

THE SUPERIOR PHYSIQUE

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IT IS JUST, A GOOD RULE, THAT EVERY MAN SHOULD MEASURE HIMSELF BY HIS OWN
MODEL AND STANDARD.—HORACE

The fascinating problem of what the superior human figure should be is one which has held the interest of humankind from the very beginning of civilization. The early civilizations (Egypt, Greece, Rome) admired athletes with well-developed physiques. The statues from these early civilizations clearly document that this love for “A sound mind in a sound body” dates to antiquity. And, the immense popularity of weightlifting magazines suggests that the modern public continues to be mesmerized today by those physiques that present the best mix of proportion, symmetry, and muscularity.¹

A great deal of research has been published regarding the physical-mental-spiritual characteristics of the “Homo Sapiens” species. This article, however, examines the concept of the superior male physique. Weightlifting historian and amateur physical anthropologist David Willoughby “spent a large part of his life trying to honestly assess the physical power and muscular development of strength athletes of both the past and the present and to produce a trustworthy formula which allowed him to compare men of different periods, bodyweights and lifting styles.”² This article examines Willoughby’s theories on assessing the superior male physique by comparing physiques of the pre-steroid era.³ As Willoughby himself put it, “I have no way to evaluate the modern competitors” in the post-steroid era.⁴

The Superior Male Physique

Anthropologist William Sheldon’s historic study of physical diversity argued that there are three general body types: ectomorphic, mesomorphic, and endomorphic.⁵ Willoughby took Sheldon’s idea a step further and developed a standard that could be used to determine physical perfection for the different body types: slender, medium, and stocky.⁶ His standard was based on this premise: “The *shape* and the *appearance* of the various parts of the body are of equal importance to their size.”⁷ Physique men from the early part of the twentieth century generally agreed with Willoughby’s dicta. Earle Liederman, for instance wrote “It’s a shame to spoil a physique by going all out for size.”⁸ Lifting expert George Jowett contributed “We masters of sculptural art classified the perfection of masculine manhood into three general classifications: the Apollo Belvedere, the Theseus Olympus, and the Farnese Hercules.”⁹

The world’s leading authority on anthropometric statistics, Willoughby was a lifelong student of the “architecture” of the human body.¹⁰ He wrote in 1933, “The precise amount that each muscular part of the body should measure in relation to the other parts and to the general size of the bony framework, [can only be] ascertained after long research and countless measurements. [My] standard is correctly applicable to *any* man, whatever his height, weight and build. It assigns to him a definite goal in harmony with his own structural or physiologic make-up—a goal that *he* can reach.”¹¹

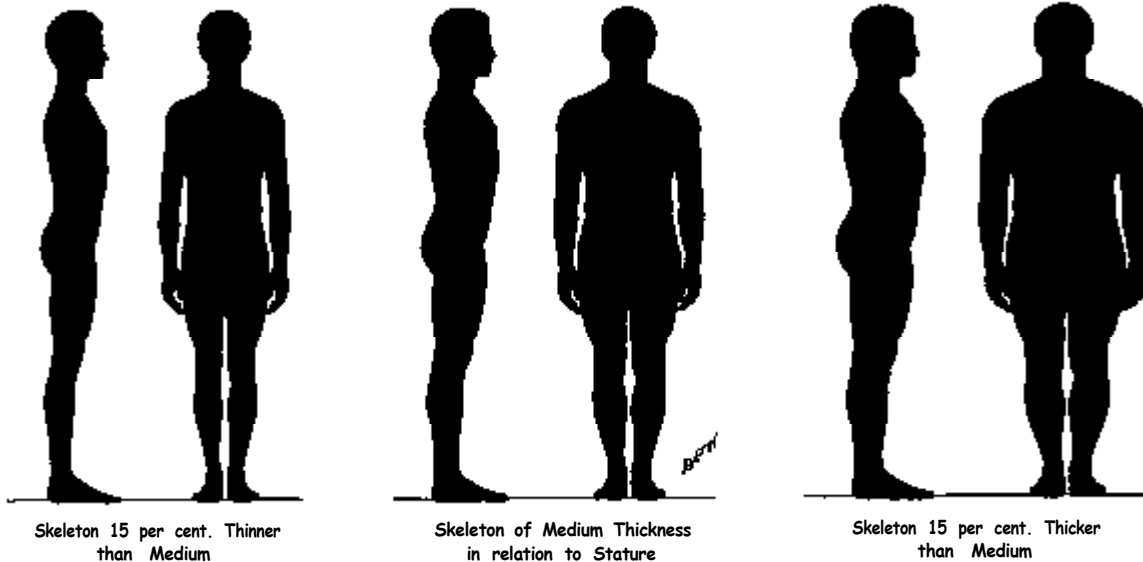
Willoughby believed that his standards represented “a theoretically perfect ideal of symmetry, which it is not to be expected [a] human being could attain in all details.”¹² He tested this standard mathematically to determine the “optimal” and “maximum” mus-

cular measurements of the male physique.¹³ His standard ratios are presented in Table I.¹⁴

David Willoughby used his standards to calculate certain “vital statistics” for the “Mr. America” winners for the period 1939-1951.¹⁵ This article uses a computer system to compare the muscular measurements of the “Mr. America” winners during the entire pre-steroid era (1939-1959) with the standard for physical perfection developed by David Willoughby.¹⁶ These calculations produced a model of the superior physique for each of the three general body types, Apollo, Olympus, Hercules.

TABLE I
PERFECT MALE SYMMETRY

Forearm should be .833 times biceps
Forearms (average of both) should be .300 times chest
Biceps should be 1.200 times forearm
Biceps (average of both) should be .360 times chest
Biceps (average of both) should equal calf
Straight upper arm should be .962 times Biceps, minus .81
Neck should be .383 times chest
Chest should be 1.333 times waist
Chest should be 1.111 times hips
Waist should be .750 times chest
Waist should be .833 times hips
Hips should be .900 times chest
Hips should be 1.200 times waist
Hips should be 1.667 time thigh
Thigh should be .600 times hips
Thigh should be 1.500 times calf
Calf should be .667 times thigh
Calf (average of both) should equal biceps



The Apollo Physique

The Apollo physique is characterized by a slender bone and muscle structure. At the time he won the “Mr. America-1943” contest, Jules Bacon has the best mix of proportions-symmetry-muscularity in this class. His muscular measurements at that time were as follows: Height 67”, Weight 178 lbs., Neck 16.50”, Chest 46.10”, Biceps 16.60”, Forearm 12.70”, Wrist 7.00”, Waist 29.90”, Thigh 25.00”, Calf 15.70”, Ankle 8.60.”¹⁷

