

THE
ATLANTIC MONTHLY.

A MAGAZINE OF LITERATURE, ART, AND POLITICS.

VOL. III.—MAY, 1859.—NO. XIX.

THE GYMNASIUM.

Two distinct yet harmonious branches of study claimed the early attention of the youth of ancient Greece. Education was comprised in the two words, Music and Gymnastics. Plato includes it all under these divisions:—"That having reference to the body is gymnastics, but to the cultivation of the mind, music."

Grammar was sometimes distinguished from the other branches classed under the term, Music; and comprehended, besides a knowledge of language, something of poetry, eloquence, and history. Music embraced all the arts and sciences over which the Muses presided.

Grammar, Music, and Gymnastics, then, comprised the whole *curriculum* of study which was prescribed to the Athenian boy. There were not separate and distinct learned professions, or faculties, to so great an extent as in modern times. The compass of knowledge was far less defined, and the studies and attainments of the individual more miscellaneous. Some of the arts rose to an unparalleled perfection. Architecture and sculpture attained an excellence which no subsequent civilization has reached. But the practical application of the sciences to daily use was almost entirely neglect-

ed; and inventions and mechanics languished until the far later uprising of the Saxon mind.

Yet the whole system of education among the Greeks was peculiarly calculated for the development of the powers of the mind and of the body in common. And it is from this point of view that we wish to consider it, and to show the nature and preëminence of gymnastics in their times as compared with our own.

Doubtless Grecian Art owed its superiority, in some degree, to the gymnasium. Living models of manliness, grace, and beauty were daily before the artist's eye. The *stadium* furnished its fleet runners, nimble as the wing-footed Mercury,—fit types for his light and airy conceptions; while the arena of the athletes offered marvellous opportunities for the study of muscle and posture, to show its results in the burly limbs of Hercules or the starting sinews of Laocoön. Many of the most lifelike groups of marble which remain to us from that time are but copies of the living statues who wrestled or threw the quoit in the public gymnasium.

It is worthy of remark, in corroboration of this view, that the department

of the fine arts which depended on outline surpassed that which derived its power from coloring and perspective. The sculptors far excelled the painters. The statue was the natural result of the imitative faculty surveying the nude human figure in every posture of activity or repose. Pictures came later, from more educated senses, and from minds which had first learned outward nature through the medium of the simpler arts.

The ancient *gymnasium*, apart from its baths and philosophic groves, was far from being, as with us, a mere appendage of the school. Modern instructors advertise, that, in addition to teachers of every tongue and art, "a *gymnasium* is attached" to their educational institutions. In old times, the *gymnasium* was the school,—the public games and festivals its "annual exhibitions."

The word *gymnasium* has reference in its derivation to the nude or semi-nude condition of those who exercised there. But in their proper classical interpretation the public *gymnasia* were, to a great extent, places set apart for physical education and training. *Gymnastics*, indeed, in the broadest sense of the word, have been cultivated in all ages. The spontaneous exercises and mimic contests of the boys of all countries, the friendly emulation of robust youth in trials of speed and strength, and the discipline and training of the military recruit have in them much of the true *gymnastic* element. In Attica and Ionia they were first adapted to their noblest ends.

The hardy Spartans, who valued most the qualities of bravery, endurance, and self-denial, used the *gymnasia* only as schools of training for the more sanguinary contests of war. So, too, the martial Roman despised those who practised *gymnastics* with any other object than as fitting them to be better soldiers. Yet to so great a degree were these exercises cultivated, even by the latter nation, that the Roman private of the line did his fifteen or twenty miles' daily march

under a weight of camp-equipage and weapons which would have foundered some of the best-drilled modern warriors, and concluded his day's labors by digging the trenches of his camp at night. The ponderous *pilum*, and the heavy, straight sword of the infantry were exchanged in the barrack-yard for drill-weapons of twice their weight; and so perfectly were the detail and regularity of actual service carried out in their daily discipline, that, as an ancient writer has remarked, their sham-fights and reviews differed only in bloodshed from real battles. The soldier of the early Republic was hence taught *gymnastics* only as a means of increasing his efficiency; the lax prætorian and the corrupt populace of the Empire turned gladly from the *gymnasium* to the circus and the amphitheatre.

In the same manner were these exercises regarded by the Dorians and the people of some other of the Grecian States. The inhabitants of Attica and of Ionia, on opposite shores of the Ægean, as more cultivated races, viewed them in a more correct physiological light. But it was at Athens that the *gymnasium* was held in highest repute.

We read that Solon, the Athenian lawgiver, first established particular regulations for its government. Attic legends, however, gratefully refer the earliest rules of the *gymnasium* to Theseus, as to one of the mightiest of the mythical heroes,—the emulator of Hercules, slayer of the Minotaur, and conqueror of the Amazons. Hermes was the presiding deity, which may appear strange to us, as he was as noted for an unworthy cunning as for his dexterity. Generous emulation and magnanimity were regarded as the noblest qualities called forth in *gymnastic* exercises; and Mercury seems a fitter tutelary divinity of the wary boxer and of the race-course than of the whole *gymnasium*.

Probably no Greek town of any importance was destitute of one of these schools of exercise. Athens boasted three public *gymnasia*,—the *Cynosarges*, the

Lyceum, and the Academy. These were the daily resort of young and old alike, though certain penal laws forbade them from exercising together at the same hour.

The school-boy frequented them as a part of his daily task; the young man of leisure, as an agreeable lounging-place; the scholar, to listen to the master in philosophy; the sedentary, for their customary *constitutional* on the foot-course; and the invalid and the aged, to court the return of health, or to retain somewhat of the vigor of their earlier years. (The Athenians wisely held that there could be no health of the mind, unless the body were cared for,)—and viewed exercise also as a powerful remedial agent in disease.) Such a variety of useful purposes were thus subserved by the gymnasia, that it will be proper to look briefly at their internal arrangements. We shall follow the description which has been left us by Vitruvius.

