Gymnastics, an essential branch of national education, both public and private : the only remedy to improve the present physical condition of man / by Captain Chiosso.

GYMNASTICS,

AN ESSENTIAL

BRANCH OF NATIONAL EDUCATION,

BOTH PUBLIC AND PRIVATE;

THE ONLY REMEDY TO IMPROVE THE PRESENT PHYSICAL CONDITION OF MAN.

BY CAPTAIN CHIOSSO,

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"The only malady inherent in the human frame, is the decay of old age."—*Boerhaave.*

"On seeing the sufferings of some of the people around me, I began to entertain a doubt, whether such pangs and agonies could be considered as intended for humanity by the Omnipotent."—*Public Meeting, Willis's Rooms*, 1851.

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PREFACE.

Having been led, by my former military career, and subsequent professional occupations in this country, to the consideration of GYMNASTICS, and its vast influence on the HEALTH and well-being of man, many of the ideas contained in the following pages became developed in my mind, and fixed on paper as time and occasion would permit. Successively, pupils and friends gathered round me, who, more versed in literary composition, arranged them in a systematic form, favoured me with extracts from important works, and corrected a foreign style into a more idiomatic English. Thus arose this little work, which, I trust, will be received with the same candour and kind feeling, with which it is hereby laid before the public.

JAMES CHIOSSO.

ACADEMY, 21, NEW ROAD,
Corner of Gower Street, University.
London, Feb. 2nd, 1854.

GYMNASTICS,

AS AN

ESSENTIAL BRANCH of NATIONAL EDUCATION.

INTRODUCTION.

If any individual may venture to pronounce on the destination of his kind, it would appear, after all, that man is *not* destined to live in a state of perfect bliss and *happiness*—a state reserved, probably, for some higher evolutions of cosmic existence. Still, if we take even the humble standard of the animals of a higher order, such as the domestic and wild animals around us, we perceive, that they pass their lives in a *state of contentment*, viz., an exemption from any disproportionate uneasiness, pain and suffering. Thus, comparing this position of the merely animal world with that of *present* humanity, it would appear that, at an average, ours may be an inferior lot. All over Europe, hospitals begin to be amongst the largest, if not the very largest, edifices of our cities, and in Paris every tenth person dies in the hospital. Man has to endure cures and still more operations, at which human nature shudders, as they surpass what in ages past was called *torture* and *martyrdom*. However humiliating it be to an age, a nation, or an individual to acknowledge their inferiority, there can be no doubt but that the physical condition of present mankind is one very inferior, not only to that of ages long past by, but even to what it used to be half a century ago.

If we examine the remains of human bodies which have reached us in the shape of Egyptian mummies, we may

conjecture that their whole physical type was different and superior to our own, from the single fact, that although many of the teeth in those skeletons are worn out by usage, not one single decayed (carious) tooth has been discovered; whereas at the present time, in this metropolis alone, two millions of teeth are extracted every year; some of the operations implying cases most painful and dangerous. Amongst the numberless implements of the Egyptians, which also have reached us, nothing resembling a surgical instrument has been found—all which proves a high degree of vitality and salubrity appertaining to that nation. If we direct our attention to the written records of man, the old Testament contains sufficient evidence, that at that period the human species enjoyed a degree of bodily health and vigour, far exceeding that of our present time. That Moses, and other Patriarchs, died at an advanced age "in the mount," viz., in the open air; and with all that bodily capacity, necessary for reaching such places, shews at any rate, that their end was a placid extinction of the flame of life, compared to the almost ceaseless pangs and ailments connected with death, even at a much earlier period in our present times. It was the ambiguous refinements of the Greeks, which seems first to have called forth a series of ailment and illness, against which their wise and learned endeavoured to contend—still, with remedies and expedients, mostly lenient and mild. What is the Pharmacopæia and the Armamentarium of Hyppocrates, or even Galenus, compared with those deadly poisons and horrid appliances of present medical science? When, subsequently, the first physicians came from Greece to Italy, the people of the latter country, strong in their primordial innocence and vigour, saw no occasion for medical aid, and expelled its votaries out of their land. The Circus, the Palæstra, such sayings, in fine, as "nec legere scit nec natare," preserved, in those times, men from the snares of bodily inactivity and debility. In the middle ages, some cosmic,

and to us, unknown influence, as well as the conflict between modern civilization and barbarism, engendered maladies and plagues of a fearful extent and malignity; still, it was not until after the discovery of America, that new maladies were introduced thence, which spreading and diverging into collateral and secondary diseases, have greatly shaken the physical constitution of mankind, and created and brought forth an innumerable host of ailment and malady, the very classification of which baffles the logician and nosologist--subjects, however, too gloomy and dire to be broached in this popular essay. We are well aware that, according to that complacency most people feel in their general position, even the physical condition of present European mankind has been praised and extolled. The simplest train of argument is able to dispel this assertion. If we reflect, for instance, that many a tolerably civilized people, like the Persians and Turks, possess no hospitals, we may just imagine what would be the case, if in any of our large cities the numerous inmates of hospitals and asylums had to remain in their homes; which would in fact occasion a disruption of the whole social condition of the poorer classes. The number of persons afflicted by *avoidable* diseases also, as those labouring under phthisis, scrofula &c., shew that there is something very weakly and invigorous in the constitution of present mankind.

This assertion has been controverted by those, who always like to delude themselves as to their own state, or those around them. It is said, for instance, that some of our present men could still wear the armour of the Crusaders. They might do so for one hour or two, but we have to consider that our forefathers rode or walked full mailed in such lengthy campaigns as those of the Holy Land, a feat which scarcely any one could now accomplish. At some of the military manœuvres, held a couple of years since in Paris, the streets looked, at their conclusion, like they would after a battle; exhausted, fainting soldiers

being seen dragging themselves about; some had to be conveyed home in cabs and fiacres. In Germany, where military enlistment is compulsory, books have been written on the considerable falling off of young men fit for the army. But let us pass from those classes of men to those of other pursuits. We now continually discuss the warming and the ventilating of churches and chapels, but such a thing was never thought of, when Westminster Abbey and York Cathedral were erected; none thought of it, because no one ever felt the necessity for it. Another homely exemplification exists in the very dress of our times. How many persons could, now-a-days, endure the wearing of shoes and stockings, short breeches up to the knees, single-buttoned dress coats, all that made of velvet, or some light fancy material. These are plain matter of fact examples, against which *statistics* are of no avail, because the solitary cases of high-aged people of this time only shew what civilization *will* do, *if* its advantages be not *abused* and turned to bad account.

If we consider the life of our middle and humble classes, it is one of great effeminacy and perversion. The wealthier go from their desk or counter to their dining-room, or tea-table or fire-side, day by day, year after year. Perhaps our forefathers did as much—*but* they did not then use such a quantity of stimulants and narcotics (tea, coffee, tobacco, spices &c.); which, it cannot be too often repeated, *if* they are to be used, require a counterpoise, or counter-agent and antidote to neutralise them; and the best and easiest of these is certainly muscular exercise.

If we consider the humbler classes, it will be said, that *they* surely have plenty of muscular exercise. Some, surely have, and those we find amongst the farmers and farm labourers, the woodmen and foresters, the fishermen and mariners, the sawyers, butchers &c., the healthiest men of the land. It is this class of people which constantly revivifies and restores our large towns, and supplies them with

sturdy and vigorous men and women, to perform the work of the enervated townspeople. But many other trades afford no general exercise and usage of the muscular system, and in many cases add to this the working in confined, overheated, and damp localities. Shoemakers, tailors, sempstresses, and all sedentary trades, are those where muscular power is either absolutely kept in abeyance, *or* where only a few and a restricted number of muscles are used. The ailments and mortality amongst these classes of society are appalling. Hospitals, infirmaries, dispensaries, asylums &c. are certainly very fine specimens of the philanthropy of present mankind; but their excessive number—the many cases beyond remedy—prove, that a move in another, an *hygieistic* direction, is also necessary.

This may, and can be attempted in a variety of ways; by a diatetic regimen, temperance and moderation—in fine, with the humbler classes, by cleanliness, salubrious food and habitations. Still, there will be neither basis nor solidity in these endeavours, if a system of muscular exercise be not added thereto. Under these circumstances we have considered it our duty to contribute our share towards bringing this subject once more before the eyes of the public. The endeavours of Captain Clias in this country, more than thirty years ago, have had perfect success, and it is to be regretted that they have not been continued. Having divested gymnastics of all its anomalous and hazardous features, and reduced it to the simplest formula, viz.: "a most guarded and gradual, yet persevering and energetic exercise, and consequent development and strength of the muscular system"—we trust that all those puny and puerile objections, occasionally raised against it, will disappear. Nevertheless, time will show, one way or other, that *this* movement of our age is the most important, and greatly deserves the attention of those persons whose lot it is to rule and direct their fellow men.

THEORY OF GYMNASTICS.

Every thing done and performed by man is, after all, but an imitation of nature, whose contrivances are most systematic and co-ordained to each other. Thus, man in *the state of nature*, or the outset of civilization, is obliged to seek his food in the forest, the river, the ocean; subsequently he plants the field, the vineyard and orchard; he builds his hut, makes his own garments &c.; and all these different occupations *imply* also (most wisely) the due exercise of his limbs, muscles and senses, and thereby assist and invigorate digestion, respiration, and the whole wonderful complex of the organism. Successively the rich, powerful, and mighty exempt themselves from these wholesome occupations, and employ their time either in idle luxury, or the affairs of the State, study &c. Still even here the chase, the hunt, or the ride, make up for the want of the former occupations. But when civilization has reached so far as to confine millions of people either to the writing-desk, the counter, or the workshop, excluding them almost completely from even the merest *passive* exercise, and the breathing of fresh air—then, of course, the very poles of human destination, as a physical being, become inverted, and nature, assailed and, as it were, provoked and scorned, avenges the transgression of her holy dictates, and showers upon poor deluded humanity that host of evils and ailments our poorer classes are now afflicted with.

But by resigning ourselves to the disuse of our physical power—we mean, by letting them remain idle and dormant—we violate both the laws of nature and those of religion, because it is one of the very first sentences contained in the Holy Writ, that "in the sweat of thy face shalt thou eat bread,"—a sentence which, like most others, must be understood and applied with discrimination, still

warning every one of us not to pursue a life of mere idleness or self-indulgence. If we refer to the axioms and principles of other religious systems, we will find that the great Chinese lawgiver, Con-fut-see, enjoined his disciples "never to indulge alone in mere study and mind-occupation, but to learn a *mechanical* trade, by which he might also co-operate in the material concerns of society." J. J. Rousseau, one of the most independent and unprejudiced men who ever lived, had his pupil *Emile** instructed in the trade of a cabinet-maker, not only as a mere dilletante, but to that degree that he might be able to earn his bread by it. A similar most wise and deeply calculated sentiment pervaded the education of several of the former reigning houses of the Continent, as it is known that Louis XVI. acquired the trade of a cabinet-maker, Joseph II. of Austria that of a locksmith &c. And we may interpolate on this occasion, that there can be no doubt but that the directing of our thoughts and activity to ought *external and physical*, be it to gardening, hunting, fishing &c., will be the best preservation against those numerous instances of misanthropy, melancholy and hypochondry, and the other host of mental and nervous diseases which afflict present mankind. "*Gymnastics*, however, if systematically and cleverly arranged and practised, include all salutary exercise and activity of the body, comprised within the smallest limits of space and time for practice." Thence it follows that the agriculturist, the gardener, the huntsman, woodman, and the fisherman, being nature-occupations, moreover practised in the open air, require *no aid of art*, as by a wise and deep pre-ordainment of nature, all these primordial occupations comprise all the motions necessary and useful for the general development of the vigour of the human frame. But there are also several *trades* so comprehensive in their employment of physical force, that they also require *no aid* of art for imparting health and vigour

* Vide his work, "Emile ou de l'Education."

to those who practice them.* Such are all sorts of cabinet-makers and carpenters, blacksmiths, millers &c. &c., all which may be comprehended within the term of non-sedentary trades and occupations. We repeat, there are only those classes of men who, on their own account, and by their occupations, develop and constantly invigorate their muscular system, and by that beneficially influence the whole complex of the human organism.