The Olympus Physique

The Olympus physique is characterized by a medium bone and muscle structure. At the time he won the “Mr. America-1947” contest, Steve Reeves has the best mix of proportions-symmetry-muscularity in this class. His muscular measurements at that time were as follows: Height 73”, Weight 213 lbs., Neck 17.50”. Chest 49.50”, Biceps 18.00”, Forearm 14.50”, Wrist 7.50”, Waist 29.00”, Thigh 25.50”, Calf 17.75”, Ankle 9.30.”¹⁸

The Hercules Physique

The Hercules physique is characterized by a large bone and muscle structure. At the time he won the “Mr. America-1940/41” contests, John Grimek had the best mix of proportions-symmetry-muscularity in this class. His muscular measurements at that time were as follows: Height 68.5”, Weight 195 lbs., Neck 18.00”, Chest 49.70”, Biceps 18.70”, Forearm 14.50”, Wrist 7.70”, Waist 31.00”, Thigh 27.00”, Calf 17.70”, Ankle 10.00.”¹⁹

Conclusion

All bodybuilders can be winners. While most people will never win a major physique contest, everyone can improve their health, strength and muscular development through progressive weight training. Few men have the genetic potential for the muscular development required to be a champion like Jules Bacon, Steve Reeves or John Grimek, but everyone can strive to achieve their genetic potential whether it is to become an Apollo, an Olympus or a Hercules.

Notes

*I am grateful to Jan and Terry Todd for allowing me to use the Todd-McLean Collection and for their research assistance during the preparation of this article. Primary reference: David P. Willoughby and George R. Weaver, *The Complete Guide To Muscular Measurements* (Montreal: Weider Publications Company, 1947), 39.

¹George Gallup, “Shape Is In, Mass Is Out,” *American Health* (July-August 1988).

²Terry Todd, “Steroids: An Historical Perspective,” *Iron Game History* (April 1990).

³This list includes other published and unpublished manuscripts that the author included in his research Program but did not quote in this article: John C. Grimek, “What are Your Ideal Measurements?,” *Muscular Development* (January 1964); Grover L. Porter, “The Future of Bodybuilding,” *Muscular Development* (August 1993); Grover L. Porter, “Have it All,” *Iron Man* (August 1991); Grover L. Porter, “Bodybuilding: Quo Vadis?,” *Muscle & Fitness* (January 1990); Grover L. Porter, “The Ideal Physique,” *Iron Man* (May 1989); Grover L. Porter, “In Search of the Perfect Man,” *Muscular Development* (June 1983); David P. Willoughby, “What the Champions Measured,” *Muscle Builder* (January 1954); David P. Willoughby, “What is the Ideal Physique?,” *Your Physique* (August, September, October, November, December 1950, March 1951); David P. Willoughby, “How to Measure Your Body,” *Your Physique* (July 1948); David P. Willoughby, “What is the Ideal Physique?,” (Austin: The Todd-McLean Collection, Unpublished manuscript that may have been intended as a continuation of the series published in *Your Physique* in 1950-51); David P. Willoughby, “Building A Perfect Body—Your Possibilities,” (Austin The Todd-McLean Collection, Unpublished manuscript).

⁴Todd, “Steroids.”

⁵William H. Sheldon, *The Varieties of Human Physique* (Darian, CT: Hafner Publishing Company, 1940/1970).

⁶David P. Willoughby, “What Is The Perfect Physique?,” *Physical Culture* (September 1929).

⁷David P. Willoughby, *What Is Physical Perfection?* (Austin: The Todd-McLean Collection, Unpublished brochure promoting the Willoughby Method of Physical Training, 1933).

⁸Earle E. Liederman, “Muscle Shape vs. Muscle Size,” *Muscle Power* (December 1949).

⁹George F. Jowett, “Sculpture Form,” *Your Physique* (February 1950).

¹⁰David P. Willoughby, “The Human Figure: Ideal and Real,” *The Illustrator* (Winter 1962).

¹¹Willoughby, “Physical Perfection.”

¹²David P. Willoughby and George R. Weaver, *The Complete Guide To Muscular Measurements* (Montreal: Weider Publications Company, 1947).

¹³Ibid.

¹⁴Ibid.

¹⁵David P. Willoughby, “The Mr. America Physique,” *Your Physique* (June 1952).

¹⁶The muscular measurements used in my comparisons were published in Philip I. Rasch, *Weight Training* (Dubuque, Iowa: William C. Brown Company, 1982).

¹⁷Ibid.

¹⁸Ibid.

¹⁹Ibid.

HIPPOLYTE TRIAT

From: Edmond Desbonnet's

Les Rois de la Force

[*The Kings of Strength*]

Paris: Librairie Berger-Levrault, 1911

Translated by David Chapman

Ed. Note: David Chapman, the Seattle-based strength historian who recently authored *Sandow the Magnificent*, has been working for the past year on a translation of Edmond Desbonnet's *Les Rois de la Force* [*The Kings of Strength*]. This rare book has never before been translated into English. In it, Desbonnet not only compiled biographies of all the major male and female strength athletes of the nineteenth and early twentieth centuries, he also reprinted many materials related to these professionals' lives and work. In Desbonnet's chapter on French weightlifting pioneer Hippolyte Triat, three brochures related to Triat's gymnasiums are included. Due to space limitations, we can only reprint parts of these brochures here. However, Desbonnet's commentary and his closing remarks about Triat's physical abilities are, we believe, fascinating. For Part One of Triat, see *Iron Game History*, Volume 4, Number 1.



By way of documentation and in order to prove that Triat had very correct ideas on physical culture (still unknown to the public in 1855), we reproduce the following brochures that he produced in order to advertise his gymnasium and to spread his philanthropic ideas.

The first three pages are dedicated to his gymnasium at 55 and 57 Avenue Montaigne. Next is a reproduction of the 100 franc certificate issued by Triat in 1855 just after he had moved his gymnasium to 36 Avenue Montaigne. This establishment was founded and operated by the Gymnasium Society of France in order to propagate the gospel of health. The other two pages concern Triat's gymnasium at 22 Rue du Bouloi.

In order that there be no doubt about the authenticity of these documents, they have been reproduced photographically, and not a single word has been changed. These originals were lent to us by Mr. Christmann who was both a student and a friend of Triat. We are happy to testify here to our gratitude for his having put these documents at our disposal. Mr. Christmann, in fact, realized that it was up to us to honor the memory of the man for whom he has retained a profound admiration.

By reading these several excerpts, one can see how regrettable it was for the French people that Triat's method was not adopted by the French government.

THE TRIAT GYMNASIUM EDUCATION-HYGIENE-REGENERATION

It is impossible to plumb the mysteries of organic life without arriving at the conclusion that movement is its primordial and most essential law.

According to first principles, everything in nature is in a state of flux. Nothing—save God alone is stable in the universe. Immobility, we assume, is tantamount to absolute nothingness.

The material life of both humans and animals manifests and fulfills itself by one of several ways. Either by the molecular movement of composition or decomposition common to all organisms: by

the movements unique to each individual organ and its functions; by the sympathetic movements which the organs perform in concert with one or another; or finally, by the organic movements performed in synchrony with the entire body.

