, a practice no so longer prevalent in mainstream muscle magazines in the conservative 1950s. There were also artists' renditions of nude young men, as in "Navajo" and "Thor," frolicking in a wilderness setting.<sup>36</sup> Admittedly the revealing depiction of lithe and supple physiques coincided with Johnson's philosophy of light exercise, but there was something else that was different about the look of his magazine. There was a lot of male skin, revealing another side of Johnson's persona that insiders knew about but did not discuss openly in those days. *Tomorrow's Man*, for all of its explicit emphasis on diet and health, also exuded a "come hither" cachet, and most of the record sales it enjoyed doubtless did not come from young women wanting to look at pictures of nearly naked young men.

The homophobia of Peary Rader is well known, and it coincided with his deeply Christian beliefs and values. It was probably the aspect of physical culture that he hated and feared most. Shortly after the appearance of Johnson's magazine, Rader penned an editorial on character issues that affected his conscience. Although the "strutting egotism" of many bodybuilders was his foremost concern, he was also appalled by "the growing tendency towards sexual abnormalities throughout society." Letters from readers informed him of "physique shows organized by 'off color' promoters in which unsuspecting young bodybuilders have been encouraged to participate. Legitimate promoters of high ideals have found it difficult to police their shows and contests and rid them of immoral contacts between young fellows and the social lice who attempt to contaminate anyone or anything good." No mention was made of Johnson, but Rader pointed out that *Iron Man* no longer carried any physique photo ads of the kind that might be employed by "unscrupulous photographers" for illicit and immoral purposes.<sup>37</sup> This kind of appeal, of course, was standard fare in *Tomorrow's Man*. At the very least, Rader's position indicates that there was a clear-cut cultural cleavage between the two promoters. An outright break occurred after Johnson, in the January 1954 issue of his magazine, used an endorsement from Rader for his diet program in an article that also emphasized his ideas against heavy exercise and the "monstrous" physiques resulting from it.<sup>38</sup> Rader's words in *Tomorrow's Man* provoked a letter from Ray Van Cleef, a feature contributor for *Strength & Health*, claiming that Rader was being "used" by an unscrupulous professional whose "ambitions are not in harmony with the good of the game." Although Rader justified at length his previous associations with Johnson and tried to separate his support of his nutritional innovations from his anti-exercise beliefs, he completely divorced himself from Johnson. "We have nothing to do with Johnson's business or his magazine," he avowed. "There are, perhaps things that we do not approve about his magazine and we might perhaps operate a business in a different manner, however we do not presume to tell him how to operate either of his businesses. . . . We would prefer that critics write direct to Mr. Johnson and he can defend himself as he sees fit."<sup>39</sup> Rader was, in effect, washing his hands of Johnson, and it is not surprising that within six months Johnson's ads, and any mention of his miraculous sys-

tem, totally disappeared from *Iron Man*.

While Rader was disassociating himself from Johnson, Hoffman was perfecting his own Hi-Proteen product and pitch. In the spring of 1953, nearly a year after Johnson developed them, Hoffman introduced his own Hi-Proteen tablets, "the answer to a bodybuilder's dream." They were formulated by a Philadelphia chemist named Winston Day whose firm, the High Chemical Company, would eventually supply Hoffman with all of his dietary products. "This is no lie," Day swears. "One day in the early fifties Bob came into my office with a bag of soy flour under one arm and a bag of milk powder under the other and said, 'Can you make me some tablets?' He ended up making a fortune off of the stuff."<sup>40</sup> Hoffman, in typical fashion, not only declared his tablets an instant success but was staking a claim on the entire protein supplement enterprise. "We were the first to offer for sale a high protein food which was advertised and sold nationally," he claimed. "Now everybody is doing it. . . . From the inception of *Strength & Health* magazine, over 20 years ago, we recommended a high protein diet, and when the book *Better Nutrition* was first written in 1939 . . . much of the book was devoted to a high protein diet."<sup>41</sup> None of these statements, however, were true. In 1953 Hoffman completely revised his *Better Nutrition for the Strength and Health Seeker* and republished it as *The High Protein Way to Better Nutrition*, deleting those portions that recommended only a limited protein intake and adding large sections (five entire chapters) to the importance of a high protein diet.