The ancient gymnasium was generally situated in the suburbs, and was often as large as a *stadium* (six hundred and twenty-five feet) square. Its principal entrance faced the east. A quadrangular inclosure comprehended two principal courts, divided by a party-wall. The eastern court was called the *peristylum*, from the rows of columns which surrounded it; the western also was bordered by porticos, but for it we have no distinct name. The peristyle must have been from one to two hundred feet square. It was sometimes termed the *palæstra*, though this name was afterwards restricted to the training-school of the athletes proper, who made gymnastics the business of their lives. It was also styled the *sphaeristerium*, or ball-ground, to which the nearest approach in modern times is the tennis-court. The chief western inclosure was planted with plane-trees in regular order, with walls between them and seats of the so-called *signine* work, and was about one half larger than the peristyle. The space between the columns of the latter and the outer walls allowed sufficient room for rows of chambers, halls,

and corridors, whose uses we will next designate.

The first room on the right, as one entered the east gate, was the *loutron*, or room for washing, distinct from the regular baths. Next, in the northeast corner, was the *conisterium*, where sand was kept for sprinkling the wrestlers after they had been anointed for the struggle. West of this lay the *coryceum*, a hall for exercising with a sack of sand suspended from the roof. It seems plausible to suppose that this exercise corresponded with that more recently practised by Mr. Thomas Hyer, previously to his fight with Yankee Sullivan. A bag of sand, equal in weight to his adversary, was daily pommelled by the champion of America until he could make it swing and recoil satisfactorily.

Adjoining this room were two small apartments called the *ephebeum* and the *elæothesium* respectively. The former was devoted to preparatory exercises, probably by way of warming up for severer efforts; the latter was used for anointing, and was connected with the baths, which followed next in order. These were the *frigidarium*, the *caldarium*, the *sudatorium*, and the *tepidarium*, for the cold, the hot, the sweating or vapor, and the warm baths. They did not possess the magnitude and ornament of the Roman *thermæ*. They were used in connection with and after exercising, and were enough for all practical purposes. Bathing was not then the business of hours every day, as it was later in the Roman Empire, when the luxurious subjects of Caracalla indulged several times in the twenty-four hours in such a variety of ablutions as would have satisfied a Sandwich-Islander.

We have now arrived at a point nearly opposite our entrance at the east, and, continuing round the southwest, south, and southeast sides of the peristyle, find a large number of consecutive chambers devoted mainly to the philosophers, as lecture-rooms and auditories for their classes and followers. On the north side of the peristyle is a double portico contain-

ing the *exedra*, or seats of the sophists, where each most cunning rhetorician delivered his opinions *ex cathedra*, and lay in wait for any passer whom he could insnare into an argument. The groves of the great western court were probably used by the loungee, the contemplative, and the studious, if we may judge by numerous seats and benches, at convenient intervals. On the south side of these was again a double portico; and on the north, outside the pillars, the *zystus*, or covered porch, where the athletes exercised in winter and in bad weather. The arena was twelve feet wide, and sunk a foot and a half below a marginal path of ten feet, where spectators could walk. On the north and south sides of the whole building were wings, of less width, extending nearly its entire length. That on the north contained the *stadium*, or foot-race course, which was, however, sometimes disconnected from the gymnasium. The south wing was of like dimensions, and adorned with plane-trees and walks, forming a more private retreat.

It will be readily conceived that this vast area was not devoted exclusively to physical exercises. Logic, rhetoric, and metaphysics claimed their place in this common focus of the city's life, and were the delight of the subtle Greeks. The Socratic reasoning and the syllogisms of Aristotle met here on common ground. The Stoics, with their stern fatalism, derived their name from the *stoæ*, or porticos; the Peripatetics imparted their ambulatory instructions under the plane-trees of the Lyceum; and Plato reasoned in the Academy, which he held with his school, and into which no ungeometrical mind was to enter. And though some dog of a Cynic might despise the union of the ornamental with the useful, and claim austerity as the rule of life, yet to the great body of the social Greek people the gymnasium offered all those attractions which *boulevards*, *cafés*, and *jardins-chantants* do now to the Gallic nation. There is more than one point of resemblance between the two countries; but

while the Athenian had the same mercenary qualities, which fitted him for outdoor life, he had even a less comfortable domestic establishment to retain him at home than the modern Parisian.

We must turn, however, rather to the physical view of the gymnasium. All the sports of the gymnasia were either games, or special exercises for the contests of the public festivals. And here a distinction must be made between amateur and professional gymnasts. The former were styled *agonistæ*, and exercised in the public gymnasium; the latter *athletæ*, and were trained fighters, whose school was the *palæstra*. At first frequenting the same, they afterwards became divided between two institutions. Some of the harsher sports of the prize-fighters were not thought genteel for well-nurtured youths to indulge in. Among the simpler games were the ball, played in various ways, and the top, which was as popular with juveniles then as now. The sport called *skaperta* can be seen in any gymnasium of to-day, and consisted in two boys drawing each other up and down by the ends of a rope passing over a pulley. Familiar still is also a game of dexterity played with five stones thrown from the upper part of the hand and caught in the palm. Various other gentle exercises might be mentioned.

The training for the public games was comprised in the *pentathlon*, or five exercises,—which were running, leaping, throwing the *discus*, wrestling, boxing. The first four were practised also by amateurs, and by most persons who frequented the gymnasium for health.