Not a single physiological function can operate without movement. Neither aspiration, respiration, absorption, digestion, circulation, transpiration, secretion, locomotion, nor calorification can be understood without knowledge of the displacements of matter which affect them through the medium of the specialized organs, the systems themselves, or by the complete action of the entire organism.

If one considers that no single movement of a system's part can take place without a proportional reaction on the whole, then one is forced to conclude that exercise or voluntary movement applied to the body must modify the functions and by consequence, life itself.

However, human life is twofold. It is both corporal and spiritual, physical and moral. Although the two natures which form this duality are profoundly distinct in their attributes, yet they are linked so intimately that the action of one reacts on the other. While admitting freely that the spirit is the guiding principle of the body, it is impossible to negate the reciprocal and permanent influence of the body on the spirit. It therefore follows that bodily exercise is of immediate importance to the whole man—body and soul, flesh and spirit.

Building upon this, it is easy to understand that rationally applied exercise constitutes the gymnastic art. If it is seriously developed, this art can form an important part of man's physical, intellectual, and moral education. It can preserve health, cure a great number of maladies, and lead to the physical perfection of the individual and the species.

This, then, is the sophisticated point of view from which gymnastics can be viewed in the nineteenth century. Briefly and in just a few words, this is the theoretical basis upon which we have based our studies of this art and which we have long practiced by instinct. Now we have carried gymnastics to a hitherto unknown degree of perfection by a life of meditation and experience.

The institution of gymnasia as we know them from antiquity were part of a society that worshiped strength since it was needed for conquest or defense, and it is known that ancient lawmakers supported the gymnasium most particularly as a place that could turn out soldiers and athletes rather than as a means of producing healthy, strong, and intelligent human beings. Military and Olympic gymnastics occupied such a place of honor simply because they allowed for victories and triumphs to accrue to the state. This system deteriorated when it began turning out little more than dull-witted titans or gladiators fit only for the blood soaked arena of the circus.

It is true that at the same time curative gymnastics were highly recognized by the greatest geniuses in the curative arts—men like Herodicus, Hippocrates, Galen, Celsius, Oribasius, Diocles, and Asclepiades. But since they were not able to find a way to apply the system easily, it remained in its infancy, and eventually, curative gymnastics was tarred with the same brush that discredited athletic gymnastics. Thanks to extreme abuses in its application, this latter

came to be seen as an impediment to intellectual development and the cultivation of proper morality. Clearly, this disastrous outcome proved only that gymnastics was as dangerous when poorly used as it was effective and beneficial when handled in a contrary manner. Nonetheless, it created a reaction against the art that was too powerful and too vigorous to resist.

Between the extinction of gymnastics at the end of the ancient world and its rebirth in the eighteenth century, the sport was removed from civilization for sixty successive generations. During this long interval, physical exercise did not appear outside of everyday life. The only exceptions were some vestiges of ancient Roman sports that survived in the form of the jousts, tournaments, cavalades, and tilting matches of the Middle Ages, but even these disappeared when firearms were substituted for chivalric weaponry.

It was only toward the end of the last century that the educational theories of Jean Jacques Rousseau encouraged writers in both France and Germany to praise gymnastics. The names of Guthsmuths, Basedow, Salzmann, Campe, Jahn, Pestalozzi, and Ling recall the first impulses shortly after being revived beyond the Rhine and in Switzerland. The names of the Frenchmen Clais and Amoros can be added to this list since they also made admirable efforts for the introduction of gymnastics in regular instruction.

We have visited the principal countries of Europe and carefully examined the methods which are used there, and we have also considered long and hard the effects which have been produced both by ourselves and our students. We have come to the conclusion that gymnastics as they have been taught for the last two decades or even as they are still taught are singularly defective, irrational, unoriginal, and incapable of furnishing the results which one might hope for.

The need to devise a complete system of exercise has led us to study the diverse types of bodily and organic movements, and we have established on this basis a new art. We have thus arrived at an entirely new method of gymnastics that is rational, complete, and utterly distinct from all those which have been published until now. We have been aided in this by numerous instruments and machines which are indispensable in performing the specific, partial or grouped movements. The greater part of our mechanisms and apparatuses did not even exist, so it was necessary to devise and construct them ourselves.

Dumbbells, Indian clubs, and barbells which we have invented are already distributed everywhere, and medical experts particularly recommend them. But even this is nothing in comparison with our entire system of specialized machines for our *curative gymnastics*. Even then, these devices themselves are nothing without the knowledge to use them. A tool is one thing, but using it without proper understanding is quite another. We might also hope that others would not be content with merely copying our devices. Finally, after numberless experiments with different human races and more than fifteen years in public practice in Paris, our results have been immense. We have the right to say that as a result of our efforts we have attained a triple goal; we can boast of the practical application of gymnastics in *education, hygiene, and the regeneration of Man*.

Our gymnasium is an instrument of education. Its goal is not to produce a heavily muscled Hercules. Rather, it strives to turn out men who are harmonious in appearance, healthy of body, and strong of spirit. Our system is particularly effective and marvelous when it is applied to children or adolescents. It contributes to the correction of their organs, the improvement of form and action, and the accrual of strength. It helps create stability and mental vigor and produces in its turn beauty, grace, elegance, agility, resolution, courage, goodness, sensitivity, sweetness of character, and morality. In a word, our system contributes to the fullness of life's supreme reward: Health. The same effects will be obtained for adults (although to a lesser degree).

A learned professor of medicine, Mr. Michel Levy [1809-?], has written in his *Treatise on Hygiene* these remarkable words: "The problem with education is the imbalance between physical strength and the intellectual faculties. Education simply cannot take place without the assistance of obligatory gymnastics. They must be varied, appropriate to the child's age, interspersed by intervals of intellectual exercises, and rewarded in annual contests equal to those given for literary excellence. Since the invention of firearms we have become too unfamiliar with the powerful effects of exercise that is regular, habitual, and energetic. The most efficient means to avoid the vicious leanings which have produced such terrible ravages among the children and adolescents of both sexes include varied recreations, physical fatigue, cultivation of the intelligence, and moral and religious teachings."

What would Mr. Michel Levy say if he could see all those who have been miraculously restored by the benefits of our gymnastic system? He would be amazed at our work with the frail, debilitated, emaciated constitutions, the inept and mined brains that have been withered to the point of cretinism. Truly, ours is a system that reforms both the body and the soul.

From a hygienic or sanitary point of view, we have avoided the outset of a great many debilities by the practice of regular gymnastics that are moderate or energetic as the case warrants. Medical science considers, for example, the lack of exercise to be one of the most powerful causes of pulmonary phthisis. We have often dealt with patients who have been sent to us by their doctors in order to fight this dread disease. These subjects have visibly improved their lymphatic or scrofulous disorders after only a few months of directed exercise.