As we do not wish to be ranged amongst those who advocate any cause *a l'outrance*, we will still confine the circle of persons, to whom gymnastics *may* not be absolutely necessary; and these are those, who by the gift of an unexpugnable constitution, by great temperance and moderation of their animal propensities, or some very favourable and judiciously-regulated circumstances of their mode of life, or from several of these causes—there are some, we say, who may not absolutely require the use and help of artificial bodily exercise. Amongst such we may reckon Sir Christopher Wren and Titian,† who both attained the high and healthful age of 92 years; such was Goethe, who died, and Alexander Humbolt, who still lives, at the age of 84. Of the two latter, however, we may say nevertheless, that they belonged, after all, to that class of men we may call nature-men. Humbolt passing several years of his life amongst the freshness and splendour of tropical nature; Goethe, in fine, a man on whose life, even physically considered, a useful treatise might be written; busying himself from a child in his grandfather's garden; a skater then of considerable skill; a bather in the Swiss lakes in 1768—then, to the scandal of a punctilious world; a wanderer on foot and horseback, through the Harz and the Swiss Alps, in winter; strolling all over Italy during two

* This assertion in both cases implies only the state of perfect health. In illness, as a matter of course, some or other aid of art becomes necessary.

† Speaking of a mediæval artist, we have not to forget, that others are *recorded* as having practised and excelled in one or another kind of bodily exercise; such was Michael Angelo Buonarotti, very expert in the use of the small sword, and several others

years; riding in company of the Duke of Weimar a race from Liepsic to the latter place &c.; all which shews that Goethe well knew the importance of bodily life and exercise, his life being a constant course of gymnastics, both natural and artificial. Thus he lived to the age of 84, and died in his arm chair, occupied the day before his death with a review of *Lacepède's Anatomie comparée*—altogether a great example of human wisdom and intellect. Although not Goethes in their minds, many of the aristocracy (especially amongst the English) attain also, spontaneously, a very high and healthful age. We say spontaneously, without any systematic and artificial aid of gymnastics. Surely, they do. But, if we inquire into the life of such persons of both sexes, we shall find, that they were either passionate sportsmen, hunters, fishermen, or gardeners and agriculturists, swimmers or bathers, yachters, travellers and tourists, early risers and so on—all these being species of nature-gymnastics and nature-life, to say so, to which more or less they were led accidentally. But the purport of gymnastics, as a science and a practice, is to lead men *conscientedly* to a systematic use, exercise, and development of his physical powers and organs—and to arrange these exercises so, that they may be accessible and suitable to every sex, age, condition in life and state of health.

SYSTEM AND DIVISION OF GYMNASTICS.

Gymnastics, as a science and practice, may be divided threefold:—

1. *Genetic or Nature-Gymnastics.* According to this appellation, gymnastics ought to take up the child, as it were, *from the month*, and lead it through wisely arranged processes and exercises, to the very verge of an old and healthful age. The above expression may be controverted, but may, after all, be near the truth. If we observe a healthy, vigorous child, a few months old, we shall find it very often making use of its arms and legs during a considerable period of its waking hours. Here is the first symptom of a wise and beneficial nature-law, laid down instinctively in all higher animal organisms. From the unconscious movingness of the infant, there is but one step to the incessant and at times troublesome liveliness of the child. If we could compute the movements, strolls, runs, climbings and plungings, of healthy boys in the country, we should be astonished at the *amount* and *variety* of muscular motion and exercise they imply.

But we have also to remember here, which will hold good for the whole range of gymnastics, how much these exercises, while they improve the body, imply also the exercise of the senses, sight, hearing &c., and thus effect that superiority of animal perfection, so to say, which we admire in nature-men, be they savages or from the ranks of civilized life. The examples of the acuteness of the senses and perfection in savages are really astounding; they see (perceive) footsteps and traces in the sand or soil quite evanescing to the refined European. The New

Hollanders will know whether any of their small quadrupeds have recently ascended the trunk or branches of a tree. This superior development of the body and the senses can be made, in fine, the basis of superior mental and moral acquirements. We need not, however, to expatiate any further on genetic gymnastics—the life of nature-man, alluded to in other parts of this work.

The second division of Gymnastics, is that of—

2. *Educational, or Hygiene Gymnastics*, which comprise the science and practice of physical motion, for the sake of bodily exercise, development and strength.

Although we have stated that, it is a characteristic of genetic gymnastics to take the babe up from the month, as it were, we have to add in this place, that *educational* gymnastics ought to approach this idea as close as possible. It appears insanity to think, that while the child of the most tender age is *learnt* to read, and so on up to his maturer years, every day is considered lost where any mental (moral?) acquirement is not imparted to him—the body, that indispensable substratum and principle of the thinking faculties is completely neglected, and considered as an adventitious and extraneous object without any value, and not worth thinking of. And if in the beginning of this Essay, we have mentioned the tortures and torments present humanity has to submit to under the hands of their healers, this may, after all, be considered as a just (unavoidable) consequence and retribution of the neglect hitherto observed in regard of physical education and gymnastics.

In this respect the Salles d'asile, and the children's gardens of Madame Herz, at Dresden, are of deep importance. The children of the humbler classes ought not only to be taken care of during the many working hours of their parents, but the germ of a robust constitution ought to be laid in large halls, or courts and gardens, where the youth can first work out and spend that physical power, which,

when confined within them and left dormant, will burst forth in vices and vicious habits, which now undermine our whole generation, from the palace to the cottage and cabin. In this respect, we also advocate a reform of our toys, and the substitution of our present meanless and senseless playthings for others of a superior character. We advocate the introduction of heavy toys, a sort of industrial gymnastics, to which other educational purposes might be superadded. Then, the further steps of bodily exercise our wealthier youth may make, at the many gymnasiums scattered even now over the land, while the humbler classes will have access to the public playgrounds, whose introduction throughout the land, we have advocated under a separate head.

The third class of Gymnastics, is that of—

3. *Medical, or Therapeutic Gymnastics,* whose various and rather complicated contrivances are resorted to in several particular cases, where health has become materially injured to that degree, that whole systems of organs and functions have been impaired and deranged. This class of gymnastics, called by its modern inventor (resuscitator?) the Swede, M. Ling, *Kinesitherapy,* will be treated under a separate head in the ulterior pages of this work.

HISTORY OF GYMNASTICS.

The invention of and resorting to gymnastics presupposes a rather advanced state of *social refinement*, what is generally called civilization—it mostly indicates, in fine, a preceding entire dereliction of nature-life by man. Its re-appearance amongst us, at the present time, is caused by hygeistic considerations, somewhat different from those of ancient times, when it was rather a matter of amusement, policy, and even public worship. It appears, however, after all, that mere *nature-life* (of the savage or barbarian) does *not* necessarily lead to perfect bodily vigour, or development. The skeleton of the *Botocudo*, an aboriginal of the Brazils, preserved in the Anatomical Museum of Berlin, presents but a very inferior state of bodily perfection, the teeth especially being of the worst possible kind. *Martius* believes, that these South American tribes belong to an exploded and dispersed race of primordially civilised humanity. The only human tribes, which have, perhaps, for ever remained *in situ*, are the black Africans—certainly, in the main, the highest ideal of bodily human perfection; of some nations of which, French slave traders say, that they resemble the bronze statues in the gardens of the Tuilleries, at Paris. Being so nearly akin to these primordial and innocent races of men, the Egyptians do not seem to have concerned themselves about any artificial development of their physical power. Men who quarried, cut and conveyed those immense colossi, then adorning the banks of the Nile—the builders of the Pyramids, did not require any *adventitious* aid for the health and strength of their bodies. Still, some trace of hygieistic or gymnastic performances existed without doubt, in their secret rites and public religious processions &c. When these were subse-

quently transferred to Greece, under a sky more temperate and serene, amongst a race less solemn and stern, the Eleusian mysteries, and the great Olympian, Isthmian, Nemean and Pythian games and national festivals, took up their place. As soon as the character and the results of a solemn religiousness were given up, other agencies had to replace them, and these were the games and feasts of their young men and women. Nothing can prove more adequately the importance which antiquity attributed to the strength and vigour of the body, than the fact that their athletæ and gymnasists participated in the contentions and struggles of their orators and historians. If no other more abstract consideration, the splendid development of the above set of men, must have induced others, even the men of contemplative and studious habits, to follow such examples; and thus we find Plato, Plutarch, Lucian, and other greatest writers of antiquity, among the advocates and votaries of gymnastics.

Sobered down, like everything else, were the games and festivals of the Romans, whose constant wars, however, served them as a substitute for the more systematised and peaceful performances of the Greeks. Up to that time, also, and long afterwards, the social and domestic life of man was one more hardy, natural and normal. When we know, that the Romans even, at least those of the humbler and middle ranks of life, knew neither of bedrooms, nor even beds; that they wore no under-clothes, we shall perceive, what deep difference of constitution and health there must have been, between them and us. And thus we arrive at the middle ages, where the wolf and the wild bear still disputed with man the posssession of the forest, and made the hunt a necessary ingredient of social existence. Their constant strifes and feuds and contentions, also maintained an active nature-life amongst men—whose imitations even, the tournament, the archery-ground &c., kept the people in the wide open air. Luxury they knew

none, and the kings of England inhabited sheds or huts, where the sparrow passed through on his precipitate flight, during inclement seasons. The artizan and labourer were not yet crowded in murky, dark, airless hovels, but ranged over the wide open expanse, surrounding their tenements; the forest, the beach, the banks of rivers and creeks, belonged to their children, thus hardening and invigorating by early nature-life. Successively, all this changed, and we have also, by this radius of social life, arrived at a cyclic crisis, the evolutions of which none can forsee.

It is a very important passage of Plato (Republic Lib. iii.), wherein he says, "that it was just before the time of Hippocrates (460 B.C.) that gymnastics were made a part of medicine, as a means of counteracting the bad effects of increasing luxury and indolence."!!

Of the first introduction and spreading of (what we have called educational) gymnastics, their exists no accurate account. Homer, however, first tells us in Iliad (Book ii.), that the Greek soldiers disembarked from the ships, and played at quoits and at hurling the javelin on the beach; and again (Book xxiii.) describes the games celebrated at the funeral of Patroclus, which consisted of chariot races, boxing, wrestling, foot races, throwing the disk, drawing the bow, and hurling the javelin. At first they seem to have been principally practised as combining amusement with the acquirement of bodily strength and agility; but at a later period games were dedicated to the gods, which were conducted with great ceremony, and honorable rewards bestowed on the conquerors. These rewards being called *athlæ*, those who contended for them were called *athletæ*.