The race, run upon the foot-race course, was between fixed boundaries, about a *stadium* apart. The distances run were from one to twenty *stadia*, or from one-eighth of a mile to two and a half miles, and sometimes more. This exercise was much followed. Horses were sometimes introduced, but then the hippodrome was the course. They ran without riders, as at the Roman carnival, or with chariots. Horse-racing was most popular in the Roman circus, whose ru-

ins still show its massiveness and great size.

Leaping was performed also within fixed limits,—generally with metallic weights in the hands, but sometimes attached to the head or shoulders.

The quoit, or *discus*, was made of stone or metal, of a circular form, and thrown by means of a thong passing through the centre. It was three inches thick and ten or twelve in diameter. He who threw farthest won. It is a modern game also, and is imitated in the Old-Country custom of pitching the bar.

Wrestling has been a favorite contest in all times. Milo of Crotona was the prince of wrestlers. He who threw his adversary three times conquered. The wrestlers were naked, anointed, and covered with sand, that they might take firm hold. Striking was not allowed. Elegance was studied in the attack, as well as force. There was a distinction between upright and prostrate wrestling. In the former the one thrown was allowed to get up; in the latter the struggle was continued on the ground. The vanquished held up his finger when he acknowledged himself beaten.

Boxing was a severer sport, and not much followed except by gentlemen of the “profession.” It was practised with the clenched fists, either naked or armed with the deadly *cestus*. The “science” of the game was to parry the blows of the antagonist, as it is in the “noble and manly” art of self-defence now. The exercise was violent and dangerous, and the combatants often lost their lives, as they do at the present day. The *cestus*, like our “brass-knuckle,” was a thong of hide, loaded with lead, and bound over the hand. At first used to add weight to the blow, it was afterwards continued up the fore-arm, and formed also a weapon of defence. Mr. Morrissey, or any other “shoulder-hitter,” would hardly need more than a few rounds to settle his opponent, if his sinewy arm were garnished with the *cestus*.

We read that the late contest for the “American belt,” though short, was un-

sually fierce, and afforded intense delight to the spectators,—in proportion, probably, to its ferocity. By all means let the “profession” take the *cestus* from the hands of the highwayman and adopt it themselves. It would be one step nearer the glorious days of the gladiators, and would render their combats more bloody and more exciting. Or, better still, let us revive the ancient mode of sparring called the *klimax*, where both parties “faced the music” *without warding* blows at all. We scarcely think the ancients were up to “countering,” as it is understood now; but they fully appreciated the facetious practice of falling backwards to avoid a blow, and letting the adversary waste his strength on the air. The deceased Mr. Sullivan would hardly recognize his favorite dodge under its classic name of *hyptiasmos*, or be aware that it was in use by his very respectable predecessor, Sostratus of Sicyon, who was noted for such tricks.

The *pankration*, again, was a mode of battle which the modern prize-ring is yet too magnanimous to adopt, and which excelled in brutality the so-called “getting one’s nob in chancery,”—the most stirring episode of our pugilistic encounters. The Greek custom alluded to was so named because it called all the powers of the fighter into action. It was a union of boxing and wrestling. It began by trying to get one’s antagonist into the unfavorable position of facing the sun. Then the sport commenced with either wrestling or sparring. As soon as one party was thrown or knocked down, the other kept him so until he had pommelled him into submission; and when he arose, at last, to receive the plaudits of the assembly, it was often from the corpse of his adversary.

Beginning as the most promising pupils of the gymnasium, and becoming victors in the public games, certain gymnasts gradually grew into a distinct class of prize-runners, wrestlers, and fighters, called *Athletes*. They then devoted their lives to attaining excellence in these exercises, and withdrew to the *palæstra*, or

training-school. Those who quitted the profession became instructors in the public gymnasium. To attain great bodily strength, they submitted to many rigid rules. By frequent anointing, rubbing, and bathing, they rendered their bodies very supple. The trainer, or teacher in the *palaestra*, was termed *xystarch*. He was himself the Nestor of the "ring." The food of the athlete was mainly beef and pork. The latter, we believe, is excluded from the diet-list of the modern prize-fighter. Of their particular rules of living and "getting into condition" we know but little. Before being allowed to contend, they were subjected to a strict examination by the judges. In so high estimation were the victors held, that they were rewarded with a public proclamation of their names, the laudations of the poet, statues, banquets, and other privileges. The immediate material gain was not the winning of the stakes, but a simple crown or garland of laurel, olive, pine, or parsley, according to the festival at which they fought. Pindar has embalmed the names of many victors in his Olympic, Pythian, and other odes.

But let us leave the athletes for something more inviting. The *lampadephoria*, or torch-race, must have been a singular spectacle. There were five celebrations of this game at Athens, of which the most noted was at the Panathenæa, where horsemen often contended. The text describing it has been a puzzle to commentators;—the most rational and accepted interpretation seems to be, that it was a contest between opposite parties, and not between individuals. Lighted lamps, protected by a shield, were passed from runner to runner along the lines of players, to a certain goal. They who succeeded in carrying their lights from boundary to boundary unextinguished were declared the victors. This game will at once recall the *moccoletti*, which close the carnival at Rome.

Dancing to the sound of the *cithara*, flute, and pipe, was a favorite amusement with all classes. The grizzly veterans

and the younger soldiers all joined in the martial dances. The dance and the game of ball were often connected. The Roman dance, peculiar to the modern Greeks, is an inheritance from their ancestors. Dancing by youths and maidens formed part of the entertainment of guests. Tumblers threw somersets and leaped amid sharp knives, somewhat after the manner of the Chinese jugglers. Music was also usually associated with either poetry or dancing.