It is equally clear that a lack of exercise leads to organic inertia, circulatory sluggishness, an enlarged spleen, swelling, chronic catarrh of the bladder, stones, apoplexy, etc. These and all the other disorders that accompany the sedentary professions can be prevented by our gymnasium. If need be, our carefully applied exercises can even counteract the results of vicious habits and the specialized movements of certain professions. Thus our system can be considered as a powerful aid to public hygiene and one which can open the door of health to all classes of the population according to their needs.

The current population born in the bosom of the great cities is the inheritor of all the infirmities which previous generations experienced and of all the physical troubles caused by the unwholesome lives these generations have lived. That is, as one might say, a heavy patrimony of maladies, and these have the effect of continually worsening the health and making one ever weaker and less robust. It is a situation that threatens modern man and that threatens the disappearance of every mark of health until the latter fades away like a lamp that has run out of oil.

Today's population needs to subsist and to renew itself by the life forces that are found in such abundance in the country. The large centers of population can be named, without exaggeration, as the great destroyers of human life. But our gymnastic procedures prove that not only can this urban degeneration be stopped in its tracks, but that the sickly city dwellers can be completely regenerated by a short term of exercise. We are able to restore their muscularity, strength, and longevity. Finally, the gymnasium has the power to heal the moral infirmities that afflict the subject. While restoring the body, exercise draws out the vices which are inherent in certain pathological states. We declare in all sincerity that our system of exercise is the best remedy for madness and suicidal urges.

It is because of these potent reasons that we have sought to open up gymnastics to a new era. It has been our wish to establish a gymnasium in which the purpose and composition have been in response to the philosophy outlined above. We have made it as vast as possible, and it is with a true sentiment of humanity that we invite the public to visit it. Although we have often suggested it,

yet we regret that the government has not yet been sufficiently receptive to accept the idea of public regeneration on an even grander scale.

—**Hippolyte TRIAT, gymnasium proprietor**

We also have before us the notices that Triat had printed for his civilian and military gymnastics school in Brussels where he had a special school for ladies and girls and another for young children.

In addition we have a letter remarkable for its good sense and its clarity dated November 1845 and addressed to the honorable members of the Senate and the Chamber of Representatives. Intelligence and truth ring from every line.

In my opinion this man was the greatest benefactor of the age, and I hope that the photographs of this work will one day revive Triat's memory. When the public recognizes the wrongs that the French people have committed in abandoning this apostle of physical culture, I hope that a golden statue of him will be erected in Paris.

Another document before us is addressed to the senators of France. It is the *Memorandum in support of the petition of the students of the Triat Gymnasium* which was made after the failure of the Triat Gymnasium located at 36 Avenue Montaigne. This was the same institution which was cruelly expropriated without indemnity by the city of Paris, an action which completely ruined this good man. The purpose of the petition was to ask the city of Paris to supply a new gymnasium as a replacement for that which it seized without payment.

The refusal to create Triat's proposed normal school at Billancourt has undoubtedly cost us several million francs in sheer waste since this institution could have relieved or fought many preventable maladies by using Triat's method. Thousands of human lives—flames of life that might have enlightened their own and others' existence—have been willfully snuffed out. But every possible financial resource was brought to bear in order to rescue these useless human ruins who were by then rickety, in the last stages of consumption, alcoholic, epileptic, and so forth. They become social rubbish which we keep alive at great expense rather than seeking ways to develop vigorous procreators, sowers of effective social life, and solid bodies to oppose invaders.

TRIAM GYMNASIUM

22 Rue du Bouloi
(1st arrondissement)
Paris

Rational Gymnastics - Hydrotherapy

Gymnastics is the regular culture of the body. What study is for the spirit, gymnastics is for the body. The ancients obtained their constitutions that were so robust and so handsome owing to the practice of this art. It is an art that has been neglected too long in our time.

After having done a complete study of the systems used in all the countries of Europe, we have succeeded in devising a method that is entirely new, complete, and rational.

We have devised and created the greater part of the machines and instruments that we use. We are the inventor of the dumbbells, Indian clubs, and barbells which one sees in every gymnasium.

The *Floor exercise*, which is a logical series of graduated movements in which each exercise has its own special and predeter-

mined purpose, is *our invention*.

We are pleased to see practiced (however incompletely) in the principal gymnasiums of the city *our method* thus proving that it is convenient for both sexes, appropriate for all ages from infancy to old age, and conducive to good health. Our system is the best way to prevent the disastrous consequences of a sedentary life and of employment which uses the intellectual faculties exclusively.

Our rational and hygienic gymnastics is equally curative in purpose. For more than forty years we have effected (especially in our individual treatments) the cure of numerous invalids who have been afflicted with the gravest and most chronic illnesses.

We have moved our establishment from the Avenue Montaigne to the very center of Paris at 22 Rue du Bouloi (1st arrondissement) in a vast and perfectly ventilated location. It is well lighted and adequately heated during the cold season.

Two rooms are used for Hydrotherapy. They are placed under the supervision of special, highly trained doctors.

H. TRIAT

H. Triat possessed a superb musculature. He was very elegant in form and had extremities of the most incredible delicacy. Here follow his measurements taken on July 18, 1854 by Dr. Castel: height: 1 meter 79, neck: 45 cm., chest: 1 m. 24, biceps: 41 cm., fist: 17 cm., waist: 83 cm., hips: 1 m. 05, thigh: 73 cm., calf: 44 cm., knee: 22 cm., hand length: 17 cm., foot length: 27 cm., weight: 95 kilos.

Here are the feats which Triat performed with his barbells and his weights. He lifted a barbell weighing 101 kilos a single time with two hands. He correctly curled a 32-kilo dumbbell while with his left shoulder rested against a wall and his left foot was 45 centimeters from the wall. Triat also lifted a weight of over 1,000 kilos on his back, his hands supported by a trestle. He was also a very good tumbler, and Triat was able to jump over an ordinary horse. He did three one-arm pushups. He lifted 150 kilos with his teeth, juggled admirably with medium sized balls, and was a distinguished balancer; balancing on a horizontal bar on one foot he performed an effortless lift of two 45-kilo dumbbells.

Triat also performed a remarkable feat which no other person has ever duplicated: using a little iron column, he assumed the flag position with his right hand below and his left hand above and his body extended horizontally. Triat then released his right hand and smoothly lowered his body while thus supporting his entire weight on the arm that was bent.

All of these deeds were performed in front of witnesses, and the latter feat was the object of an affidavit signed by the singer Darcier (a very strong man in his own right), by d'Elchingen, the Emperor's aide de camp (who died after becoming general of a division), by Prince Murat, Charette, Edmond Dam, Franconi, and many others.