As gymnastic art has never existed in such a high degree of perfection as in the Greek commonwealth; as at no other period of man's history this branch of human culture and education has been so much studied, dilated upon and practised, as it seems to have been then, by all classes of society; we consider it necessary to give an adequate

description of the gymnastics of that time, and to point out some advantages which thence accrued to the individual, as well as to the community at large. At Athens there were three gymnasia. First, the *Lyceum*, on the banks of the Ilissus, the building of which was ascribed to Pisistratus, Pericles, and the archon Lycurgus, who probably had all contributed towards its completion. It was here that Aristotle taught a numerous circle of pupils and followers. Its stadium was built of white Pentelic marble, and of such splendour, that Pausanias says it resembled a mount of that substance. There existed a law of Solon, that whoever stole anything from the Lyceum was to be punished with death. The second gymnasium of Athens was the *Akademia*, about six stadia from the city. This place was surrounded by shady trees and lonely walks, and Euripides speaks of the "shadowy alleys of the divinified Akademos." Here it was that Plato delivered his discourses. The place was surrounded with a wall, by Hipparchus. The third gymnasium, called *Cynoxargis*, was destined for the exercises of the humbler order of society.

Vitruvius describes at some length an ancient gymnasium (Book v. c. 2), which was not a single building, but a systematic combination of several buildings. It consisted—1. Of the exterior *portico*, where philosophers, mathematicians, physicians, and other *savants*, read public lectures and held disputations, or rehearsed their performances. 2. The *ephibeum*, where the youths assembled very early, to learn their exercises in private, without any spectators. 3. The *coryceum*, apodyterium, or gymnasterion, a kind of dressing room, where they stripped either to bathe or for exercise. 4. The *elætherium*, alipterium or unctuarium, appointed for the unctions, which preceded or followed the use of the bath, or other exercises. 5. The *conysterium*, or conystra, in which they covered themselves with sand, to dry up the oil or sweat. 6. The *palaestra*, properly so called, where they practised wrestling, the

pugilistic and other exercises. 7. The *sphæristerium*, or tennis court, destined for exercises where the ball was used. 8. Large unpaved *alleys*, which comprehended the space between the porticos and the walls, wherewith the main edifice was surrounded. 9. The *xysti*, which were covered porticos for the wrestlers in winter, or bad weather. 10. Other *xysti*, or open alleys for the summer, or fine weather, some of which were open, or planted with trees. 11. The *baths*. We know that such existed at the Greek gymnasia, but are not acquainted with their special structure or arrangements. 12. The *stadium*, a large space of semicircular form, covered with sand, and surrounded with seats for spectators.

As systematic as the arrangement of the building, was the staff of employés, who exercised various functions. The master of a gymnasium, called the *gymnasiarch*, had the care of all the youths belonging to the establishment for the exercise and formation of the body. The gymnasiarch had two officers under him, to assist him in the government of the gymnasium: the first named *xytarcha*, the second *gymnarcha*. The former was master of the athletæ, and presided over the wrestling; the second had the direction of all the exercises, taking care that they were performed in good time and manner, that they were not too severe, that the youths attempted nothing beyond their strength, and that nothing injurious might be done to their health. These regulations sufficiently characterise the *humane* character of Greek gymnastics, and fully refute the opinion of those who think, that bodily strength would necessarily make a person harsh or rough. The *pædotriba*, in fine, taught the different exercises practised in the gymnasium. Under these four principal officers were a number of subalterns, who exercised different functions, and bore special names.

As the gymnastic art was not only practised in every gymnasium, but exhibited in public on innumerable occa-

sions, it had been brought into a regular system, of which the following will give some idea. The different kind of exercises practised in the gymnasium may be reduced to two general classes, as they depend either on the action of the *body alone*, or require *external agents* or *instruments*. The former are chiefly of *two* kinds, *orchestice* and *palaestrice*. The *orchestice* comprehended dancing; cubistice, or the art of tumbling; sphaeristice, tennis, including all the exercises with balls. The *palaestrice* comprised all exercises coming under the appellation of palaestra, as vaulting, boxing, pancratia, hoplomachia, running, leaping, throwing the discus, the exercises of the javelin, and that of the hoop. The bodily exercises which depend more especially on the help of *external agents* may be reduced to the mounting the horse, riding in one sort of vehicle or other, swinging, and the art of swimming.

Not satisfied with the exercise and strengthening of the body, as effected by gymnastics, in which bathing was included, they sought for other means of imparting *tone* to their different organs, and thus arrived at the *unctions*, and the rubbing of the body,—an impulse inherent, after all, in human nature, as it is resorted to (at least the former) by several savage or half civilized nations. The unction of the body was done "to give the nerves an increased tone," as Lucian (de Gymnas. c. 24) states. The ointment was called *ceroma*, and consisted either of simple oil, or a mixture of oil, wax, and dust. This operation the athletæ performed reciprocally one upon the other, and it was done by especial anointers, called *aliptæ* or *catraliptæ*. After the anointing of the body it was scoured or rubbed, which was also done by the aliptæ. During the operation the breath was to be retained, all the muscles to be kept in a state of tension, as to resist, as it were, the hands of the anointers, for the sake of making the oil penetrate the more intimately and to produce the more effect, as is stated by Plutarch "de tuenda sanitate." After the athletæ or

gymnasts had been anointed, they were either bestrewed with sand or soil, or they rolled themselves in the sand, which apparently strange operation was to prevent the too copious excretion of sweat during the exercises, and also protecting the pores of the skin dilated by heat, from any sudden influence of wind or air. It may also, have been intended for the better cleansing of the body after the exercises had been concluded. For people of distinction or wealth, the ointment was made odoriferous and they were sprinkled with a fine sand or earth, brought from Egypt or Italy.

If the life and the training of the athletæ were of that kind, whereby gymnastics were raised to their highest perfection and even rigour; still most of the Grecian youth occupied themselves with bodily exercise within the precincts of the gymnasia, which, after all, seem to us to have been the *only* and exclusive adult public schools of that nation. The history of Greece is full of the lives of sublime heroes and sages, who like Epaminondas and even Alexander, after having spent their youth in the strengthening and the development of their body, performed afterwards most sublime achievements, and served the commonwealth most egregiously. Many amongst them reached a high, vigorous age, which they mostly owed to the soundness and strength of their bodily constitution.

Excellence in gymnastics was the chief ambition of the youth, as it opened to them a passage to the highest posts of honour; for not only was a conqueror in the Olympic games, in many cases, supported in splendour during his whole life, but he received an honorary crown, his name was immortalized in public songs, statues were erected to his memory, his victory was considered an era in the annals of his country, and in earlier periods he was ranked amongst the gods. It was for a long time the ambition of kings and princes to excel in them. During the best periods of Greece, all the youth were regularly

trained to the exercises of the Palæstra. In every town there was a gymnasium or school, for this and other branches of juvenile education, supported at the public charge, and furnished with baths, courts, race-grounds, and every other convenience. To these seminaries their young men must have resorted at a very early period, as we find, that even at the great games, at which all Greece attended, boys twelve years of age obtained prizes.

We have thus given, as we trust, a satisfactory description of the state of gymnastics amongst the Greeks, of which that of the Romans is but an impaired imitation, as this art became tainted with them by the introduction of gladiators and other *inhuman* performances. Still, gymnastics remained with this nation also, an important and *generally* diffused occupation and business of life. For, we find, amongst other feats, that Cato taught his own son to traverse the most rapid rivers and bays, Emperor Augustus learnt his nephew to swim, and Cæsar crossed rivers at the head of his legions—cases, which, compared with our present mode of life, show a pitiable difference and a dereliction of all precepts and impulses of nature.

GYMNASTICS IN THE MIDDLE AGES, AND THEIR REVIVAL IN MODERN TIMES.

The history of gymnastic exercises, public festivals and games in the middle ages, is yet to be written—still, there is no country in Europe, which did not possess some or other days or occasions, when the people went forth in the free air and fields to enjoy and practise some sort of bodily game or exercise. And if we inquire closer into the history and philosophy of gymnastic exercises, it would appear, that their paramount combination with public festivals appertains chiefly to the *Hellenic race*, and those nations which have derived their civilization from that source. Consequently, the whole of Europe, conquered and colonised by the Romans, exhibits remains of their amphitheatres and naumachias; and as soon as the effects of a subsequent irruption of the barbarians wore off, we perceive public festivals and gymnastic exercises connected therewith, reviving and resuscitating. In England there are traces, that both with the Saxons and Normans, sports, games and the chase were popular.

And thus we arrive at the middle ages, when the running at the quintain is already mentioned in a statute of Henry III., in the year 1254, as being practised by the young Londoners. Foot-balls were already *prohibited* (for some cause or other), under Edward III., in 1349. Amongst the numerous games mentioned copiously by the chroniclers of old England, we find swinging, balancing, stilt dancing, leaping, vaulting and bowling; in fine, the May-games and May-poles, the latter obviously of Roman and Druidic origin. Towards the end of the 16th Century, here also this fine resort of the mind of the middle ages came to a

stand-still, and *Stowe*, who lived at that time, has left some graphic memorials of this period of transition into modern luxury, idleness and indolence. The forenamed author, therefore, says bevealingly, in his *Survey of London*:— "Why should I speak of the ancient exercises of the long-bow by the citizens of this city, now almost clean left off and forsaken? I over-pass it, for by the means of closing in of common grounds, our archers, for want of room to shoot abroad, creep into bowling alleys and ordinary dicing houses near home, where they have room enough to hazard their money at unlawful games." And in another place: —"Oh, what a wonderful change is this! our wrestlings at arms is turned to wallowing in coarsest sensuality, our courage to cowardice, our running to royot, our bows into bowls, and our dartes into dishes."

These gymnastic festivals, if we may say so, extended to all parts of the country, and embraced every trade and occupation. "It had been the custom," says a Chester antiquary, "time out of mind, for the shoemakers, yearly, on the Shrove Tuesday, to deliver to the drapers, in the presence of the Mayor of Chester, at the cross of the *Rodehee*, one ball of leather, called a foot-ball ..... to play at from there to Common hall of the said city ....." The above game of the quintain was practised even at a pole stuck in the Thames. Of it, *Stowe* says the following:—"This exercise of running at the quintain was practised at London, as well in the summer as in the winter, but especially at the feast of Christmas. I have seen a quintain set upon Cornhill, near Leadenhall &c."