Incitements to the various gymnastic exercises which have been mentioned could be found only in public emulation, for which abundant opportunity was offered in the national games or festivals. These were a part of the religious customs of the Greeks, and were originally established in honor of the gods. It was their effect to bring into nearer contact people from the several parts of Greece, and to stimulate and publicly reward talent, as well as bodily vigor. They afforded orators, poets, and historians the best opportunities of rehearsing their productions. Herodotus is said to have read his History, and Isocrates to have recited his Panegyric at the Olympic games. The four sacred games were the Olympic, Pythian, Isthmian, and Nemean; and to these should be added the Panathenæa, or festival of Minerva. The five exercises before mentioned, together with music, in its classic sense, formed the programme. In the lesser Panathenæa occurred, first, the torch-race; next, the gymnastic exercises; thirdly, a musical contention, instituted by Pericles; and lastly, a competition of the poets in four plays. Numerous other observances, of a religious nature, were varied with the different festivals. It may be doubted whether subsequent times have seen any gatherings of equal magnitude for similar objects.

So rigid was the discipline of the ancient gymnasium, and so important was it considered that confidence should be undoubting there, that thefts, exceeding ten *drachmæ* in amount, committed

within its precincts, were punished with death.

The *Gymnasiarch*, or presiding magistrate, clothed in a purple cloak, with white shoes, possessed almost unlimited authority. He had the superintendence of the building, and could remove the teachers and under-officers at his pleasure. The exercises practised were ordained by law, subject to regulations and animated by the commendation of the masters. Instructions were given by the *gymnastæ* and the *pædotribæ*, two classes of officers. The former gave practical lessons, and were expected to know the physiological effect of the different exercises, and to adapt them to the constitution and needs of the youth. The latter possessed a knowledge of all the games, and taught them in all their variety. Nor were the morals of the young less cared for by the *sophronistæ*, a set of officials appointed for that purpose.

The plan and scope of Grecian education were more adapted to the common purposes of the community, and less to the individual aim of the pupil. Beside the public teachings of philosophers and sophists, common schools were established at Athens by Solon. Government provided for their management, and strict discipline was enforced. Here the boy was instructed in music and grammar. Until the age of sixteen, he pursued these two branches in connection with gymnastics. Some authorities assert, that, even at this period of his life, as much time was devoted to the latter as to the other two together. At sixteen, he left the school, and, until he was eighteen years of age, frequented the gymnasium alone; probably devoting most of his time to physical training, though enjoying opportunities of listening to the masters in philosophy. The period of adolescence past, and his growing frame expanded and well knit by exercise, he either continued to follow athletic sports, or began a military or other career. If a young man of leisure, he probably needed all the virtue imparted by his moral teachers to restrain him from dice, quail-fights, and fine hors-

es, and all his physical vigor to resist the dissipations of Athens or Corinth, and the potations of the *symposia*.

So far the male rising generation was well cared for. What became of the girls?

In accordance with the freer manners, but not less virtuous habits of Lacedæmon, maidens were there admitted as spectators and sharers of the gymnastic sports. Though clad only in the Spartan *chiton*, they took vigorous part in dancing and probably wrestling. The Athenian maid could not air even her modest garments in public with the consent of popular opinion. The girls were educated and the women stayed at home. The *gynækeion*, or female apartment, was nearly as secluded as the *seraglio*. The females were under direct, though not slavish submission to the men. Modesty forbade their appearance in the gymnasium. Domestic occupations, the rearing of children, spinning, light work, and household cares filled up their time. We are told that an Athenian mother once ventured in male attire to mingle among the spectators of the Olympic games. Her cry of joy at the triumph of her son betrayed her. Because she was the mother of many victors, she was spared from infamy; and her services to the state, in rearing men, alone saved her from the consequences of an act which maternal solicitude could not have excused.

Too much license in the intermingling of the sexes formed part of the arguments of many distinguished Romans against the gymnasium. Habits of idle lounging and waste of time, together with even graver vices, were imputed to its influence. Some said it favored *poly-sarkia*, or obesity, and unfitted for military or other active life. The Romans were too utilitarian to see its higher aims. Though there was some justice, it must be confessed, in these accusations, yet they applied with more force to the *palæstra* than to the gymnasium,—to the trained fighters, who devoted their lives to exercise, than to the mass of the

Greeks, who cultivated it for nobler purposes.

The ancients valued gymnastics highly as curative agents in disease. Some of the gymnasia were dedicated to Apollo, god of physicians. The officers of these establishments passed for doctors, and were so called, on account of the skill which long experience had given them. The directors regulated the diet of the youth, the *gymnastæ* prescribed for their diseases, and the inferiors dressed wounds and fractures. Not only was the general idea entertained that bodily exercise is good for the health, but different kinds of exertion were selected as adapted to particular maladies. Upright wrestling was thought most beneficial to the upper portion of the body, and the cure of dropsy was believed to be peculiarly promoted by gymnastic sports. Hippocrates had some faith in the "motor cure." In some cases he advises common wrestling; in others, wrestling with the hands only. The practice with the *corycus*, or hanging-bag of sand, and a regular motion of the upper limbs, resembling the manual exercise of the soldier, were also esteemed by him. Galen inveighs against the more violent exercises, but recommends moderate ones as part of the physician's art. Asclepiades, in the time of Pompey the Great, called exercises the common aids of physic, and got great glory—and money, it is to be hoped—by various mechanical contrivances for the sick.

The ancients probably esteemed gymnastics too much, as the moderns do too little, for medical or sanative purposes. The Greeks, with a very limited knowledge of physiology and pathology, would be more apt to treat symptoms than to trace the causes of disease; and no doubt they sometimes prescribed exercises which were injudicious or positively injurious. We still trust too much, perhaps, to medication, and do not keep in view the great helps which Nature spreads around us. Truth lies between the two extremes; and we are beginning to recognize the fact, which expe-

rience daily teaches us, that light, air, and motion are more potent than drugs,—and that iron will not redden the cheeks, nor bark restraining the nerves, so safely and so surely as moderate daily exercise out of doors.