Triat had a considerable grip strength, in fact one could say that Triat never released anything he seized until he wanted to. Here is an anecdote to prove that statement: Around 1856 or 1857 a troupe of wrestlers came to Paris (perhaps the first Rossignol-Rollin troupe).¹ In this group there were two brothers named Blas and Bonnet Lebeuf of Nantes. One day these two provoked the great strongman by saying that Triat had only gripped little sissy girls by the wrist, and that if he were to grab hold of a real man...and so on and so forth. In response, Triat offered to take both men by the hand one in each of his two fists. They accepted. Despite their contortions and their cries for help, these two men simply could not pry themselves loose

from Triat's grip, and it was only after they begged for mercy that their adversary released them. They later found that the skin of each of their wrists was swollen like a bracelet where Triat had gripped them.

Triat had a unique training method for developing his grip strength. He always had one or two rubber balls with him, and he pressed and kneaded these balls while he walked, read, or did other things.

Triat's training techniques were very complex since he had different exercises for each person. He had condensed a bit of everything in his floor exercises for he had to deal with many different types of people, from children and ladies to young men and the elderly. These floor exercises are the ones he used for men:

FREE HAND EXERCISES — arm rotation, leg lunges, knee bends etc.

SIX-KILO GLOBE BARBELLS — putting the bar behind the neck and the back, twists, exercises on the balance beam, etc.

RUNNING — gymnastic walking, hopping, side stepping, jumping

LIGHT DUMBELLS — Thrusts in all directions, always alternating,

body bends, etc.

LIGHT BARBELLS — walking with resistance, lifting the arms with a half twist etc.

HEAVY DUMBELLS AND BARBELLS — snatching, swing-lifting, pressing, cleaning, etc.

PHYSIQUE POSES — among which is that of "The Gladiator;" lifting of one gymnast by another.

Each student in these lessons does only those exercises which Triat tells him to do (at least at the beginning). Later the student does them all. We can assure our readers that when one did a complete lesson, finishing with the 15-kilo dumbbells, especially on the days when Triat took command, one would have had quite enough. In less than half an hour the student would be drenched in an abundant perspiration and ready to head off to the showers at the end. Triat was very partial to these obligatory showers, and he even included rubdowns with a horsehair glove. The exercises were less strenuous for women and children.²

When Triat directed the lesson, he was attired in tights and a costume from the time of King François 1st which emphasized his male beauty and his gentle, Christlike appearance in long hair that floated freely on his Herculean shoulders. His students also wore tights dyed the color of ox blood.

Triat's precursors were Colonel Amoros (1770-1848), Clia (1782-1854), Dally (1795-1862), Laisne' (1811-May 1896), and D'Argy (1803-1870). These men, however, used only the balance beam, trapeze, rings, and other gymnastic apparatuses: they had no use for dumbbells except those of the lightest weight.

Triat encouraged the use of dumbbells and invented the two-handed barbell. He devised many exercises for his students using 6-kilo globe barbells. On the subject of heavy and medium weights, Triat never wanted to see a weight simply dropped after it had been lifted. He demanded that the weight be brought down slowly, teaching that the descent of a weight did just as much good as the ascent.

It was Triat who had introduced to France dumbbells, globe barbells and especially (we particularly insist on this) pulley apparatuses with every sort of combination. He had in a special room in his gymnasium at least 150 sorts of pulleys in order to work every part of the body and to deal with all cases of orthopedic and curative gymnastics. Several unscrupulous people have claimed these ideas as their own and have taken out patents under their own names as the

inventors without giving credit to Triat. Triat is also the inventor of a wealth of extremely ingenious apparatuses all of which mark him as a master.

Later Triat opened all other gymnasium at 22 Rue du Bouloi, but no matter where he went, dumbbells were always of the utmost importance in his method. Triat himself had unforgettable strength, for he twice lifted a 91-kilo dumbbell in his right hand and an 84-kilo bell in his left.

Triat has left practically nothing in writing. Even so, he had written a great deal, but disheartened by human ingratitude, he destroyed everything—plans, studies, notes, observations—a little before his death. It is most unfortunate that this should be the case. He had, however, published a book in 1857 in collaboration with Napoleon Dally.³

Triat did not use trained gymnasts as instructors, instead he educated them himself from start to finish. These included his nephew Laplanche (who died at Montpellier where he was director of the Grand Gymnasium), Solérol (who passed away at Paris in 1896), and Leon Martin (died in Paris).

Triat loved to repeat certain maxims, for example:

"Exercise is not exhaustion."

"Working out is not working to death."

"The body's strength, carefully directed, is a source of moral as well as physical beauty."

Triat had founded his gymnasium in Brussels in order to train educators of both sexes. In his gymnasium on the Avenue Montaigne, he had two teachers for ladies: Misses Allix (Augustine) [1838-1901] and Mathilde who loved her teacher, and in turn was loved by him.

Eugene Paz had been a student of Triat.⁴

The recently deceased Nicolas (1838-1901) who owned the gymnasium in the Rue de Rome in Paris was also one of Triat's students.

At the world's fair of 1878 Triat exhibited a model of his gymnasium. This was a miniature of his huge establishment in the Avenue Montaigne. He had it made by the cabinet maker, Burlot, on the Rue Saint-Lazare.

Triat's finest project was the idea of founding a teaching college of rational gymnastics on the island of Billancourt just a short distance from Paris. Triat had plans drawn up as well as an engraved illustration of this model establishment before submitting the proposal to the government. Unfortunately, the officials preferred to construct a military armory on the island of Billancourt rather than creating a school that would turn out students who would go out into France and spread the good news about Triat's excellent system. If this project had succeeded, thousands of invalids would never have encumbered our hospitals, millions of francs would not have had to be spent to cure them, and much suffering could have been averted.

The island of Billancourt would have had paths for running and for cycling, the river for swimming and canoeing, a school for gymnastics and physical culture, and all this at the very gates of Paris. The plan was simply too easy to accomplish, and that is why the project came to nothing. It was a concept of vast implications, but Triat had not counted on the hostility of the powers that be and with the criminal indifference of those who *should* have put betterment of the nation above everything else.

Triat was among the first who understood that it is far preferable to prevent disorders at an early age than to cure them at a later time. He believed that by establishing model gymnasiums (rather than constructing new hospitals) he could improve the physical state

of his contemporaries by exercise and hygiene. In this way he could combat the unhealthy or unsanitary conditions which had been caused by modern life.

What a fortune in time and money has been spent trying to cure the rickety and to heal the consumptive! Even when medical science does manage to save a few of these unfortunates, they are burdened with weakness, degeneration, and ulcerous lesions for the rest of their lives. Who can say how many of these victims could have been rescued from their sorry lot if from childhood they had had the advantage of physical education (and by physical education we mean hygiene and exercise)? How many of these victims, I ask, could have been saved from infirmity if they had had more fresh air and more light? Their bodies could have profited by a few simple rules of hygiene and by the application of that which is both a panacea for all physical degeneration and a supreme antidote to all morbid dispositions: Physical Culture!