Truly protein has been the Cinderella of food. Hidden behind other glamorous members of the food family, minerals and vitamins, for a time it was partially obscured, but now it is recognized that protein is the most necessary food element. Too much protein will not be harmful, is easily utilized by the body, but too little protein can have tragic consequences. The way to superior health, greater strength, and a fuller, happier life is to consume a high protein diet.

What's more, in a flagrant sales pitch, Hoffman refers to Hi-Proteen as "the most nearly perfect food in the world today" which, when combined "with the other good natural foods, milk, eggs, honey, and at times various fruit juices, you have a very complete diet."<sup>42</sup> Of course he gave no indication that his newfound wisdom (and attendant fortune) owed much to the didacticisms of any earlier pioneers of protein.

Finally, in addition to appropriating Johnson's ideas on the importance of food supplements, Hoffman hired Johnson's leading pupil, Jim Park, to come to York to make gym equipment at his company's foundry in Marietta and to showcase York products. In a full page in the May 1953 issue of *Strength & Health*, Hoffman introduced a line of bodybuilding tablets—rice germ oil concentrate, soy germ oil concentrate, protamin, dietary, and raw whole liver—under the heading of Better Nutrition Aids. In a center photograph, standing fully flexed and surrounded by trophies, is Hoffman's newest addition to the York gang with an engaging caption: "Jim Park, the 1952 Mr. America and 1953 Mr. World, used hundreds of the tablets advertised on this page\* daily while training intensively for the national and international contests in which he emerged victorious." The asterisk refers to a tiny footnote, no doubt overlooked by most readers, indicating that the supplements used by Park were actually "made in the same laboratory with a different trade name."<sup>43</sup> Lest this attribution be confused with an act of conscience, it was more likely motivated by a desire to maintain credibility with those who might have seen Park making the same testimonial in Johnson's ads only a few months earlier. More importantly it suggests that both Johnson and Hoffman obtained their dietary supplements from the same source, not from a "world-famous food research laboratory," but from a modest chemical plant in a dilapidated neighborhood of north Philadelphia. This connection is corroborated by Jim Murray, who indicates that Park, as one would suspect, shared much of what he knew about Johnson's operations with his new employer.<sup>44</sup>

Oddly the Weider organization, innovative in so many other ways in the iron game, was a latecomer to food supplements. To the extent that its magazines featured any coverage of nutrition, it took the form of articles by Dr. Frederick Tilney, a self-taught physical culturist from England who had worked for Bernarr Mac-

fadden and Charles Atlas in the 1920s and for Hoffman in the 1930s. His advice to the readers of *Muscle Power* was not unlike that conveyed by Rader in *Iron Man* and Hoffman in *Strength & Health*—that there was "nothing complicated" about a sound diet for muscle builders. "Eat rationally and vary your food, make it simple," he advised. Above all, avoid "going to stupid extremes of a fad diet."<sup>45</sup> Nor was Tilney convinced of any special need for protein. "The old method of relying on getting so much protein, so much carbohydrates, or calories has long been known to be ineffective," he wrote in January 1952, fully six months after Irvin Johnson introduced his Hi-Protein "Miracle Food" to *Iron Man* readers. In fact, Tilney was still warning *Muscle Power* readers that "an excess of protein can prove injurious to the kidneys."<sup>46</sup> It was not until the June 1952 issue of *Your Physique* that Joe Weider, as "Trainer of Champions," introduced his new "Hi-Protein Muscle Building Supplement," nearly six months after Hoffman's copy-cat protein ads appeared in *Strength & Health*. "To develop hard muscles EXTRA FAST, you must eat an abundance of high protein food every day. Only PROTEIN builds strong, healthy, TOUGH tissue, because it nourishes and energizes the muscle cells of the body." Contrary to other such products on the market, Weider claimed his protein supplement was superior because it contained no "carbohydrates, fat and sugar, which induce the formation of FLABBY TISSUE."<sup>47</sup> Soon Weider expanded his offerings to other lines pioneered by Johnson and his other competitors, including vitamin-mineral, weight-reduction, and weight-gain supplements.