In the flourishing days of Attica, the gymnasium was in its perfection. It degenerated with the license of later times. It was absorbed and sunk in the fashions and vices of imperial Rome. Though Nero built a public gymnasium, and Roman gentlemen attached private ones to their country-seats, it gradually fell into disuse, or existed only for ignoble purposes. The gladiator succeeded naturally to the athlete, the circus to the stadium, and the sanguinary scenes of the amphitheatre brutalized the pure tastes of earlier years. Then came the barbarians, and the rough, graceless strength of Goths and Vandals supplanted the supple vigor of the gymnast. The rude, migratory life of the Dark Ages needed not the gymnasium as a means of physical culture, and was too changeable and evanescent to establish permanent institutions. Chivalry afforded some exception. The profession of knighthood and the calling of the men-at-arms gave ample scope to warlike exercises, reduced to something like a science in armor, horses, and modes of combat. The tournament recalled somewhat the generous emulation of the gymnasium; but bodily exercise for physiological ends was lost sight of in the midst of advancing civilization, until its culture was resumed in Sweden, in the latter half of the last century.

The reviver of gymnastics was PETER HENRY LING. Born of humble parentage, and contending in his earlier years with the extremest poverty, he completed a theological education, became a tutor, volunteered in the Danish navy, travelled in France and England, and began his career of gymnast as a fencing-master in Stockholm. He died a professor, a knight, and a member of the Swedish Academy, and was posthumously honored as a benefactor of his country.

While fencing, he was struck with the wholesome effects which may be produced on the body by a rational system of movements, and this suggested the idea which he developed by practice and precept through his entire life. It was, that "an harmonious organic development of the body and of its powers and capabilities by exercises ought to constitute an essential part in the general education of a people." Ling thought not of merely imitating the gymnastics of the ancients, but he aimed at their reformation and improvement. Wishing to put gymnastics in harmony with Nature, he studied anatomy, physiology, and the natural sciences. Of their value in directing rational exercise he says: "Anatomy, that sacred genesis, which shows us the masterpiece of the Creator, and which teaches us how little and how great man is, ought to form the constant study of the gymnast. But we ought not to consider the organs of the body as the lifeless forms of a mechanical mass, but as the living, active instruments of the soul." And even this is not sufficient; "for the gymnast, the ultimate aim of whose art is the *beau idéal* of humanity, must know what effects applied movements produce upon the corporeal and psychological condition of man; a knowledge which can be obtained only from the most careful and untiring examination."

It has been asserted, that, in pursuance of this plan, Ling invented a separate movement or exercise for every muscle in the body. This is not strictly true, for it is practically impossible. Few muscles act alone, and such as do are developed symmetrically, and are antagonized by those of the opposite side. Most movements are performed by groups of muscles. The cripple, swinging on his crutches, develops the broad sheet of muscular fibres which enfolds the back and loins, and approaches in form the simian tribe, the business of whose life is climbing. The sledge-hammer brings out the *biceps* of the blacksmith, and striking out from the shoulder the *triceps* of the pugilist. The calves of the ballet-dancer are noted

for the abrupt line which marks the transition from muscle to tendon; and other instances might be cited. As a general rule, however, numerous muscles act in concert. Trades stamp their impress on special groups; and the power of co-ordination, which is supposed to derive its impulse from the cerebellum, varies in different persons, and marks them as clumsy or dexterous, sure-footed or the reverse. Ling aimed only at the regulation of associated, or the equal development of antagonistic groups. For, as the Supreme Medical Board of Russia say in their report on his system, made to the Emperor in 1850, "empirical gymnastics develop the muscular strength sometimes to a wonderful degree, and teach the execution of movements combined with an extraordinary effort of the muscles; by these means, instead of fortifying the whole body equally and generally, they often contribute to the development of the most dangerous diseases, since they do not teach the evil which the injudicious use of movements may produce." It was the harmonious and equable increase of all the voluntary and some of the involuntary muscles which the Swedish system sought to attain.

The authority just quoted, in continuation, says:—"Notwithstanding bodily exercises under the name of *Turnen* were generally known and practised in Germany at the beginning of the present century, and many of its enlightened professional writers tried to give to them a proper direction by combining them with anatomy and physiology, Ling must be considered as the founder of the rational system of movements." We have all seen deformed gymnasts, with square shoulders and lank loins, or with some particular group of muscles projecting in ugly prominences from the violated outlines of nature. All this the followers of Ling claim that he avoided or overcame. His gymnastics were introduced years ago, not only into all the military academies of Sweden, but into all town-schools, colleges, and universities, and even orphan-asylums and country-schools. Three ob-

jects are asserted to be obtained by his disciples: development of muscular fibre, increased arterialization, and improved innervation. Increase of function promotes the growth and capability of organic structures, and causes an augmented afflux of arterial blood and nervous influence to the part.

The ambitious reformer of the gymnasium did not pause here; but, pursuing a still bolder course, undertook "to make gymnastics not only a branch of education for healthy persons, but to demonstrate them to be a remedy for disease." The new science was called *Kinesipathy*, or the "motor-cure." The curative movements were first practised in 1813, while Ling remained at Stockholm. A motor-hospital was established in connection with the gymnasium; and to accommodate the invalid and the feeble, new exercises, called "passive movements," were devised. These were executed by an external agent upon the patient,—that agent being usually the hand of the physician. The sick man, too weak for violent, voluntary effort, was stretched and champooed, the muscles of his trunk and limbs alternately flexed and extended by another person, until he gradually acquired strength to use active movements. As he gained power, he increased the voluntary resistance which he made to the operator, and thus, at the same time, the amount of his own muscular exertion. It is claimed that volition is thus called forth to neglected parts, and their innervation and vascularity increased; and that so at length the normal fulness of life and function is restored. This system confines itself mostly to chronic diseases. In the paralysis of the young, in defective volition from hysteria, in impaired local nutrition, in local deformities dependent on muscular contraction, and in lateral curvature of the spine, it unquestionably often produces the best results. Its advocates claim for it much more. On its further benefits we are unable to decide. Like all things else, it is susceptible of abuse.