Unfortunately, the myopic opponents who greeted Triat and his plans were always ready to rise up against anyone who advocated building a teaching college for physical culture since they feared this would make additional hospitals completely useless! Although it is true that Triat's plans were aborted, at a distance of nearly fifty years his concepts are all the more noteworthy. Triat devised his theories in one fell swoop at a time when the sporting ideal had not yet been accepted as it is in our days; his pioneering efforts have thus become an important part of modern life.

Triat's project has lately been revived in a form that is more in line with the progress that has come about in sport. This latest incarnation will take the form of a Palace of Sport constructed in the Champ-de-Mars where it will offer the best possible equipment and the finest technical conditions.

Hippolyte Mayon was one of those who knew Triat. He was born in 1852 and is the director and proprietor of the gymnasium on the Rue de Rome in Paris. Mayon has retained a profound respect for the good man who was Triat, and he continues to speak of his departed friend with the tenderest of emotions. Mr. Mayon purchased the various weights from the great man's gymnasium, and all of these are stamped with Triat's name. Most notable are the two huge dumbbells which one can see on the left in the engraving of Triat's gymnasium. These are the same weights which Triat would lift when he had a distinguished visitor to his premises. These two dumbbells are the only remaining proof of Triat's abilities. Here was a man who was one of the precursors of the sporting movement and who guided future generations toward a better and more comely existence. We will no longer allow the names of those who contributed to making life easier remain in oblivion, for with his athletic physique, Triat imparted to all the tranquil goodness which is the endowment of the real strongman. Just as we give credit to the wise men who have formed society's fabric, we must also render justice to the artisans of physical health and beauty for they have created the greatest good without which there would be no enjoyment of life.

At the death of the master, Mayon bought Triat's library, papers, receipts, and other materials. Mayon can thus give witness to the numberless difficulties recounted by Triat in order to overcome the apathy of his contemporaries. It was while consulting these papers that Mayon gained a true appreciation for the creator of scientific gymnastics, for Triat had always worked for the ideal and not for himself. As soon as he had the means, he invented pulley machines and counterweight devices which the two cabinet makers, Viot and Burlot, made for him. These devices for improving the human race were very expensive, and toward the end, this good man ran up a colossal bill and was reduced to living in a state of near misery.

Mayon still has the clock which stood in Triat's great gymnasium, and he showed it to us. We could not help considering with sincere melancholy, that this timepiece had at one time sounded the hours triumphantly as it witnessed the members invading the gymnasium in order to build up their muscles. But the clock had also rung

out the sad, fateful hours when Triat saw his dreams of glory take flight in a lowering sky without ever having his great plans for the regeneration of all mankind come to fruition.

Somber and bitter were the final hours of this great man. His haggard face mirrored the cruel blows of fate that had descended upon him. He had known the liveliest earthly emotions and the most energetic passions, the most ardent joys, satisfied ambition, and ecstatic love (for Triat had been a handsome man) only to have them bartered by Fate for a run of dismal luck and torments aplenty. And after having sacrificed the best years of his life in order to reform his fellow human beings, he came at last to his end. Triat passed away in a barren attic, alone and abandoned by all, without even the hand of a friend to close his eyes.

Triat died a pauper, but the father of the two Allix sisters who had been female instructors at Triat's Gymnasium took his corpse and laid it in their family's crypt in the Cimetière du Nord. Unfortunately, the great man's name was not even inscribed on the tombstone. Since he was, alas, penniless, everything leads us to believe that the great pioneer's body would otherwise have been thrown into a common grave with the beggars, vagabonds, and other anonymous derelicts of life.

Poor great Triat! From on high you might see today's systems of physical education floundering about, and you might hear the worthless advice of the self-proclaimed professors of physical culture. If so, you might well regret the time that you wasted here below attempting to give happiness to your pupils and trying to turn your fellow citizens into a strong, energetic, and healthy nation.

Ours is a country where numerous well-formed children should be able to look across the border quite fearlessly at the Kaiser's 60 million vigorous subjects (double that of our own) who wait impatiently for the time when they can take advantage of their numbers. It is this advantage that will allow our nearby adversaries to put an end to our political quarrels, our silly amusements, and our frivolous occupations once and for all. Ours is currently a land where fashion, theater, and horse racing take precedence over questions of national vitality. We might therefore soon find our neighbors taking possession of our beautiful country in the name of the only earthly law that they understand: the law of the jungle.

Notes

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¹Rossignol-Rollin [1821-1873] was a talented and much-loved theatrical manager who traveled around Europe in the early decades of the Nineteenth Century with a troupe of performing strongmen and wrestlers. It was largely thanks to this golden-tongued manager that professional strongmen developed a wide audience in France. Rossignol-Rollin was a quintessential impresario, as Desbonnet confirmed in *The Kings of Strength*. "His impressive volubility and his daring originality surprised Paris, the provinces, and foreign lands." p. 93

²Triat was careful about training the different groups of students in separate classes. He eventually had separate classes even for thin and obese pupils. According to Desbonnet in *Comment On Devient Athlète*, "Triat was particularly energetic with his overweight pupils. The lesson which he gave them was terribly hard. Working with their torsos covered in thick woolen jerseys, they left the floor literally drenched in sweat. . . The prosperous Second Empire bellies that he thereby reduced were numberless!" p. 6.

³Desbonnet: *Kinesiology or the Science of Movement* explains in simple terms the exact solution to one of physical culture's most complex problems.

⁴Eugène Paz established his gymnasium on the Rue des Martyrs in 1866. It was a conscious (and apparently unacknowledged) imitation of the Triat establishment. Paz marked the opening of his gymnasium with a magnificent display of wrestling, but when that had been done, he abandoned pugilism to devote himself to his real interest: curative gymnastics. Desbonnet, *Kings of Strength*, 43-45.

Physical Exercise and Training In Ancient Jewish Lore

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Hygiene was in ancient times much more developed than people imagine. Physicians, philosophers, and even theologians admonished their audience (or patients) to adopt a healthy way of life. The Jewish medieval authority Maimonides (twelfth century), who was a trained physician, included detailed suggestions on how to live a healthy life in his theological masterpiece *Mishneh Thora*. Maimonides warns against loss of strength that may result from living a sedentary life and from lack of physical exercise. Even in the Bible, the book Ecclesiastes puts sedentary scholars on their guard: "Much study is a weariness of the flesh" [Eccl. 12: 12]. A talmudic statement seemingly suggests that the physical strength of scholars had diminished from generation to generation: "From the time of Moses till the generation of Rabban Gamliel the students stood up while learning the law. After the death of R. Gamliel disease (or weakness) came down on the world, and they learned while being seated" [b. Megillah 21a]. Rabbi Yohanan gave the following advice: "Do not sit too much, it provokes hemorrhoids; do not stand too much, this is harmful to the heart; do not walk too much, this is injurious to the eyes." He accordingly advised to sit one third, stand one third, and walk one third of the way [b. Kethubot 111a]. Rabbi Judah remarked that people and animals who live in a town where there are many ascents and descents (acclivity) die in half their days. At second thought, he says, no, they do not really die, they age prematurely [b. Erubin 56a]. Other sages stated: "Whoever eats and does not walk thereafter at least four cubits, the food he ate will rot (i.e. will not be digested), which will bring forth foul odor from the mouth" [b. Shabbat 41a]. Not only digestion, sleep as well is influenced by activity, as is stated in Ecclesiastes: "Sweet is the sleep of a working (i.e., physically active) man, whether he eats little or much: but the repletion of the rich (i.e., idle) will prevent him from sleeping" [Eccl. 5: 11].