But it seems, that on the Continent some gymnastic exercises (like the arts of the architect and mason, in the middle ages,) were combined and reduced into a system and certain rites of association, which were called fencing schools (*Fechterschulen*). There were two such associations in Germany, privileged and confirmed of old by several emperors, the one called the *Society of St. Marcus* at

Löwenberg, the other, that of the *Free-Fencers* of Greifenfelds. The Headman *(Hauptmann)* of the former, had his seat in Frankfort, the other in Prague, where also the archives *(Laden)* were kept, while the *Ober-Hauptmann* was always at the imperial residence, to plead and advocate their interests. The members of both Societies carried a uniform set of arms, and were obliged to know fencing and swinging *(Schwingen)*; they observed similar fencing rules, and had similar fencing and vaulting laws, by which certain unfair attacks and thrusts were prohibited Whoever wanted to become a master, was to be introduced to the brethren at a public and free fencing school, where he was tried in all knightly exercises *(Wehren)*, "from the shortest to the longest, and from the longest to the shortest weapon, according to the rules of their art and their best might." Then, the opinion of those present was taken by the Hauptmann, and if this was affirmative, he was received, "a well merited master of the sword." He had then to swear an oath to observe all the laws appertaining to "the freedom of a master of the sword." It might appear, from this mode of reception, that these gymnastic associations were composed of men of the higher sorts of society, which, however, was not the case. The Society of the St. Marcus brothers was the oldest, that of the Free-fencers the most spread and numerous. Amongst the former were chiefly to be found, bakers, file-cutters, smiths, furriers, clothmakers &c.; amongst the Free-fencers were enrolled, turners, dyers, sweeps, hatters, cutlers, shoemakers, watchmakers &c. According to imperial privileges, a master of the sword could wear a sword at his side and a feather on his hat; he could practise knightly exercises, and attend tournaments on horseback (like the nobles). A more practical privilege was, the permission of holding everywhere fencing schools, and to exhibit publicly their art and dexterity. It is a curious fact, that these fencing fraternities, like those of the masons in the middle ages, laid also

great stress on the *moral* and *ethical* behaviour of their associates; they insisted on the honor, modesty, the good customs and manners, on the truth and faith of their initiated. Whoever acted contrary to their rules, was declared an unworthy master, and the usage of the sword was publicly interdicted to him. It is not exactly known, when and how these associations arose in Germany (they also probably existed in Italy), but it has been ascertained, that regular fencing schools existed at Nüremberg, as early as the year 1500, and in 1628 the fencing-house *(Fecht Haus)* was built, where this and other public spectacles and amusements were performed. Here, and in Augsburg, their rules and regulations emanated from the bourgomaster and the civic council.* Towards the middle and latter end of the last century, these gymnastic schools for the tradesmen and workmen, seem to have successively dwindled away, and finally subsided in the rising of a new world and system of society.

If it be correct, what has been uttered by an eminent statesman (Lord John Russell) in Parliament, that it takes thirty years in England before a useful and grand idea becomes thoroughly known, examined, discussed, and at last *accepted* by the public—there have passed now several lusters of that kind, without that the great idea of *physical education* and gymnastics had been carried out, since it had been first broached in some way or other. Although J. J. Rousseau may be called the great *starter* of this and numerous other useful and grand plans, still, it was the German *Salzmann* who put them first into practical execution at the educational establishment at Schnepfenthal, towards which the then Duke of Gotha gave him every aid—an institution, which, like the Philantropin of *Dessau*, carried the knowledge and importance of rational education over admiring and grateful Europe. It was at Schnepfenthal where *Gutsmuths* introduced *gymnastics*, and pub-

* G. F. Pommer (Bugenhagen), Sammlung etc. Altenburg, 1752, 8vo.

lished several works on that subject. This establishment enjoyed a great vogue from 1785 until 1809, when Bonaparte had completely occupied and oppressed Germany. But the great idea of gymnastics failing in one place, reappeared in another, as already several Prussian officers had been pupils at Schnepfenthal, and the labours of *Frederic Ludwig Jahn* were on the eve of appearing before the world. How this large-minded man introduced and inchoated gymnastics (called by him *Turnkunst*), we may listen to in his own words:—"In the fine spring-time of the year 1810, at first a few pupils went with me, on the Wednesday and Saturday afternoons, when there was no school, in the fields and woods, but soon more and more. The numbers increased, and juvenile games and simple exercises were practised. So things went on up to the dog-days, when hosts of boys came together, who still soon afterwards again dispersed. Nevertheless, a certain nucleus had been formed, which stuck together as a first stock, even during winter, and with whom then, in the spring of 1811, the first *Turnplatz* was established in the Hasenheide, near Berlin." It was from this humble beginning that arose the numerous gymnastic schools (*Turnschulen*), which, up to the year 1819, increased and spread rapidly and wonderfully, but fell before the re-actionary spirit which then began to rule Germany. Professor Jahn himself was tried and imprisoned, but still treated with much leniency, nay even deference by the Prussian Government. But the cries of medical men and philanthropists became every day more urgent and urgent; and disease, sickliness, debility physical and moral, began to spread amongst all classes to that extent,—that gradually the ban issued against *Turnkunst* and *Turnschulen* was loosened, and they now exist all over Germany, in a more or less unshackled and energetic state. But we hasten to conclude by saying, that England, France and the other Continental countries have also followed in this wake, and the only, yet the only

efficient step remains to be made, viz., "to introduce and establish gymnastics and physical efficiency, as an essential branch of national education, both public and private."

Considering, therefore, the great extent to which gymnastic exercise, under forms and circumstances most varied and diversified, had been carried on, both by the ancients, as even in the middle ages; we may well comprehend its vast effects on the health, constitution, and the general mind of the men of those times. Recalling to our memory, that *all* this has been then completely neglected, and what that neglect all implies within itself, we can really not wonder, that the physical condition of mankind has become so much impaired; that such a host of dire and pitiful maladies have made their appearance, that an equally melancholy complex of medicines and expedients had to be called into aid,—we may, we say, rather wonder, that things have not become even worse. But *benign* nature has put even to man's misfortunes and sufferings a merciful limitation, and it is within the ebb and flood of such events and changes of man's existence and being, that the great cycles of history are performed.

THE MUSCULAR SYSTEM.

The wonderful complex of matter, which we call an animal (human) organism and body, consists of a combination of, and a connexion between, different organic systems, whose constant play and manifestation constitutes *life*. The various systems, composing the human organism and its life, are—

I. Organs of *reception*, *digestion*, *assimilation*, and subsequent *excretion* of external substances, food and drink; to which, however,

I *a*, Cutaneous (resorption) and pulmonary *respiration* may be added.

II. Organs of *circulation* and *distribution* of blood and lymph, of which the heart, the blood and lymphatic vessels are the chief representatives.

III. Organs of *senses*, by which the human body communicates with, and influences the external world.

IV. Organs of *cerebration* and *nervation*, whereby, like by a galvanic stream, the whole organic complex is kept in constant vibration and intonation.

As our present purpose applies to the sphere and activity of the *muscular system*, we have not comprised it in the above classification, as it may also very appropriately be considered singly and separately. It is obvious, however, that there is absolutely no function of the organism, wherein, in some stage or other, muscular power does not come into play, and perform an important part. Hence, therefore, in this case, as in many others, the people's sayings—"this or that person is very weak;" or the contrary—"he is a very strong man"—do not mean only what the muscular strength or power may be, in one case or other; but

they imply as well, and very truly too, in almost all cases, the *general well* or *ill-being* of a person. The condition, therefore, of the muscular system, its elasticity and power, however they may be combined with, or have been impaired by, a variety of illness and derangement, are still the most tangible and obvious criterion and standard of the general health of man.

The concatenation and connexion between the various systems and organs of the human body are so intimate, that hardly any disease or illness is to be found, where, while one system is affected, the others may not, more or less, participate in this affection. Thence, in such cases, it is the province of the skilful healer, to recognise *that* system, whose derangement is paramount, and chiefly causes that of the others. It is in this respect that our present medicine is susceptible of improvement—even of affranchisement, as it is very obvious that there are many maladies, which will yield but to *one* or *other* of the present medical systems of allopathy, homœopathy, hydropathy, kinesitherapy, galvano-magnetism, or mesmerism.* But whichever of these medical systems will or may have been resorted to for the cure of *asthenic* diseases, designated commonly by the name of weakness, dejection of forces, &c.; still, their ultimate effect will, conjointly with other improvements, be the *restitution of muscular vigour and power.* The purpose of the Gymnasist does not interfere with any of those hitherto modes and systems of cure; he takes up the patient at the moment that these curing methods have either removed the chief (organic) cause of malady, or when they have proved to be unavailing for procuring *perfect*, or at least *such* health, as is, after all, compatible with the whole state of the constitution of the patient.

After this more theoretical discussion, we pass to the

* We need hardly say, that the system of Gymnastics, and the expedients and apparatus adapted thereto, have no connexion whatever with the cure of acute diseases, fever, and the like, nor with the removal of organic defects &c. Our task is only the restoration of lost vigour, and still more the *preservation* thereof.

influence of the muscular system on the *whole complex* of the organism, and on the influence of *exercise* and *motion* on the strength and vigour of the muscular system.—It is undeniable, that the debility (or otherwise, abnormity) of the heart is *both* an indication of the langour of the whole of the animal functions (life), as well as the prolific source of most appalling and mostly fatal diseases. But there is undoubtedly a *reciprocity* of *cause* and *effect,* in the contractibility of this (the strongest) muscle of the human body; a slighter and less energetic influx of blood may confine and not sufficiently excite and fill up the cavities of the heart, and thus successively impair still more its energy and propulsory power, leading eventually to a less vigorous and fulsome circulation of the blood through all the tissues of the organism. If thus the rythm and the energy of circulation have been impaired, all that great process of blood-transmutation in the lungs, as well as all these various assimilating processes throughout the whole body, must suffer. This, we think, is the real genesis of so many heart and asthenic diseases, mostly originating in a languid vital process,—*brought on,* in almost all cases, by a neglect and disuse of our physical powers. Here, therefore, man's *will* must be called into action, and by a forced injection or propulsion of more blood in the heart's cavities (muscles), they will become again more irritated, extended, and filled up, and thus again revivified and strengthened. An *inverse* process to the above-described is therefore to be engendered, and this can never be done otherwise than by *muscular motion,* artificially by gymnastics. And, thus, we think we have adequately explained the remedial (healing or restoring) qualities of muscular activity on the *general process* of animal life.

On the other hand, it hardly requires any demonstration, that a variety of maladies and debilities now make their appearance, which either cannot be cured at all, or only by means, the resorting to which exceeds the opportunity

or the competency of many patients thus affected; as, for instance, the protracted use of some foreign baths, change of climate &c. But it is one of the most providential and deeply-wrought arrangements of the human (animal) organism, that whereas we can *not* reach nor command our digestive, respiratory, or even nervous power; we possess still means by which we *can* indirectly reach, command, and improve them at *will*—and this is by the use of our (voluntary) muscular system, thus again arriving at the great mystical influence of muscular and gymnastic exercise.