Russia and Prussia have adopted, to a limited extent, the Ling system of corporeal training and the "motor-cure." In London there exists an institution of this kind, and more recently one has been established by the Doctors Taylor in New York. In a still less degree the Swedish gymnastics are used in some educational institutions here.

Ling died in 1839, in his seventy-third year. Even on his death-bed he spoke till the last hour, and gave instructions in his favorite science. His life is a remarkable instance of purity, energy, and devotion to a single end.

Meanwhile, what have modern nations done to atone for the neglect of the ancient gymnasium? Germany, to some extent, has supplied its place with the *Turnverein*. *Turnkunst*, or the gymnastic art, is cultivated by a limited number of youth. As we see the public exhibitions of the *Turners* in this country, they are as noted for their libations to Bacchus, and their sacrifices to the god of tobacco,—a deity still wanting in the Pantheon,—as for their culture and superiority in athletic sports. Still they exert a wide, and, for the most part, a good influence. Other continental nations of Europe furnish a large portion of their young men with the gymnastic element in the shape of military discipline and drill. As affording the best examples of martial training, Prussia and France are to be signalized,—the former for the universality, the latter for the kind of its instructions.

All young Prussians are liable to a call to actual service in the army for three years. After this, if they do not continue members of the regular standing army, they remain until a certain age in that portion of the active force which is mustered and drilled every year. Past the age referred to, they fall into the corps of reserve, a sort of National Guard of veterans, summoned to the field only in emergencies. Young men who have the means to purchase an immunity can obtain one for only two years. One year they must serve, parade, drill, march,

and mount guard, though they are not required to live in the barracks. Occasional cases of hardship or injustice occur. We know of a poor, but promising pianist whose studies were cut short and his fingers stiffened by the three-years' service. Leaving out of view exceptional facts, the system works well. All the youth of the country acquire health, strength, an upright carriage, and habits of punctuality and cleanliness. The clumsy rustic is soon licked into shape, and leaves his barrack, to return to the fields, a soldier and a more self-reliant man. Prussia, too, secures the services of an army, in time of need, commensurate in numbers with the adult male population.

The French conscript, if he draws the unlucky number, can buy a substitute. All are not enrolled as recruits; and all those so enrolled are not obliged to serve. The only sons of widows, and some other persons, are always exempt. Once in "the line," however, the young man is engaged for five or seven years, and receives a training in matters gymnastic and military which turns out the best soldiers in Europe.

Little would one imagine, as he passes the groups of dainty and scrupulously neat French officers upon the *boulevards*, looking the laziest persons in the world, that these seeming carpet-knights are out upon the *Champ de Mars* at three o'clock in the morning, and often drill until nine or ten in the forenoon,—or that the little *toulourou*, as he is nicknamed, or private of the *ligne*, in his brick-colored trowsers and clean gaiters, whose voice is the gayest and whose legs are the nimblest in the barrier-ball, has done a day's work of parade and gymnastics which equals the toil of an *ouvrier*. Running, swimming, climbing, and fencing with the bayonet, are often but the preludes of long marches on duty, or equally long walks to reach the parade-ground, or to fetch the daily rations of the "mess." Then, too, during several months of summer, camp-life is led on a grand scale. Vast encamp-

ments, which for size, regularity, and order vie with the old Roman *castra*, are formed at convenient spots. And here all the details of actual service are imitated; cavalry and infantry are disciplined in equally arduous labors; nor does the artillery escape the fatigue of mock-sieges, sham-fights, and reviews.

The *Chasseurs de Vincennes*, or rifle-corps, are the pride of the army. Their training is still more severe. They are all athletic men, taught to march almost upon the run, and to go through evolutions with the rapidity of bush-fighters. There are few more stirring sights than a French regiment upon the march. Advancing in loose order, and with a long, swinging gait, their guns at an angle of forty-five degrees, lightly carried upon the shoulder, they impart an idea of alertness and efficiency which no other soldiers present to the same degree.

Gymnasia are somewhat patronized by the civilians. The art of fencing is a national accomplishment, and few gentlemen complete their education without the instructions of the *maître d'escrime*. The *savate* is a rude exercise in vogue among rowdies, and consists in kicking with the peasant's wooden shoe. The French are a tough, but not a large or powerful race. The same amount of training dispensed among as large a proportion of the youth of this country would show much greater results.

The British soldier has long been considered by his own nation as a model of manliness. He owes his long limbs and round chest to his ancestors and his mode of life before enlisting. While on the home-service, he does not yet exercise enough to harden him or to ward off disease. Recent returns show a higher comparative rate of mortality in the British army from consumption than among other Englishmen. His close barracks, unvarying diet, and listless life explain it all. His countrymen and countrywomen, however, who have the time and means, largely cultivate athletic sports. The English lady is noted for her long walks in the open air, and for the pres-

ervation of her youthful bloom,—the English gentleman for his red face, broad shoulders, and happy digestion.

How do we compare with them in vigor and attention to gymnastics and health-giving exercises? Better than we did ten years ago, but still not very favorably.