After this data on the place of physical exercise in hygiene, let us consider physical training and fitness in ancient Jewish lore. Obviously, Jews pertaining to the Pharisaic sect did not visit Roman (or Herodian) amphitheaters and the Sages several times insisted that a Jew should not visit the heathen theaters and circuses.¹ The context in the Talmud is more in the modern sense of entertainment (illusion, magic, etc.) than in the Greco-Roman sense of gymnastics, or gladiators, or fighting animals. If the Jews were in principle rather encouraged to study the law than to indulge in physical exercise, keeping the body in good shape was not neglected, or even considered inferior to intellectual activity.

Wherefrom do we know that the Almighty feels honored by the presence of people of high (impressive) stature (ba 'alei gomah)? From a statement of the prophet Amos (2:0): "Yet I destroyed the Emorite before them, whose height was like the height of the cedars, and he was strong as the oaks." The talmudic text does not elaborate, but it seems clear that the author of this statement had in mind what Amos added further in the same chapter while foretelling that the Lord would spare none of his unfaithful people: ". . . The strong shall not retain his force, nor shall the mighty man deliver himself; not shall he who handles the bow stand; and he who is swift in foot shall not deliver himself; nor shall he who rides the horse deliver himself. . ." (Amos, 14:15). There are in this quote quite a number of references to physical exercise, to running, riding, drawing the bow, and to physical strength which of course is of no avail against the Lord's wrath, but nonetheless "honor the Lord."

"The glory of young men is strength" says Proverb 20:29, adding "and the beauty of old men is their white hair." Another

proverb (which may be variously interpreted) says: "A wise man is strong, and a man of knowledge increases strength" (Proverbs, 24:5).

Turning now to sports and physical training, there are in the Bible a number of references to running and racing. For instance, Samuel, explaining to the people the practices of kings, warns them that the king will take their sons to be his horsemen, and "some shall run before his chariot" (I Sam. 8: 11). Indeed, when Absalom usurped the throne of his father David, he had chariots and horses prepared, "and fifty men to run before him" (II Sam. 15:1). At the court of king Assuerus (Artaxerxes) there were also runners who conveyed letters to remote provinces (cf. Esther 3: 15.). In the times of Ezechias there were as well such postal runners who brought letters from the king "from city to city" (II Chron. 30: 6: 10). Some warriors of the tribe of Gad were particularly "apt for battle" among David's small army, and were "as swift as staggards [stags] upon the mountains" (I Chron. 12:9).

It is stated in the Talmud that "the runners are allowed to go out on the Sabbath day with their special dress over their shoulder. Eyen people who are not professional runners are allowed to do so."² Another sage recalls a saying of the prophet Jeremiah: "If thou hast run with the footmen, and they have wearied thee, then how canst thou contend with horses?" This parable is expanded in the Talmud into the following story: "A man affirmed: 'I am able to run three Persian miles before a bunch of horses in a marshy region;' there came forward a footman who ran before him for three (shorter) miles on dry land and he was exhausted."³ So they said to him: 'If this was the result when you ran before a footman, what would it have been before horses! If on a distance of three ordinary miles, what on a distance of three Persian miles? If on dry land, what would have happened on marshy ground!'"⁴ Another story is told in tractate Niddah about a sage who ran after a deer but was unable to catch up with it.⁵ In Hellenistic times, Jews of Judaea were involved in running competitions and in chariot races. For instance, an inscription found at Aphrodisias in Caria, and dating back to the times of the Emperor Marcus Aurelius, tells us that among the names of victorious competitors to a race, there were several names of sportsmen coming from Palestinian cities.⁶

From Flavius Josephus we learn that Herodes-the-Great built theaters and a hippodrome. He established athletic contests every fifth year in honor of Caesar (Ant. XV, 268). Josephus states that "the use of such buildings and the exhibition of such performances have not been traditional with the Jews" (Ant. XV, 268). Herod also organized races of two-horse and four-horse chariots, as well as mounted horse-races (Ant. XV, 270). King Herod had two bodyguards who were esteemed for their athletic skills, and after having been dismissed from the guard they became instructors in gymnastics and received gold and other gifts (Ant. XVI, 314).⁷

The Jewish people, from the first moment they set foot on the Holy Land, were exposed to constant wars; martial arts and exercise were therefore practiced no less than in neighboring cultures. We are informed that David was an expert in throwing stones with his sling (I Sam. 17:40). Spear-throwing was also widely practiced. There was near Jerusalem a place called Goren Kidon which may have been a training ground for spearlancers.⁸ The practice of bow and arrows was perhaps the most popular martial art. David's friend Jonathan, in order to warn him off from his own father, King Saul's, wrath, devised a special way of throwing the arrows "at a mark" (I Sam. 20:20). A skilled archer is a symbol of power and strength, as featured in Psalms: "As arrows in the hands of a mighty

man, so are the children of one's youth: happy is the man who has his quiver full of them: they shall not be put to shame, they shall speak with their enemies at the gate" (Ps. 127:34-5). Josephus informs us about a Jewish soldier in the army of Alexander named Meshullam (Mosollamos) who was "a very intelligent man, robust, and, by common consent, the very best of bowmen, whether Greek or barbarian" (Ag. Apion 1,201).¹⁰

Fencing is also documented in biblical times. There happened once a frightening passage of arms between twelve youths of the house of Ish-boshet (Saul's son) and twelve servants of David. This was supposed to be 'play,' but it became a slaughter. "They caught everyone his fellow by the head, and thrust his sword in his fellow's side; so they fell down together" (II Sam. 2:16). The weapon used was the sword (herev), but lances were used as well.¹¹

Leaving wars and battles, let us consider other physical activities, such as dancing, swimming, rowing, the ball-game and gymnastics. "Let Israel rejoice in Him who made him. . . Let them praise his name in the dance. . ." writes the Psalmist (Ps. 149:2-3).¹² But the Children of Israel also danced around the Golden Calf (Ex. 32:19). Young girls particularly enjoy dancing (Jer. 31:3). Eighty varieties of dancing were known to Pharaoh's daughter, according to the Midrash (Levit, Rabba 12:4).