It remains now to explain, in conclusion, the very process and nature of muscular motion (exercise). And thus we say, first, that it is one of the beneficent contrivances of man's organization, that all the voluntary functions of the animal organism are capable of being increased and potencized by their adequate use and exercise. Thus, the huntsman will not only be a swift runner and climber, but his very senses of sight and hearing will become highly developed and improved &c. The muscular system, especially, is capable of the utmost perfectibility, as we know from the numerous cases recorded thereof in ancient and modern times. But taking into account what has been said before, and considering the vast extent of the muscular system in man, and its co-operation in and influence upon almost all, if not absolutely all other functions of animal life, it becomes clear, from another point of view, that muscular vigour and development will necessarily imply that of all other systems, and that if an impairing thereof has taken place, it can be again restituted by a wise and well-regulated *use* and *development* of (voluntary) *muscular action;* a remedy accessible to all capacities and stations of men.—The action and life of muscles, which mostly appear during their use and motion, may be thus explained: The *elements* of the muscles consist of minutest fibres of an either beaded or cylindrical form, which

lay parallel and unbranched, near to each other; and whose primitive *bundles* are combined together by a transparent, tough fluid.—The vital *properties* which appertain to the muscles, besides those common to all animal substances, are *sensibility* and *contractibility*. The latter is the *essential* property of the muscular fibre.—They are contracted (move), whenever they themselves, or their motory nerves are excited (irritated) in any way. The contractibility of the muscles is subject to the general rules of animal excitability (*Reizbarkeit*).*—If the muscles be but seldom contracted (moved) by internal (willed) excitement, their power and force decreases; but every considerable exertion also impairs the capability for the repetition thereof for some time, and causes lassitude. Excitement and quiet are, therefore, required conjointedly for the preservation and increase of muscular power.—Very important, also, is the consensus (*Mitbewegung*) of the muscular system, viz.: that organic law and arrangement of the human body, which causes, that if one set or system of muscles be moved, a consensical activity of others is (involuntarily) called into play.—The organic muscles also, are subject to the law of association and consense. And thus, the motion of voluntary muscles has also an influence on those of the intestinal canal; and the more we neglect muscular exercise, the easier torpidity in the intestinal duct is brought on; and every one knows how favourable muscular motion acts on the regularity of the motion of the intestinal canal, and the regularity of excretions. (*Müller's* Handbuch der Physiologie, *passim.*)—The energy of muscular contraction is determined (other things being equal) by the supply of arterial blood, which the muscle receives. The influence of this supply of arterial blood is twofold: it supplies the materials for the nutrition of the tissue; and it furnishes the supply of oxygen required for the *metamor-*

* We have derived the foregoing, and some subsequent data, from the physiological works of Professor *Johann Muller* of Berlin, and Professor *Carpenter;* the best books extant on this important science.

phosis of the tissue, which is probably an essential *condition* of the generation of its contractible form.—As the oxygen is taken in through the lungs, and as the greater part of it is thrown off, when united with carbon, into carbonic acid, by the same channel; we should find a very close correspondence between the amount of muscular *power* developed in an animal, and the *quantity* of oxygen consumed in its respiration, and this is in reality the case. *(Dr. Carpenter.)* This, in fine, leads us to the *increase* of animal *heat* produced by muscular motion, a most essential healing and vivifying process of animal economy; this again, to the greater vitality imparted to the respiratory process of the skin &c.

Beautiful and most ingenious as late researches and experiments on muscular motion are, still, we can (here also) not say, that we have *explained* it, or that we can properly *understand* it; such being the province not of antropocentrical, but of theocentrical knowledge. If we come to know, that there are muscular motions, of which, as in quick running, speaking, or piano-playing, 2,000 are performed in a *minute,* the limitation of our mental powers becomes quite apparent. That also what we call *voluntary* motion, and muscles appertaining to voluntary motion, are ideas far from being logical and precise. We *can,* if we *purpose* to do so, make some or other motion of our body *voluntary,* quite so; but in most cases, the process is a very different one. A person, for instance, wants to rise from his seat &c. In such and similar cases, there is a certain propensity or wish arising within us, but this internal propensity and the outward execution are *simultaneous;* we do not think, and have no *time* nor occasion to think or to direct our *will* anyhow, anywhere!—the act is done somehow, we do not know how. Still, there is, after all, but *one* life-manifestation; *one* life, vibrating and heaving, as it were, in a diversity of co-ordinates, of which muscular motion is *one*—all equally enygmatic and inaccessible to human ken.

CURVATURES OF THE SPINE—IN THE FEMALE SEX.

If we consider, that it is on a *surface* of less than *one* square foot on which the human body is supported, not only standing, but in a variety of most complicated movements, nay, evolutions—a feat which could not be accomplished by any *mechanical* contrivance, however ingenious; we may judge at once, that such an apparatus must be combined most profoundly and skilfully. It is astonishing also to think what shocks, encroachments, and sins, that (frail) human body can bear and endure, either wholly unscathed, or restoring itself with most astonishing speed and energy. It is only when (as is now the case) generation after generation have swerved from the path of nature and its holy ordinances, that 'the very poles of human destination, as a physical being, become inverted, and that nature, assailed and, as it were, provoked and scorned, avenges the transgression of her holy dictates, and showers upon poor deluded humanity that host of evils and ailments we are now afflicted with.'

Amongst the most appalling and lethal maladies, are those of the vertebral column—especially in the *female sex*, destined, as it has been by the Creator, to cheer and to sweeten, by its enchantment, the manifold cares and labours of stern and striving man. What a sorrow to mothers and relatives, and to the unfortunate patient *herself*, to see that "form divine," shortly before so erect, and stately, and commanding—at once bending, and fading, and drooping like a nipped flower; now the object of innermost compassion, which shortly before was the very summary of parental hope, trust, and exultation. We feel this sorrow-

ful situation, and shall endeavour to impress our feelings on the mothers of present mankind; and if, in other places of this work, we have insinuated that it is the *humbler* classes which are cut and sawed down, and chiseled up by the instruments of modern surgery, the diseases of the spine affect both the nobler sex, and the higher ranks of society.

If we consider the build of the vertebral column of the higher animals, as well as man, there is nothing in the whole of the organism which can be conceived deeper wrought or finer executed; for no appliance, fancied to be made of steel and diamond, would answer a similar purpose. The human spine is composed of a bead, as it were, of bones (the vertebræ), which, although single and separate of themselves, yet are so combined, by intervening cartilages and a great number of ligaments, that they form an almost indisseverable piece of workmanship. But besides these two connecting substances, another numerous variety of muscles is yet attached to and surrounding them, which by their various forms, sizes, and attachments, not only contribute towards the solidity of the vertebral column, but effect those many movements and evolutions this part of the body is destined to perform. Some of these ligaments and muscular contrivances are quite wonderful, and such as excite the admiration of every sensible observer. Notwithstanding, this wonderful complicated machine is, as said before, *proof* against all those uses, abuses, and encroachments it is subject to, conjointly with other parts of the body, unless they have reached the *ne plus ultra* of nature's holy endurance.

The chief causes of the maladies of the spine arise from causes either *internal* or *external*. The *internal* causes are maladies affecting the *whole* organism, as rachitis, scrofula &c.; the *external* causes of spine maladies arise mostly from an unnatural, sedentary habit of life, and consequent *disuse* of the muscles of the spine, and the whole body. And

here another mysterious and enigmatic observation strikes our mind. We may first put it theoretically and hypothetically. *Could* any rachitic or scrofulous predisposition develop itself, *if* the patient, whenever this appears or is apprehended, (and therefore in some cases in the age of infancy) were to be thought to use, exercise, and therefore improve and strengthen the muscles of the back, and the whole body? We are *à priori* convinced, that these two conditions of the organism—a similar diathesis, and increasing vigorous exercise, are *incompatible*, and that vitality would surely conquer in this case sickliness and decay's tendency. But we may convert this theoretic hypothesis into a practical axiom. Wherever *is* muscular strength and vigour, rachitis, scrofula &c. can *not* coexist. Moreover, present medicine possesses some adequate remedies for the above diseases, which, whenever they *will* act beneficially, *will* of course *strengthen* the limbs and muscles of the patient. Giving, therefore, to these medicines against scrofula, rachitis &c. every due, our object is, that that very object which these medicines may ultimately produce, should be attempted *directly;* if with infants, by the very *gentle* gymnastics characterised in our foregoing pages. Here ample room for an Institution for rachitic and scrofulous children is left, which for the poorer classes could be combined with the *cruches, salles d'asile* &c. And as *nature-life,* to which these children are to be trained, is *self-supporting* (!)—a variety of little industry could be introduced here, to defray the expenses of these poor victims of our boasted civilization.

The *external* causes of maladies and distortions of the spine, especially in the female sex, are to be adverted to next. These, we repeat, are solely to be sought for in the disuse of the whole muscular complex, of which the spine is the very centre and motor. This portion of the human body has a bi-lateral arrangement thus, that two corresponding halves of activity are placed around and

along the spine. With ligaments and muscles so very numerous, minute, and complicated, encroachment and derangement become much easier than in the more bulky and simpler muscles of the chest and the extremities. In nature-life, however, and anything approaching it, things go on quite smoothly. Amongst the *one million* of muscular movements which the dairymaid, the gardeness, the bakeress &c. must daily make, even in the way of apprenticeship into trade in earlier age, the proportion of muscular activity balances itself to a very nicety; besides, if amongst the above number of *daily* muscular movements, even a *few* should go the wrong way, if we may say so, this becomes balanced by the grand total of muscular motions. Differently, however, do affairs stand with our present townspeople, or those who, even in the country, strive to ape the follies and prejudices of townspeople. Here the young *lady* —poor, pretty, innocent girl, is pent up and bent up, day after day, month after month, to learn some lesson of Greek or Roman history (very useful subjects in their way), or some fancy needlework, the piano &c. But nature will not allow things to go on in that way. Instead of the one million of daily muscular exercises (on the widest range) of nature-life, *only* fifty thousand are resorted to, and those of a very limited extent and limited power.* As soon, however, as the grand equilibrium of the muscles and motions of the trunk, especially the spine, is slackened or impaired, some muscles take the predominance over those which have become unused or weakened. Then, of course, nature is forced to perform a wrong and anomalous part, and to adapt itself *(nolens volens)* to the conditions of life, such as they have been made by un-nature; the weaker muscles slacken, impair, and collapse, and those which are anyway better take the lead, by eminently acting and dragging in *one*

* Dr. Forbes mentions from his own observation the case of a boarding school, in which there was not one girl, who had been there two years, that was not more or less crooked. He adds, scarcely a single girl that has been at a boarding-school for two or three years, returns home with unimpaired health.—*Cyclopædia of Practical Medicine.*

direction; *and* thus the head, the neck, the shoulders, and in fine, the spine, acquire one of those numberless mal-positions or mal-formations, so very many families now bewail in their dearest and most beloved daughters. No Greek, nor Latin, nor any piano-play will compensate for such dire mishap—as one hour of robust health is worth a wilderness of dreams and fancies.