The Western Border-States are noted for the production of a large and hardy race. New Hampshire and Vermont contribute a good share of the tall and well-developed men who yearly recruit the population of our Eastern cities. Let a generation pass, however, and we find the offspring of such sires with equally capacious frames, but far less muscular power. The skeleton is laid of a man mighty in strength, but the filling-in is wanting. Broad-jointed bones swing listlessly in their sockets, the head projects, and the shoulders bend, under the influence of a sedentary life. The laboring and mechanical classes bring certain groups of muscles to perfection in development and dexterity, but present few instances of an harmonious organization. Commercial and professional men do not accomplish even a limited muscular development. For the other sex, Nature seems to have provided a certain immunity from the necessity of active exercise for the rounding and completion of their bodies. The lack of fresh air, however, soon tells with them a fatal story of fading complexions and departing bloom. That ethereal beauty which peculiarly marks the American woman is also the earliest to decay. As they are the prettiest, so are they the soonest *passées* of any Northern nation. Could they but realize that exercise in the open air is Nature's great and only cosmetic, the reproach of early old age would cease. Nothing will give that peach-bloom to the cheek and that peculiar sweetness to the eye which a long walk through the fields, of a clear October day, bestows unbought.

One evil breeds another. The brain fed only with thin blood gives rise to morbid thoughts. Activity, sharpness,

and quickness of perception are but poor compensations for the want of the milder and more generous attributes of the mind. Dyspepsia spawns a moody literature. Broad, manly views and hopeful thoughts of life exist less here, we think, than in England. The cities are supplied year by year with people from the country; yet the latter, the source of all this supply, does not produce so healthy mothers as the city; and were it not for the increasing study of physiology and its vital truths, we fear that we should awaken too late to a knowledge of our physical degeneration.

Now what means are in use among us to furnish the needed stimulant of exercise? It is paradoxical to say that the average of people take more exercise in the city than in the country; yet we believe it to be true. That exercise is only of one form, to be sure, namely, walking. The common calls of business, and the mere daily locomotion from point to point of an extended city, necessitate a large amount of this simplest exercise. Other sources of health, as sunlight and the vivifying influence of trees and grass upon the air, exist more in the real country. Yet as many girls attain a vigorous development in town as out of it; for in our smaller New England villages indoor cares and labors confine the females excessively and prevent their using much exercise in the open air.

Our militia system, including the exercises of volunteer companies, supplies but to a very limited extent the want of real gymnastics. The common militia meet too infrequently and drill too little to gain much sanative benefit. The old-fashioned "training-day" was always a day of drunkenness and subsequent sickness. The "going into camp" now adopted is even worse; for here youths taken from the sheltered counting-room and furnace-heated house are exposed to the inclemencies of the weather not long enough to harden them, but long enough to lay the foundation of disease. Volunteer companies parade and are reviewed oftener, and drill more constantly; but

the good effects of the manual exercise are rendered nugatory by its being conducted in confined armories and a bad atmosphere.

The frequency of conflagrations and the emulation of rival volunteer corps render the fire-companies an active school of exercise. But the benefits of this are neutralized by the violence and irregularity of their exertions. Quitting the workshop half-clad, and running long distances, the fireman arrives panting at the fire, to breathe in, with lungs congested by the unusual effort, the rarefied and smoky atmosphere of the burning buildings. We should naturally suppose this a fertile source of pulmonary complaints. Besides, were it the most healthy of exercises, it is followed only by the mechanic and the laborer, who use their muscles enough without it.

The "prize-ring" and the professed athlete still exist among us. Unfortunately, their habits brutalize the mind. A limited knowledge of sparring, and a full vocabulary of the slang of the pugilist, are fashionable among many youths. Few young men, however, can cultivate the one, or frequent the society of the other, without the risk of becoming rowdies or bullies, if nothing worse.

The revival of the Old-Country games of cricket and base-ball affords some of the best examples of a growing desire for athletic sports. They have many things to recommend them, and, as we conceive, no objectionable features.

The suicidal war waged against trees and birds alike by the early settlers has left but little inducement to follow in this country the field-sports so fashionable in England. Riding on horseback, however, is now more popular than it has been since our carriage-roads were first laid out. This exercise is peculiarly beneficial to the feeble in body. Accelerated inspiration of pure air and a gentle succession of all the internal organs are blended with that consciousness of power and that self-dependence which the good horseman always feels in the saddle. Hardly less do we val-

ue the intimate acquaintance into which it brings us with the noble animal who bears us, establishing a sympathy which no amount of driving can awaken to its full extent.

Our rivers, lakes, and bays spread around us a vast and inviting field for the cultivation of summer or winter sports. Boating and sailing are adapted, from their gentleness of motion, even to the most delicate organizations. Rowing is equally suited to the young and strong. Boat-clubs are quite popular in our colleges, and we hope they will ere long become so in our academies and minor schools. Few exercises bring more muscles into play than the steady stroke of the oar. Few are more exhilarating and pleasant to those who have tried them. Give us the strong pull through an open bay before all boating on placid lakes or rivers. The long, well-timed stroke becomes a mere mechanical effort, leaving the mind at liberty to enjoy the sense of freedom, the tonic salt-breeze, and the enlivening scenes of the sea.

When the boats are beached, and the wharf-logs grow, with successive layers congealed from every tide, into huge spindles of ice, the same element offers its glassy surface to the skater. That skating has actually become fashionable among the gentler sex we regard as the strongest indication of an awakening national taste for exercise. But there is need of caution. Most persons skate with too heavy clothes. The quick movements of the limbs in the changing evolutions of this pastime—though the practised skater is unconscious of much muscular effort—quicken the circulation enough to increase palpably the animal heat and produce a very sensible perspiration. In this exposed condition, the quiet walk home is taken without additional covering, and is the origin of many colds.