There may be found in the Bible several references to swimming, as in Isaiah: When Moab will be trodden down as straw in the dunghill, "he shall spread out his hands in the midst of it, as he that swims spreads out his hands to swim" (Isa. 25:10-11).¹³ It is stated in the Talmud that a father should teach his son to swim (b. Kidushin 29a, 30b).¹⁴ People used a kind of barrel (havith) while learning to swim (Makkoth 36b).

No actual mention of rowing as an entertainment can be found in the Bible. Isaiah, refers to 'galleys with oars,' although nothing proves that they were owned by Israelites (Isa. 33:21).

Ball games were seemingly popular in talmudic times. The Tosefta describes those who play with a ball (kaddur) and their ball escapes to the open space (reshuth ha-rabim) on the Sabbath-day (Tos. Shabbat X (XI): 10; also IX(X): 6).¹⁵

Gymnastics includes a number of physical exercises, although it is ridiculous to consider the patriarch Jacob a trained weightlifter owing to the fact that he lifted (alone), or rather rolled the heavy stone from over the well, in order to water the flock of Rachel (Gen. 29:8-10). Or to present him as a successful wrestler, as he fought a man (or an angel?) throughout the night, and prevailed (Gen. 32:25-26). More interesting is a remark of Jerome (based on Zach. 12:3), which indicates that there was an old custom in the towns of Palestine to use heavy round stones in order to try one's force in lifting them up.¹⁶ High jumping is alluded to in Psalms: "For by thee I run through a troop, and by the lord's help I leap over a wall" (Ps. 18:30)¹⁷ It was customary to enjoy some physical exercise after a (warm) although the term "mit' amelin" is sometimes interpreted as having massages performed, rather than doing exercise (b. Shabbat 147b). The eleventh-century commentator R. Hananel explains: people used to extend and bend their arms and legs, thus warming themselves up and sweating, which was a kind of medical nostrum.¹⁸

To sum up, the ancient Hebrews and the Jews in the classical and Byzantine period indeed shunned on the one side the cult of bodily beauty and strength (as pertaining to the Greco-Roman culture). On the other hand, they encouraged attaining bodily fitness. Even Tacitus, who can hardly be considered a philosemite, remarked: "Their males have healthy bodies, able to cope with hardships."¹⁹

Maimonides also provides additional stimulating data that are relevant to our topic. From his medical work, *The Aphorisms of Moses (Pirkei Moshe)* come a few statements contained in Chapter Eighteen which deal mainly with physical exercise:

18.2 *The best kind of physical exercise is one which tires the body while straightening the soul and making it happy, as for instance hunting, or playing with the ball. Such psychological effects may even cure diseases.*

18.4 *The best and most successful exercise is the one which*

evacuates what is stored deep into the body (fat? humors?).

18.9 *Too violent exercises dry up and harden the body; they diminish sensitivity and intelligence. Thus wrestlers, weight lifters or those carrying heavy burdens are of low intelligence.*

18.13 *The time most suitable for physical exercise is after complete digestion of the evening meal*

18.11 *Old people need exercise as they need to warm up their body. Neither should they remain motionless nor too active. Too much exercise would cause their frail warmth to cool down to extinction.*

The first quote is particularly enlightening. Physical exercise should be practiced not just in order to tire the body, but it should also make the soul happy. This is how sports should be practiced, and we know only too well that in modern times this ideal situation has sadly deteriorated. As it seems, exercise is perhaps in a sense "too violent" and therefore "diminishes sensitivity and intelligence."

From Maimonides' theological (halakhic) work *Mishneh Thora*, we shall pick out a striking text on 'walking'. Maimonides holds that a man should be in full control of his life, and walking is one manifestation of one's way of life. Maimonides therefore writes:

"A wise man should not walk with a proud posture and outstretched neck [cf. Isa. 3:16]. He should not walk with mannerism bringing heel to toe, as do women and haughty people. Neither should he run about in the street as do lunatics. One should not droop while walking, looking like hunchbacks, but look downwards like being in prayer. His gait in the street should be that of someone who is occupied with his affairs. From the way one walks in the street it may be recognized whether he is wise and thoughtful or stupid and foolish." [Hilkhot De'ot, Ch. 4(15)].

Paraphrasing and expanding talmudic lore, Maimonides warned the scholars quite clearly: "Whoever is always seated and does no physical exercise—even if he eats only healthy food and follows medical advice—will always be sickly and weak."²⁰ Should we not even today listen to the voice of our great medieval scholar?

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¹See B. Abodah Zara 18B; Tos. Avodah Zarah 2: 5-7.

²See b. Shabbat 147a and Tos. Shabbat V (VI): 11.

³A Persian mile was four times longer than the ordinary mile (= 2000 cubits).

⁴Sanchdrin 96a.

⁵Niddah 24b.

⁶Quoted in Emil Schuerer, *The History of the Jewish People in the Age of Jesus Christ* rev. ed., (Edinburgh: Clark, 1973), I:45ff. Schuerer also quotes a work entitled *Expositio totius mundi*, by an unknown author of the fourth century in which a variety of sports and contests that were practised in the most important cities of Syria are listed.

⁷See my *Medicine and Hygiene in the Works of Flavius Josephus* (Brill: Leiden, 1994), 65.

⁸See 1. Chron. 13:9. "Kidon" is the Hebrew word for spear.

⁹The word "hez" (arrow) appears more than fifty times in the Hebrew Bible. For the mark for arrow-throwing see also Lam. 3:12.

¹⁰This supposed to be a quote from a work of Hecataeus of Abdera (4th-3rd cent. B.C.E.), a contemporary of King Alexander and Ptolemaeus.

¹¹See in the same chapter (11 Sam. 2:23) how Abner smote Asa'el with a lance (hanith).

¹²See also Ps. 30:12, and the opposite in Lam. 5:15.

¹³See also Ez. 47:5; I Macc. 9:48.

¹⁴Also Tos. Kidushin 1:11; Midrash Kohelet Rabba to 9:9.

¹⁵There are several references to ball-playing in the Midrash, even to a ball-game among girls (Kohelet Rahha to 12:11).

¹⁶See also commentary of Rashi (Rabbi Solomon Yizhaqi, eleventh century) on I Kings 1:9 where the text speaks of a place called 'stone of Zohelath'.

¹⁷Repeated in 11 Sam. 22:30. See also Zeph. 1:9 (jumping over the threshold).

¹⁸Rabbi Hananel relates to b. Shabbat 147b.

¹⁹Tacitus, *Histories* V:6; (London: Heinemann, 1969), 185.

²⁰Maimonides adds: "As lone as a man does some physical exercise and is active physically, as long as he is not overeating, and his bowel-movements are easy, he will not get sick and his strength will increase" (Mishneh Thora, Hilkhot De'ot, 4: 14-15).