What Weider's products lacked in originality and tradition was made up for with claims of scientific credibility and sincerity. His Hi-Protein ads were often accompanied by a picture of a physician, an official-looking certificate and seal, and an assurance that the supplement was "recommended by medical doctors" and "based on medically approved formulae, containing only the purest ingredients and meet the most rigid medical requirements."<sup>48</sup> Further to disguise the commercial motivation behind these pious pronouncements, Advertising copy vowed to educate readers on the proper use of their high protein food supplements. "When the Weider Company makes a sale, it does not end its interest in you with that sale. It is anxious to see that you succeed in your ambitions, that you make the bodybuilding

grade. For this reason did we establish the Weider Research Clinic. For this reason do we offer a free *life time* advisory service to each and every one of our customers."<sup>49</sup>

In 1959 Jim Murray sought to persuade an unresponsive Peary Rader to publish an article he intended to write questioning the value of food supplements.

I realize that you have become involved in this and do not question that your motives are well-meant. Nevertheless, I have come across nutrition articles by qualified experts which indicate indiscriminate 'self-medication' may actually be harmful in some instances. One of the reasons I left York, of course, was that my own observations showed me the Hoffman 'proteins' were useless for any special benefits. In view of this, I felt charging exorbitant prices for low cost materials of doubtful benefit was clearly victimizing the public. I could see clearly that the one and only motive for the sale of the stuff, in Hoffman's case, was to make a lot of money, quickly. He saw Irvin Johnson raking it in and just couldn't bear to think of anyone *else* profiteering in physical culture. Weider at first published articles spotlighting the obvious weaknesses in the Hoffman-Johnson pitch and then succumbed himself to the lure of easy money. Now I believe a man should be rewarded for his efforts, especially if they are socially useful, and I know you sincerely believe in the value of supplements sold through *Iron Man*. I feel that this is primarily due, however, to having seen only one side of the coin. I've seen the other side.<sup>50</sup>

There is no indication that Rader, despite his reputation for honesty and openness, ever allowed Murray to air his views. Such revelations might have been too controversial and damaging to too many high-profile promoters in the iron game, including himself.

Nevertheless, some diet doctors outside the sport have long since queried the efficacy of high protein consumption. An MSNBC website article entitled "Experts ping-pong on protein advice" traces the debate from the 1960s when "Americans were told they would be healthy if they ate lots of meat." Then high-carbohydrate diets came into vogue with warnings "against eat-

ing too much protein." After much flip-flopping by experts over the next two decades the American Heart Association published several statements in 2000 against high-protein meals, even suggesting that "they might even hurt the dieter's kidneys and rob strength from bones," but later backed away from these views. In October 2002, at the annual meeting of the American Dietetic Association, "nutritionists basically admitted that they really don't know how much protein Americans need."<sup>51</sup> Similar uncertainties persist about the benefits and risks of dietary supplements, of which protein is now one of many ingredients. A 2000 round table discussion among nutrition and exercise scientists concluded that some such products "are associated with serious and sometimes deadly-adverse side effects. . . . Even supplements like vitamins, caffeine, creatine, and protein powders that are safe when taken in recommended doses could be harmful if taken in large doses for a long time." As a further caveat to well-trained athletes, such as bodybuilders, one of the experts suggested that daily protein intakes of only 2.8 grams per kilogram of bodyweight "will not harm the function of their kidneys, although higher protein intakes may."<sup>52</sup>