If, to conclude, the mal-positions and mal-formations of this part of the body (spine and hips) are left unheeded and unhealed for any length of time, the mal-placement of the vertebral column will, in fine, affect either the ligaments, or even the bones, or at last, the medullary cord, (one of the most mysterious and important components of the human body), and produce maladies, for which *death* is the better and more charitable issue— —

But let us pass, as quickly as possible, from these *night-sides* of present society, to that which has still remained unscathed and unimpaired. Let us consider those numbers of the "fairest amongst the fair," who adorn and enliven our cottages, our smaller cities and villages, up to the remotest corners of these isles. They would stare and laugh at the evils and pains of refined civilization, to which, happily, they have remained complete strangers. We have so often, nay, constantly, referred to nature-life, that we do not require but to repeat here, that "wherever you see a strong, well-made, and stately female, you may be sure to see one who has adhered to a greater simplicity and sobriety of physical and mental life!" And they have been right. With any female, at least those who intend to enter into married life, health and strength (and therefore a comely bodily appearance,) are not accessory, nor even important, they are with them the *most* important requisites.* But the disuse of muscular exercise is the more blameable here, as nature and society have assigned to

* *Theophrastus* states that "the Ephori of Sparta condemned their king, Archidamus, to a fine, because he had married a very little (short) wife, saying that she would give them not kings, but *kinglets!*"

woman an *active* part in the occupations and concerns of the *household.* Here, again, we have given way to an inconceivably stupid dereliction of nature, and the customs of ancient times. It is a well-known fact, that in ancient Greece, nay, even in more luxurious Rome, the first dames of the land were occupied in spinning and weaving—occupations which might appear very light; but if we consider what we have gathered from the work of Professor Müller, on the nature of *censensical* muscular exercise, we shall find, that these easy occupations still imply the use of a vast number of muscles, and that no female will be able to spin for any length of time, whose body and stamina are not perfectly vigorous and healthy. Here, therefore, is the first *preventive* of any spine or other disease, viz., a determined *reversion* to the household occupations of our ancestors, to which, of course, the garden, the field, the orchard, the meadow, the poultry-yard and the dairy are to be added. And in this place we may adduce the example of Miss *Harriet Martineau,* one of the cleverest ladies in this land, who, even after modern civilization and bodily inactivity had nigh ruined her, knew how to emerge from a sick bed of many years, and to revert to the nature-life of the meadow, the field, and the garden.*

But a host of ideas attaches itself to a subject of such magnitude, as the health (and well-being) of a whole generation. Considering the human being from a more elevated and general point of view, *two systems,* as it were, may be discerned in its composition and constitution, the *muscular* and the *nervous.* The former, being the more bulky and material, attaches itself more to the concerns of the earth (and clay); the nervous, ranges and aspires towards the upper regions of the world and its life. Although this division proceeds from a physical, or physiological basis; still, it is the life and history of humanity, which is comprehended within these limits. It is obvious, that the

* Miss H. M. is not only an excellent authoress, but a very expert mower and haymaker.

muscular pole of life was prevalent with the nations of antiquity, while we moderns have yielded, preponderately, to the nervous pole of life. Thence, our daughters and sisters are, or will be (pre-eminently) sentimental, refined—unhappy! Because it is a pitiful sentimentality indeed, where the physician, the druggist, and ultimately, the operative surgeon, have to perform a chief part. The nervous tendency of the age manifests itself, therefore, ultimately also, in an overstraining or misdirection of our mental faculties, which end, in many cases, in insanity and self-destruction. It is a strange sign of the times, that while all the lives of Plutarch do not contain one such case, the first geologist and the first tragedian of England are the inmates of asylums, and statesmen, painters and literati, here and abroad, leave this life by their own hands.

Our readers will, we beg, excuse us for having broached what may seem an alien subject, but which bears strongly on the dereliction of mere *nerve-life*, which we are advocating. Reverting, for the last time, to the subject of female education, the affections and malformations of the spine, we shall make a last and plain appeal to mothers, elder sisters, guardians and relatives of our female children and maidens. We repeat, that the bodily appearance and perfection of a female is, if not her chiefest, certainly one of her chiefest portions. There are, as we stated in page 8 of this work, people of all conditions and both sexes, who attain a high and healthful age by a combination of adventitious circumstances, without any systematic appliance of gymnastics whatever. Still, their number is small, and becomes every day smaller still. We would not wish to intimidate our female readers, still, the proportion of tall, stout, stately maidens, is rapidly decreasing, especially amongst townspeople. It becomes the duty of every sensible and loving parent to provide against such a contingency. We exhort them to trust no more, as has been

done mostly up to the present time, to mere chance and eventuality. The times for so doing *have passed.* Children of the female sex should, from their tender age, be kept to attend to the duties of the house; they ought to be kept hardy and active, and the gymnasium and gymnastic exercise be made an essential ingredient of female education. Conjointly with the inquiry, what progress Emily or Mary have made in geography, history, or the piano, we ought also to inquire how much they have gained in weight, how far they can run in the park, the garden, the lane, or the square &c. As the general run of boarding-schools owe such a frightful character, to the testimony of one of our most learned physicians (Dr. Forbes), none ought to be one single day longer without possessing, at least, one of our *Gymnastic Polymachinons*—an instrument which combines a variety of most useful and gentle exercises, yet capable of increasing intensity, with a small bulk, easy placement and a moderate price.

THE MOST ESSENTIAL IMPLEMENTS AND EXERCISES OF THE MODERN GYMNASIUM.

As the idea of gymnastics, as an essential branch of (modern) national education, is yet, *embryo-like*, slumbering in the minds of some philosophers and philanthropists, so equally no plan yet exists of what the *modern* gymnasium is to be, especially if once combined with national festivals, as a branch again of national *re-creation*—subjects, however, alien to this essay. The fancy, nevertheless, of gymnasiasts has prompted them towards some extraordinary proposals: as, for instance, Colonel Amoros, who was many years Director of the Paris Normal Gymnasium, wished that a mount (hill) of 100 feet should be raised, whereon rock declivities and ravines might be formed, for the due exercise of the pupils &c. Amongst the gymnasiums highly spoken of is that established by Colonel Amiani, at Milan, of which nothing like has hitherto existed in England. As, however, *our* chief object is *health* through gymnastics, we may abstract from those complicated contrivances and feats, on which some other advocates of bodily exercise have laid too much stress; the more so, as those very feats, while they aim at and exhibit the prevalent development and strength of certain muscles, or set of muscles, preclude, as it were, that very *general* development of the body, which ought to be the great aim of *every* sensible person. As, in fine, our present work is not an instruction in gymnastics, but a *rationale* of that science and art, it will suffice to say a few words on *some* of the apparatus commonly used in gymnastic establishments at the present day :—

The Horizontal Bar.—This is one of the most simple and useful instruments in gymnastics, as by taking hold of and swinging on it, we may bring into action all the muscles of the arms, chest, abdomen, back, loins, and legs. It consists of a horizontal round bar, two inches in diameter and about six feet long, made of ash and placed between two uprights fixed firmly in the ground, with holes in each, opposite to one another, of such a shape that the bar can be placed and removed at will. Thus, it can be lowered to the height of a little child and raised to that of a full-grown person.

The Parallel Bars.—Two bars, each supported on two different upright posts, are placed parallel to one another. There are a variety of exercises to be done on this instrument, all tending, also, towards the development of the chest, extensor muscles of the arms, the muscles of the back, abdomen &c.

The Climbing Rope.—By it a variety of exercises are to be performed, not only in climbing &c., but by swinging, jumping &c.; for young children it is very beneficial, and a gradual development takes place without any possible danger.

The Climbing Pole.—This is the accompanying instrument to the preceding, and is generally much more easily overcome by beginners. The same muscles, as in the *climbing rope,* are brought into action. When pupils have become sufficiently advanced, then, as in every other instrument, exercises of a far more difficult nature are to be resorted to.

The Running Board.—This is an instrument of very simple construction, but possessing very useful properties. It is chiefly adapted for the legs and feet, calling into action their various muscles in a most beautiful and energetic manner, at the same time inducing the particular notice of children, through the liveliness required to perform the different movements. The instrument in

question consists of a board, or two or three boards screwed firmly together, to form one of about four feet wide by two inches in thickness; it is to be placed on the incline at an angle of about 45 degrees; the length to be about 13 feet.

The Triangle.—Of all the gymnastic instruments for the development of the muscles, especially those of the chest, arms, shoulders and back, the triangle is that which merits the preference on every account, because it presents the incalculable advantage of being able to be placed almost anywhere without inconvenience. It is with the help of this instrument, that we can instruct children of both sexes in a very short time to move their body in various ways, either by the help of the arms, or by the help of the legs. Besides the advantages which it presents of strengthening children without the least danger, even from the age of six years, it still offers for the members of a family a variety of pleasurable changes. The instrument in question is formed of a pole or bar of very dry ash, three feet long by one inch-and-a-half in diameter; each of the ends is fixed to a cord, the length of which ought to be proportionate to the height of the apartment, in the centre of which it is placed. The two cords are of course continued upwards and joined together over an eye or ring of iron, to prevent the wearing out of the ropes; this is then fixed to a hook of strong iron, which is to be firmly screwed into one of the main beams of the ceiling, and in order to prevent the ropes from twisting we have recourse to a swivel, single or double, to which the ropes are hooked.

THE GYMNASTIC POLYMACHINON.

If we cast an occasional retrospect at the range of thought and fact laid down in these pages, we shall find a curious contraction and lessening of the *area*, on which the physical life of man is successively performing. That of the nature-man in the forest, the fen, the field and meadow; then the more concentrated feats of the Greek

and Roman games; the archery grounds of the middle ages. Subsequently, the stage still contracts in the gymnastic hall and room of modern times; and as if this pigmy shrinking of man's physical efforts were not yet sufficient in this *involutive* process,* a still smaller space has been *called* for by the actual circumstances of society; and as everything which *is* to be, *is*—it has been *found* in the above-named useful and well-conceived machinery.

Although, as with some other inventions, other parties may also claim a share thereof, the credit of having started and improved the *Polymachinon* cannot be denied to Captain Chiosso, which has been now constantly used at both gymnastic establishments for upwards of 12 years. It consists of a case of wood, one foot six inches square and eight feet six inches high, and standing erect and mounted upon rollers, so that it may be moved easily from place to place. This case contains a very ingenious contrivance, by which a number of sets of weights can be put in motion by way of pulleys and gutta-percha ropes attached thereto, and by which a number of motions and exercises of the body are called forth. The *principal* are the following:—

The Down-Traction Exercise, imitating the movements of the under-sawyer in a pit. It calls into action the whole complex of muscles of the arm and the pectoral muscles.

The Upward-Traction Exercise, which, while it employs and exercises all the muscles required by the former practice, puts also in motion those of the back and part of the hips. The muscles of the arms, in raising them, are thus acted upon, whilst in keeping them extended the extensors are called into play.

The Extension Exercise is different from the two preceding, inasmuch, by it we strengthen the muscles of the chest and the arms, independently of any other. Its effect is most beneficial in expanding the chest and throwing the

* The *evolutive* processes of gymnastics will form the concluding part of this essay.

shoulder blades perfectly back; the muscles acted upon are the pectoral and triceps muscles of the arm &c.

The Seated Prone and Supine Exercise.--This brings into action all those muscles which are used whilst rowing in a boat. The influence of this exercise on the various muscles of the back, such as the trapezius, longissimus dorsi, erector spinæ, and all such as have a direct tendency in stretching the body, when returning to the erect position, is very great.

Lateral Traction Exercise.—The chief object of this exercise is that of strengthening and developing those muscles which are placed at the sides of the body, such as the oblique muscles of the abdomen, the quadratus, the intercostals &c.; as also in raising the hand with the cord, the elevators of the shoulder-blades are acted upon.

The Brachial Rotatory Exercise.—This is a faithful imitation of the movement performed whilst turning a windlass with one hand, in a direction from the body,—not towards it, and has the advantage of using both arms at the same time, or alternately. The action upon all the muscles of the shoulders, the shoulder-blades, arms and chest is most effectually carried out. The movement, of course, can be reversed at pleasure.

The Crouching Exercise.—This is so called from the body from an erect position being allowed to crouch, or become seated on the heels, by fluting the legs, which of course, by an alternate exercise, calls into play most vigorously the various muscles of the back and the extensors of the legs, as also the erector muscles of the head or the trunk.