Returning to "first principles," we find one useful exercise more or less within reach of all, without preparation or expense. We mean walking. The flexors and extensors of the legs, the broad muscles of the back and abdomen, and

the slender and intricate bundles of fibres which support and steady the spine, are all gently exercised in locomotion. The respiration and circulation are moderately increased, and the blood aerated with fresh air. And all this can be had by simply stepping out of doors and setting in motion the muscular machinery, which moves so automatically that we soon become unconscious of its exertions. This, like all other exercise, should be taken at seasonable hours. We enter our protest against long walks before breakfast. To any but the robust they are positively injurious. The early riser and walker, unless long habituated and naturally vigorous, returns from his exercise dragged, faint, and exhausted, to begin the digestive labors of the day, and take his food with hunger rather than appetite. Abstinence has blunted the nicer perceptions of taste, and the jaded organs lose the power not only of discriminating flavors, but of knowing when to cry, "Enough!" "Brushing away the morning dew," like "love in a cottage," is very pretty in a book, but needs a solid basis in the stomach or in the larder.

Running is a very healthy and an equally neglected exercise. Few vocations call upon us to fully expand the chest once a month. Running improves the wind, it is said. We give the name of long-winded to those who have a reserve of breathing capacity which they do not use in ordinary exertions, but which lies ready to carry them through extraordinary efforts without distress or exhaustion. Such persons breathe quietly and deeply. Running forms part of the training of the prize-fighter. It should be begun and ended at a moderate pace, as a knowing jockey drives a fast horse; otherwise, panting, and even dangerous congestion, may arise from the too sudden afflux of blood to the lungs.

Nothing so pleasantly combines mental occupation with bodily labor as a pursuit of some one of the natural sciences, particularly zoölogy or botany. If our means allow a microscope to be added to our natural resources, the field of exercise

and pleasure is boundlessly enlarged. To the labor of collecting specimens is joined the exhilaration of discovery; and he who has once opened the outer gate of the sanctuary of Nature finds in the study of her *arcana* a pastime which will be a joy forever.

Our larger towns and cities still support gymnasia of greater or less size and perfectness. But the modern gymnasium has two great deficiencies: the lack of open air, and of the emulation arising from publicity. The first is a very grave objection. Not a tithe of the benefits of exercise can be obtained within-doors. The sallow mechanic and the ruddy farmer are the two points of comparison. The one may work as hard and be as strong as the other, and yet we cannot call him as healthy. Nothing short of Nature's own sweet air will supply the highest physical needs of the human frame. As our gymnasia are usually private, and only moderately frequented, the gymnast is not stimulated to those exertions which society and competition would arouse. *Ennui* often mars his enjoyment. We have seen men methodically pursuing, day after day, the same exercises, with all the listless drudgery of a hack-horse. Geniality and generous emulation are among the great benefits of the true gymnasium.

"But how shall I find time to follow out even one of these exercises?" objects the victim of American social life. It is true, he cannot. We live so fast that we have no time to live. Nevertheless, gymnastics have one advantage adapted to our hurried habits. They afford the most exercise in the shortest time. In no other way, so easily accessible, can as much powerful motion be used in so brief a space.

The tired clerk or merchant comes home late, with feverish brain and weary legs. His chest and arms have had no exercise proportional to the rest of his system. What shall he do to restore the balance? If he can, let him erect in some upper room, away from furnace-heat, instead of a billiard-table,

a private shrine to Apollo or Mercury. He will need but little apparatus. A set of weights and pulleys, a pair of parallel bars, two suspended rings, and a leaping-pole are all the necessary permanent fixtures. Other articles, as the dumb-bells, the Indian club, boxing-gloves, foils, or single-sticks, take up no room, and can be added as his growing taste for their use demands. We would single out the parallel bars and the weights as the most generally useful. The former develop particularly the chest, stretch the pectoral muscles, and lengthen the collar-bones. The latter increase the volume and power of the extensors of the shoulder, arm, and forearm, and are to be sedulously practised, because we have fewer common and daily movements of these muscles than of their antagonists, the flexors, and they are consequently weaker in most persons. The windows should be widely opened, and the room warmed by the sun alone.

Though, after the first few trials, the whole body will ache, and the astonished

muscles tremble with soreness, a week's perseverance will overcome these earlier drawbacks. The gymnast will be surprised at the new feeling of vigor in the back and shoulders, and to find the upright, military posture as natural as it was before difficult to maintain. Temper and digestion undergo a parallel improvement, and it will require much to make him forego the luxury of exercise which he at first thought so painful.

Many persons become discouraged by beginning too violently. Alarmed at the fatigue and suffering at first induced, they shrink from further efforts. Gymnastics are, to be sure, an injudicious mode of exercise for some. Children get a good many sprains, and sometimes permanent deformity, from their use. The growing period requires care to avoid injuring the articulations; yet it is the most favorable time to spread the shoulders and deepen the chest. The young grow most in height and can best gain an harmonious development by frequenting the GYMNASIUM.

WHY DID THE GOVERNESS FAINT?

WE were all sitting together in the evening, and my sister Fanny had been reading aloud from the newspaper. For my father's benefit, she had read all the political articles, and all about business, till he had said he had heard enough, and there was nothing in the papers, and then had left the room. So Fanny looked over the marriages and deaths, and read about the weather in New York and Chicago, and some other things that she thought would interest us while we were sewing. Suddenly I looked up, towards where Miss Agnes was sitting, far away at the other end of the room. She was leaning back in her chair, and, all in a moment, I thought she looked white, as

though she had fainted. I did not say a word, but got up and went quietly towards her. I found she had fainted quite away, and her lips were pale, and her eyes shut. I opened the window by her; for the night was cool, and all the windows were closed. There came in a little breeze of fresh air, and then I ran to fetch a glass of water. When I returned, I found Miss Agnes reviving a little. The air and the water served to refresh her, and very gradually she came back to herself. As she opened her eyes, she looked at me wonderingly, then round the room,—then a shudder came over her, as if with a sudden painful memory.

"I'm better,—thank you for the wa-