Within the iron game Jeff Everson, editor of *Planet Muscle* and never a protein vendor [*Editors' note: Everson and his former wife, Cory Everson, did appear in many supplement ads in Weider publications.*] shares many of these uncertainties, asserting that "hard-training bodybuilders can get all their protein from their meals." Most of them consume supplements only because high protein foods—eggs, red meat, milk, chicken, etc.—"contain too many cumulative calories or fats." It was Everson's view, based on 35 years experience, that "95% of the so-called research and 'clinical proof on products within our industry must be dismissed. We are an unregulated industry, largely practicing shoddy, statistically poor science." What currently exists is "a bunch of companies selectively citing research studies that serve their interests best, as they relate to their protein powder constituencies." He beseeched advertisers to, at least, spare bodybuilders "the marketing hype, scare tactics and garbage. Advertise accurately, honorably and positively."<sup>53</sup> Obviously the jury is still out on protein supplementation.

What few authorities or promoters realize is that the same uncertainties that plague the protein industry

today have existed for over a half century. This dilemma stems largely from the confusion that has always existed between nutrition science and those who promote the use of dietary supplements. Paul Bragg could hardly have been more accurate when he advised Bob Hoffman in 1946 that the food business would yield a "tremendous income" for him. But most of the credit for the early development and promotion of protein supplements must go to Irvin Johnson who, after being marginalized by the holy trinity of the iron game—Hoffman, Rader, and Weider—changed his name to Rheo H. Blair and moved to Los Angeles. There, through the 1960s and into the 1970s, he continued to market his products, publish his magazine, and train movie stars and such bodybuilding champions as Larry Scott, Frank Zane, Don Howorth, and Gable Boudreaux. Upon Blair's death in 1983, Scott paid tribute to him as "the master chemist. He was so far ahead of everyone in his nutritional research, it didn't even sound like he was talking about the same subject." Scott also insists that, unlike most would-be pioneers of protein, "Rheo was never very money-motivated."<sup>54</sup> Yet for all of his originality and enterprise, his efforts were largely overshadowed by his competitors who also deprived him of his rightful place in history. The irony of this exclusion was illustrated in 1970 when an advertisement for Blair's protein supplement arrived at York Barbell. To a heading entitled "The Only Protein Supplement with 20 Years of Success!" was an annotation in the hand of John Terpak, Hoffman's general manager and successor, which read: "Who says so—I never heard of it until several years ago."<sup>55</sup> [*Editors' note: Clearly, John Terpak knew very well who Irvin Johnson-Rheo Blair was and how the York Barbell Company had copied not only Blair's protein supplement but had even copied the name of the supplement and then denied Blair any further ad space in Strength & Health.*] Little did Terpak realize, in this mocking response to a piece of junk mail, how much his company's fortune and well-being owed to Blair's ingenuity. Although Bob Hoffman displayed an early awareness of the importance of nutrition for weightlifters and bodybuilders, it was Blair (as Irvin Johnson) who revolutionized the sport by shifting attention from an external focus on exercise to an internal emphasis on diet. This internalization of training eventually provided an important basis for the acceptance of anabolic steroids

and for the development of countless other substances that, when consumed in sufficient quantities, claim to improve the body's synthesis of protein.