From this cursory description of the above *Gymnastic Instrument*, it is easy to perceive, that there is hardly any motion and exercise of the body which it does not provide for, and therefore, no disuse or misuse of any portion of the muscular system which it will not guard against. The most complete kinds of this instrument are, of course, the most

preferable; but when either want of space or economy may demand a smaller instrument, they are made to suit every convenience, and if a machine contain even only three or four of the movements, it will still effect much good, and answer many purposes. Such machines ought to exist in every *nursery** throughout the land, and in every workshop where sedentary trades are pursued, as it is clear, that in this way every few minutes of leisure could be employed in taking a healthful exercise, which, besides, will afford children much amusement, and even mental recreation. Another most important advantage would be conferred on patients labouring under many asthenic, languid, and mental diseases, by the Polymachinon being introduced into the hospitals and lunatic asylums. It is not on our own authority that we make this statement, as it has become known of late that at the Hospital for Children, at Paris, an especial gymnasium (!) has been established, which has been attended by so many beneficial results, that the civic authorities have taken up the subject, and extended their patronage to it.

We need not, on this occasion, say more on the many other instruments and appliances to be introduced in the *modern* gymnasium.

* This [apparently eccentric] plan has been carried out, for some years past, at Buckingham Palace, where gymnastic exercise is resorted to very regularly and perseveringly, by the whole Royal Family, down to the very *infant*.

RULES AND PRECAUTIONS FOR GYMNASTIC EXERCISE.

Gymnastics, we repeat, are but the copying and the artificial systematization of the nature-life of man. In this a hundred circumstances, appertaining both to external nature and the constitution of the organism—besides a certain instinct and tact, lead the individual step by step, from year to year, to an appropriate use of his physical powers, and therefore to their perfect development and strength. It is not to be feared that the little infant, creeping first on the floor of a rude homestead, or in the grounds around it, will over-exert itself by reaching too great a distance. It is not to be feared, that a sudden change of temperature or weather will give him cold, or rheumatism, as it has been either by very imperceptible degrees that it has acquired such or such forces, or has, from the very birth, been accustomed and hardened to the influence of surrounding nature. But all and everything which benign Nature teaches, and impels the nature-man to do and to avoid, is to be known and observed here by dint of experience and consciousness; and many an attempt to introduce gymnastics into families or communities has failed, on account of these weighty considerations having been neglected. And surely, one single case where gymnastics have not produced any effect, or have been even found detrimental on account of being practised without a full knowledge of the laws of nature and the organism of man, have had greater weight than a hundred others, where (either by accident, or a wise and prudent direction) they *have* produced all the desired effect. The transforming and converting of *instinct*, however, into *conscious experience*,

is a subject more difficult than many people are willing to acknowledge.

HYGIENISTIC AND THERAPEUTIC GYMNASTICS.

Whoever will begin gymnastic *exercise*, or gymnastic *cure*, must, *under all circumstances*, be free from any organic disease of a purely *topical character*, such as sores or ulcers, and the like. In fact, any other disease, even of a trifling character (except *that for* which gymnastics are to be used), is first to be removed, at least deprived of its serious character, else this expedient, instead of being beneficial, will act detrimentally. Amongst the more trifling ailments to be removed, we reckon also carious and painful teeth, which always produce a certain amount of irritation of the nervous system.

After the body of the pupil has been thus trimmed and purified for bodily lore, the garment is to be taken into consideration. We have known swellings of parts of the ribs produced by the wearing of too tight braces; and the unreasonable and overstrained lacing of the female sex (a rich source of many a subsequent ailment and disease), is quite incompatible with the free and easy exercises of the gymnasium. But neither do we advocate that easy and slovenly way of dressing, which some persons might think to be natural. Nature—sublime and thoughtful Nature—observes in all her operations and processes a certain nicety and conciseness, which it is well for man to imitate. The dress of the gymnast ought to fit well, without any unnatural and hindersome straining, or confining and compressing of the body. On the other hand, the muscular power is *supported* and assisted by well-fitting garments, and becomes more apt to perform the many exercises and evolutions of gymnastic art. A complete undressing, or changing of dress, especially in the beginning, we are much averse to, for many reasons, especially as an inducement to the catching of cold &c.

As with many persons the entering a gymnasium may imply a complete changing of their habits—the turning over a new leaf of life, as it is called—we may first allude to *a few vicious* habits of children, which will mar any beneficial effect of artificial bodily exercise. Such is, for instance, the habit of strongly leaning or pressing the chest against the table or desk, while writing. Youth indulging in this habit will unavoidably injure their chest, by making it flat and narrow. In such and similar bad habits, as pinching, or twisting of the fingers &c., people do not seem to consider what such mal-practices amount to. Suppose a young person to sit every day only four hours at his table, occupied in writing, or other study or occupation. This makes, in the year, upwards of 1,200 hours, during which time the tender bones and cartilages of the chest are pressed against a hard piece of wood. The effects of such a practice are obvious. Having broached these apparently minor and solitary cases, the diet and whole mode of life of the gymnastic pupil are to be alluded to--subjects, however, which appertain rather to the general domain of physical education and dietetics, and are to be found in books of that kind. One subject, nevertheless, we must allude to more especially, as being most essential, we mean *temperance* and *moderation* in the enjoyment of all appetites and animal propensities. Without this also, all the gymnastics of the world, like all the medicine of the world, will be of *no avail.* As the aim of gymnastics is the improvement and increase of the physical forces of man, a person neglecting the above sacred rules of life resembles one who, wishing to accumulate a treasure, crams, on one hand, his coffers with useless rubbish, and throws, on the other, his money out of the window. Moreover, muscular exercise requires a great amount of nervous influence and activity, which is employed in the greater vivifying and potencizing of the whole organic system; and we all know that those nature-men, who employ their physical powers in any vehement or vigorous exercise,

be it hunting, the chase, or other more mechanical work, neither keep late hours, nor indulge in any other vicious extravagance, but enjoy a balmy and refreshing sleep, to rise again with regenerate and fresh vigour. As, we repeat, gymnastics are only a copying and an artificial systematization of the nature-life, we can never expect to reap the beneficent effects of the exercise of *nature*, if we mix it up with the follies, the vices, or at least the errors of *un-nature*.

Having thus alluded to some of the preliminary instructions for young or beginner gymnasts, we have now to state some general leading principles of equal import. The system of gymnastics which we advocate, does not imply in itself the acquisition of any especial or extraordinary bodily skill or acquirement; this we leave with the arts especial to which they belong; our sole great aim and motto is—"health and vigour by bodily exercise." We deprecate, therefore, all far-fetched, complicated, and still more, dangerous instrumentation, and are convinced that the main aim of gymnastics can be attained by a limited number of judiciously-selected implements and contrivances. On the other hand, we are also far from the wish that gymnastics should be considered as a mere game and pastime, to be taken up accidentally and carelessly, without any system or consequentiality. We believe, on the contrary, that gymnastics are to be practised, as every other educational agency, with serenity of purpose, and with a deep sense of the importance they can and will confer on every one, using them in this way. We are none of those who think, that gymnastics ought to be combined and connected with any system or principle of politics, or ethics, or art &c.; yet exercising, as they do, the greatest influence over the destinies of civilized society, every one practising them with due consideration, will not fail to feel their beneficial effects on his principles and morals, and every acquirement of his whole being.

With the exception of those few persons, who may begin

the practice of gymnastics for the acquirement of mere bodily agility, being as it were in full health and vigour, a case very rare now-a-days, with the exception of these few persons, *security* from danger and accident, nay, even of any slight inconvenience, is another great principle we advocate. To attain this, a great variety of rules and precautions, all based on physiological and dietetic principles, are to be observed. The *weaker* the person, whether from tender or advanced age, or suffering from any ailment, either still existing or scarcely overcome—the more strictly and vigorously should those rules be observed.

The time of day, at which gymnastics are most beneficially practised, is of no great importance, except always the hottest hours of a sultry summer's day, especially if the exercises are to take place in the open air and in an unsheltered place. The time shortly following meals, is not to be chosen for exercise; but equally is to be avoided (especially for the weak and delicate) a period of the day when the body may be rather exhausted by previous fasting. One hour and a half after meals may be the most appropriate time for bodily practice and exercise. But we have also particularly to observe here, that as gymnastics are an exercise of the body, which most people are unaccustomed to, they ought to take ample and substantial nourishment, and an increased appetite is mostly the first symptom that these exercises are producing some beneficial results.

As security and safety from any incident is the chief rule of hygienistic (educational) and therapeutic gymnastics, it follows, that "we have always to begin with the *simplest* and *most easy* exercise; to proceed most carefully and not pass to any more violent, until by gradual practice, the preceding has become one quite easy of performance, even if repeated to a certain reasonable number." Of this the gymnasiarch and masters will have to decide. As it is, however, most essential to impart to gymnastics the greatest degree of a *certainty* of efficacy, which if not

marred, may at least be retarded, by what we may call rather incidents than accidents; we may observe, that every rational being still retains much of that, which in animals, we call instinct. We are mostly forewarned and repulsed from what will injure or hurt us, a *gift* of nature the *gifted* possess to the highest degree. Cicero, or some other Roman writer says, that at a certain age, every one ought to be his own physician; which saying, I am inclined to apply to that deep and most eloquent nature-instinct we have of the beneficial or untoward effects of things or actions upon us; which, sad to say, we so often allow to be drowned by the sway of our passions and ill propensities. We return, however, to our subject, by saying, that most persons will, in the practice of gymnastics, *feel* what motion or what repetition of motions may be detrimental to them—a subject most essential with those of an advanced age, or the infirm. The movements of the upper extremities can hardly lead to any such consequences; but whenever the motions of the spine, or the hips are concerned, with persons whose back is weak, as it is commonly termed, great caution is required. All this leads us again to that fundamental rule of gymnastics, always "to begin with the exercise most simple and easy, and not to pass from that to another more difficult and complicated, until the former has become quite easy of performance." This admonition cannot be repeated too often.

To this great caution, however, is to be added that, which is the second great rule of our art—a great *perseverance* and *progressiveness*, a tempered ambition, in fine, to attain a certain aim before us, viz., perfect or increased health and vigour. So, from day to day, from week to week, we must aim at constant progressiveness, unceasingly and uninterruptingly. But here, a great many exceptions will or may take place, which are all to be taken into consideration; in fine, rule second is always to be overruled by the first. Because, mark well, there arrive

periods of re-action of the body and system, when *nature*, great and benign nature, is perhaps performing some beneficent work, in which she will not be interrupted. Such periods, when gymnastic exercise is to be much relaxed or interrupted, will surely and perhaps repeatedly arrive, especially with the weak, the advanced in age, the invalid &c. A cold will, in many cases, interrupt the train of such exercise; but, after any such interruption the attempt should be repeated with renewed vigour. The acquiring, or preservation of health is an object never to be over valued, and to which we can never bestow too much time and attention.

The period of life to which gymnastics should be extended ought, properly speaking, to be illimited, as Plato says, that gymnastics are the only physical radius of our being to which we ought to pay marked attention. If any person begins exercises in the prime of youth, say from 15 to 18 years old, and if perfectly healthy and vigorous (to repeat, a rare case), such a person may be adequately *instructed* and *trained* in six months, or a year. But bodily exercise, like drink and food, is a thing which we never can dispense with, except at the certain detriment of our body and constitution. As long as public and private playgrounds are not spread over the whole land, for being available to every one at every time—the wise and prudent will, even after they have passed through their course of gymnastics, resort to it as often as possible.