#### Notes:

1. Ron Harris, "Star Profile—Frank Zane," *Muscle Mag International*, 247 (January 2003): 258.
2. Frank Murray, *More Than One Slingshot, How the Health Food Industry is Changing America* (Richmond, 1984), 6-55.
3. For an interesting sketch on the energy and vision of Bragg, even in his seventies, see an article entitled "Visitor Here Is Ready for Space Man Role" in the *Pittsburgh Post-Gazette*, 16 November 1957.
4. Bragg to Hoffman, 4 June 1946, Hoffman Papers, John Fair Collection.
5. Hoffman to Bragg, 28 June 1946, Hoffman Papers, John Fair Collection.
6. Bob Hoffman, *How to Be Strong, Healthy and Happy* (York: 1938), 27.
7. Bob Hoffman, *Better Nutrition for the Strength and Health Seeker* (York: 1940), 193-95.
8. For sales figures on Hoffman's ten books see "Cash Book," 1938-1942, Hoffman Papers.
9. Peary Rader, "Diet for the Strongman," *Iron Man* 8(1) (1948): 11-12.
10. "Vitamins and Minerals," *Iron Man* 8 (November, 1948): 33, and "Build Strength - Energy - Health!" and "'44' The Supplemental Beverage," *Iron Man* 10 (May, 1950): 43 and 41.
11. Irvin Johnson, "Build Bigger Biceps Faster with Food Supplements," *Iron Man* 10 (December, 1950): 28 & 56-57; and "Bulging Muscles and 'B' Complex," *Iron Man* 11 (February 1951): 31-32 & 43.
12. "The Irvin Johnson Story," *Iron Man*, 11 (July 1951): 12-13, and Irvin Johnson, "Bill McDonough, Mr. Chicago 1951," *Iron Man* 11 (July 1951): 6-7.
13. Irvin Johnson, "The Miracle Food," *Iron Man* 11 (July 1951): 18-19 & 53.
14. Peary Rader, "Body Culture Progress," *Iron Man* 11 (July 1951): 5 & 45.
15. "We produce The Greatest Before and after Cases in the World" and "This Could Be You," *Iron Man* 11 (December 1951): 3-5.
16. "Fantastic? No, It Really Happened!!" *Iron Man* (September, 1951): 22.
17. Peary Rader, "We Visit Johnson's Studio," *Iron Man* (December, 1951): 28-29 & 55.
18. "Johnson's Hi-Protein Food," *Strength & Health* 19 (April 1951): 18, and Norbert Grueber, "Cover Man—James Park," *Strength & Health* (April 1951): 33, 39 & 41.
19. Bob Hoffman, "The Most Important Essentials of Health," *Strength & Health* 19 (April 1951): 5; Nat Bernard, "Food Supplements—The Barbells of Good Nutrition," *Strength & Health* 19 (April, 1951): 26-27; and "Balance Your Body-Building Program," *Strength & Health*, 19 (April, 1951): 47.
20. "Bob Hoffman's High-Protein Food," *Strength & Health* 20 (February, 1952): 34.
21. Bob Hoffman, "Why You Need Plenty of Protein!" *Strength & Health* (March, 1952): 37-38. Hoffman later elaborated on this story by tracing his association with protein to 1914 when he started eating at Chinese restaurants and learned about the nutritional value of soybeans. Although Hoffman says he was introduced to a product similar to Hi-Proteen by a professional strength performer named Eddie Polo, it did not have a palatable taste and Hoffman started searching for the right product. No mention of Polo, however, appears in any 1938 issue of *Strength & Health*. Bob Hoffman, "Everybody's Doin' It," *Strength & Health* (September, 1952): 30.
22. Interview with Jim Murray, Morrisville, Pennsylvania, August 23, 1987. Also see John D. Fair, *MuscleTown USA, Bob Hoffman and the Manly Culture of York Barbell* (University Park, 1999), 148.
23. "Bob Hoffman's Hi-Proteen Food," *Strength & Health*, 20 (May, 1952): 34.
24. Bob Hoffman, "What Nutrition Means to Health and Muscle Building," *Strength & Health* (June 1952): 10.
25. Bob Hoffman, "Adventures in Eating," *Strength & Health* (October 1952): 15.
26. Irvin Johnson, "How James Parks [sic] Won the Mr. Chicago Title," *Iron Man* 12 (June 1952): 14-15 & 44-45.
27. "Readers' Round-Up," *Iron Man* (October 1952): 34-35.
28. David Martin, "Meat, Minerals and Muscles," *Iron Man* (February 1953): 25.
29. Irvin Johnson, "Johnson Replies," *Iron Man* (February 1953): 27 & 48.
30. "Available At Last!" *Iron Man* (August 1952): 54-55.
31. "Tomorrow's Man," *Iron Man* (October 1952): 37.
32. "Dick Fouts," *Iron Man* (July 1953): 40; "Bill Brewster," *Iron Man* (September 1953): 40; "High School Student," *Iron Man* (November 1953): 40; and "Bob Power," *Iron Man* (January, 1954): 40.
33. Peary Rader, "Editorial," *Iron Man* (December 1953): 5 & 44.
34. "Tomorrow is Yours" and "A NEW Approach to Body Building," *Tomorrow's Man*, I (December 1952): 3 & 17.
35. "First Year; First Place," *Tomorrow's Man*, II (December, 1953): 3.
36. "Navajo," *Tomorrow's Man* 2 (December, 1953): 40; and "Thor," *Tomorrow's Man* II (January, 1954): 50-51. Also see "Fish Fry Tonight," *Tomorrow's Man* (February, 1954): 18-22.
37. Peary Rader, "Editorial," *Iron Man* 12 (March, 1953): 5 & 42.
38. An Open Letter to Bodybuilders," *Tomorrow's Man* II (January, 1954): 18-24 and 36.
39. Peary Rader, "Our Policy and Our Beliefs," *Iron Man* 13 (March, 1954): 32-33, 39 & 63. See also Ray Van Cleef, "How Important Is Heavy Exercise?" in *Strength & Health*, 22 (March 1954): 22-23 & 46.
40. Interview with Winston Day, Philadelphia, Pennsylvania, 4 June 1992.
41. Bob Hoffman, "Human Food Requirements," *Strength & Health* 21 (September, 1953), 28.
42. Bob Hoffman, *The High Protein Way to Better Nutrition* (York: 1953), 87 & 113.
43. "B.N.A. Body Building Tablets," *Strength & Health* 21 (May, 1953): 38.
44. Interview with Murray.
45. Dr. Frederick Tilney, "Meals for Muscle Power and Weight Gaining," *Muscle Power* 11 (December, 1950): 31.
46. Dr. Frederick Tilney, "You Need Natural All-Around Health Building Foods," *Muscle Power* 13 (January 1952), 45. Also see his "Are Steaks Necessary for Big Muscles?" *Muscle Power* 14 (July, 1952): 14-15.
47. "Weider Hi-Protein Muscle Building Supplement," *Your Physique* 17 (June 1952): 47-48.
48. "To Develop Bigger Harder Muscles . . . Faster!" *Muscle Power* 15 (January 1953): 12.
49. Ben Weider, "You Need Protein!" *Muscle Builder* 3 (November, 1954): 38.
50. Murray to Rader, 17 September 1959, Rader Papers, Todd-McLean Physical Culture Collection, The University of Texas at Austin.
51. Linda Carroll, "Experts ping-pong on protein advice," MSNBC News, Health, Diet/Nutrition, <http://www.msnbc.com/news/824375.asp/cp1=1>.
52. Priscilla Clarkson, Ellen Coleman, and Christine Rosenbloom, "Risky Dietary Supplements, A Round Table Discussion," *Denis Reno's Weightlifter's Newsletter*, 273 (October 22, 2002): 35 & 38.
53. "Protein Toxicity? Great Proteins?" *Planet Muscle* 5(2) (2000): 21; "Total Protein confusion," *Planet Muscle* 3(3) (2000); and "Has Baloney Become Good Protein," *Planet Muscle* 3(3) (2000): 172.
54. "In Memorium of Rheo H. Blair," *Iron Man*, 43 (May, 1984): 57.
55. "The Only Protein Supplement with 20 Years of Success!" Hoffman Papers.