When, however, gymnastics are taken up as part of systematic education, or to strengthen a constitution, or in fine, as a cure, and still more as a *renovator of the whole bodily frame;* then, as a matter of course, the period during which gymnastics are to be acquired and practised, is one of a far greater duration. Because, to speak first of chronic diseases, such as are likely to be removed by gymnastics —neuralgy, sciatica, lumbago, narrowing and collapsing of the chest, giddiness, vertigo, hypochondria, hysteria

&c.; they can only have been acquired in *three* ways. 1. Either by some *momentary*, yet great *erring* against the laws of nature and the organism, and against the consequences of which *no* remedy, or *wrong* remedies have been used; as the catching cold in any portion of the body &c. 2. By a *continued* and *repeated neglect* of, or encroachment upon those same laws, and the constitution of the organism; or, 3. By a hereditary unhealthy diathesis and constitution. The *origin* of chronic diseases, therefore, is different, but the *results* are the same—a gradual, but deep-rooted and organic change of the whole system and bodily complex of the individual. Considering, moreover, the intimate connexion and concatenation between the different systems and organs of the body—illness and ailment of long duration will, in whatever place or organ it may have *originated*, extend to others, and even to all others, and thus produce those *objects* of misery and disorganization the feeling mind shudders to contemplate. Thus, a partial neuralgic affection of the loins or back will bring on a gradual weakening of the whole muscular system, a falling off in the senses of hearing and sight, and *finally*, by the collapse of the muscles of the chest, a contraction of the lungs, and therefore pulmonary complaints &c. If disorganization and corruption proceed to the solid portion of the human body, ulcerations and caries of the vertebræ and hip joints may ensue—some of the direst maladies (*deaths*) animal nature can succumb to. If the susceptibility and irritation of the nerves proceeds further, epileptic or apoplectic strokes are the consequence. If the circulation of the blood is disproportionately driven to the head, giddiness, irresolution, languor, and vertigo will ensue; and if both nerves and blood-vessels are wrongly attuned, an intolerable and unbearable existence, and satiety of life will ensue, which often end in complete insanity. All these are either produced by our own faults, or those of our parents and ancestors, thus verifying that solemn admonition:

"the sins of the fathers are visited in the third and fourth degree." The more modern prayer, "Lord, lead us not into temptation," is but a corrollary of the first.

As we are neither fond of statistics nor *cases*, we shall rather mention here an illustrious martyr to the neglect of nature-life—a man of great name and misfortune, Sir Humphry Davy. Opening the course of life, like some brilliant star suddenly emerging in the fairest sky, he ended a short career, the most unhappy and suffering man. Who can read those most spirited Diaries of the concluding portion of his life, without deep emotion—those confidential, as it were, ejaculations, "*Valde miserabilis!*" So lived for a considerable time, and finally died (in Geneva), one of the most gifted and spirited men of our age, at a comparatively early period of his life, in the very midst of that grand and solacing *nature*, one jump into which, the slightest approach towards nature-life would have saved him, for perhaps still greater discoveries than he had already achieved. But Sir H. Davy was one of those men who, as far as we know, never thought that the sublimest idea will fade and extinguish, if not supported and maintained (like the flame of earth) by some substantial material substratum. The science of Kinesitherapy and Hydrotherapy was then not yet known, and Sir Humphry had not that kind of inventiveness and contrivingness to discover it, at least for his own use. Such regeneration, however, and, as it were, *reconstitution* of the body, seems, after all, to be more or less possible, by a reversion to nature-life, whose artificial imitation and systematization, can be, at least partly, accomplished by gymnastics.

We have been led to a wide circuit of thought to arrive at the conclusion, that gymnastics, if they are to act on a chronic disease, especially in the old—and if they are to fortify, develop, and expand any weakly and withering constitution in the young—cannot do so, but after some

lapse of time; and by overstepping this wise ordination of nature, and intending to accomplish in a *short* time what cannot be accomplished but in a *long* one, we mar and interrupt the operations of nature, and many, thus, finally give up an attempt, they have themselves been instrumental in frustrating. As we think we cannot say enough on the caution to be observed, especially in the stronger gymnastic exercises, such as where the muscles of the *loins* and *back* are taxed—the more so with persons where the *loins* and *back* are weak, cases however, which rank amongst the greatest feats of gymnastic therapeutics, we shall view chronic disease yet from another side.—In calling a disease *chronic*, a one-sided epithet has been chosen, at least so far, that it is not *only* the duration, but its deep-rootedness and extent, which make it dangerous, and in many cases lethal. As soon as malconformations, or waste of parts or organs (!) have supervened, the case becomes still more serious, because to change this state, not only the change of the parts immediately affected, but, through the connexion of the system of the body, a change of nearly the whole organism is necessary. If, therefore, in the beginning of any gymnastic cure, we find that a stop is put (of course not by our own faults) to some or other motion, or to the intensity of motions, or to the exercises altogether, we may conjecture that some internal arrangement of the architecture of the parts is changing or improving, which we have *not* to disturb or interfere with.

From these general rules for gymnastic use or exercise, may be deducted a variety of others, which we shall briefly mention. As most muscles of the body are binary (in pairs), a great symmetry of position and motion is required in all exercises, and the handling of the Polymachinon. The handles of the latter are to be grasped with the full hand, still allowing a fair scope for their turning as they like in our fist, avoiding all stiff, crampy grasp. Every motion must be performed smoothly, continuously, and with due

cadence and rythm, and all jerks and sprains are most carefully to be avoided. Imitating, in fine, the manœuvres of our horsemen, we do not advise persons to stop short of any exercise, especially more vehement or protracted ones, but to conclude every lesson by a lessening of the intensity of the movements. Strictly speaking, every *single* practice ought to be so conducted. We have found it also very beneficial to walk about during the interval of gymnastic exercise, which will prevent people from getting stiff; and, if done after the conclusion of the lessons, permit the body to cool down and prevent the catching of cold &c.

While we have inculcated extreme caution in practising gymnastics, especially with the tender and weakly; we say, on the other hand, that "whatever muscular capability or powers any person possesses, at any given time, should be fully and fairly used and expended. In every lesson and exercise, we must go to the very *limits* of fatigue and exhaustion, without however, ever depassing them."

And here is the place where best to allude to one of the most important advantages which gymnastics will produce in youth. If we again consider and *sum up* the amount of motion or exercise which the children, even of *our* villages, perform up to the age of maturity, it will be found exceedingly great; still more so, if compared with that of the poor child of our lanes and courts, aye, and with that of our streets and squares, constantly pinned down from earliest infancy to the table, or the forms and benches of schools—poor, poor martyrs of our so-called civilization! Thus, the blood, which for health's sake should circulate freely through the whole body, is directed and driven towards the head; either laying, at once, the foundation to a subsequent hydrocephalus, swelled or ulcerated glands of the neck &c.; or, producing those precocious men-dwarfs of intellect, with whom parents pride themselves a short time, to be heard of no more, and to die an early death. For the sake of warning parents of the danger of precocious

mental (cerebral) development, we may just adduce the fate of all those little wonder-children, the juvenile Rosciuses, and Paganinis, and Sontags, and so on, who have all dwindled down to nothing, while (to speak only of music) the Grisis, the Formeses, were, at the same period of life, playing and romping in their rural districts—acquiring first that firmness and strength of bodily constitution, without which no other acquirement is of use, since it cannot be used. All the mind-genius of Napoleon Bonaparte would have been of no avail to him, had he not been able, as he was, to remain, if occasion required, seventeen hours on horseback without interruption.—The orations in the British Parliament, in fine, extending at times to four hours and more, prove also, that to be useful in any branch of human occupation, a person must be strong and vigorous.

THERAPEUTIC GYMNASTICS.

(KINESITHERAPY.)

As it was not intended, in this little work, to enter on the province of *medicine*, properly so called, we have passed over several occasions where it might have been otherwise introduced. A treatise on gymnastics, however, would have been considered incomplete, if the especial healing qualities of bodily exercise should not have been alluded to.

Beginning thus with the mythical times, we find that it was one of the ancestors of Hippocrates, who is considered the inventor of gymnastics as a medicinal agent, although the limits between hygiestic and therapeutic exercises were not then strictly drawn, nor ever can be. Galen says, that Esculapius recommended his patients equestrian exercise in armour, and after having determined what armour they were to make use of, he subjected them to *peculiar motions*, adapted to the nature of their malady. Hence, therefore, gymnastics were dedicated to Apollo, god of medicine, and it seems, that the directors of gymnasiums were always in the habit of treating slight diseases and wounds. The next name after Esculapius, is that of Herodius of Selymbria, master of Hippocrates and director of a gymnastic school. He observed that his pupils gained an extraordinary degree of strength, and that those who were ill were soon restored to health. He successively renounced teaching the Isthmic games and conceived the plan of medicinal gymnastics, the rules of which, however, are said to have been of excessive severity. Hippocrates soon perceived what was defective in his master's system, and recommends their well-regulated use in his books on diet, regimen, dreams &c. After Herodius, Icus of Tarentum is said to have substituted for

the faulty athletic regimen, one based on a well-regulated temperance and sobriety. Galen gives numerous precepts on the application of methodical exercise, in his works entitled, "Commentary upon diet, on preservation of health," &c. &c. Other writers of antiquity and partizans of medical gymnastics, are Diocles, Erasistrates, Enophilus, Phytolemus, Pratagoras, Theon &c., whose works, however, have not reached us. But, with the breaking in of barbarism, the therapeutic use of gymnastics was also doomed to oblivion. It was Mercurialis, a German physician, who first resuscitated its use in his famous work, "de Arte Gymnastica," printed in 1587, and dedicated to the Emperor Maximilian II. He suggested several means, the use of which would increase the strength of the organs, and the whole system of the body. In England, Francis Fuller did much to introduce the therapeutic use of gymnastics, and his treatise (1780) went through six editions. But this department was yet to be *created* for being capable of forming an integral part of medical science, and this task was reserved to the Swede, M. Ling. He was born in 1777, and it was the natural beauties of his native country which first influenced his mind and developed its faculties. He studied Islandic Literature, and became one of the coryphees of Scandinavian poets. Still, a natural impulse led him another way, and he accepted the situation of fencing master, at the University of Lund. Henceforth, he devoted himself to the study of anatomy and physiology, and made the first endeavour to establish (in 1812) an institution of national and therapeutic gymnastics. After some fruitless efforts, *a central institution* was formed in Stockholm, which soon attracted the attention of other governments. But, in the first instance, Ling's chief aim was to make gymnastics part and parcel of national education; wherefore the spacious rooms of the Central Institute were occupied by classes, for the formation every year of 15 or 16 masters, able to teach gymnastics in all the colleges,

and the primary and secondary schools. Persons of both sexes were also admitted as patients, to be treated for different chronical maladies. The course of instruction comprised anatomy, theoretic and by dissection; in fine, anatomy and physiology in relation to the motions of the human body, as well as practical gymnastics in all its branches and applications. In the year 1844, the number of persons admitted into the Central Institute of Stockholm, was 534, of whom 287 were treated for chronic maladies; and the others being instructed, were formed for masters &c. Ling died in 1839, at the age of 62, an age he only attained, through the beneficial influence of the system he had discovered, having had from youth a phtisical predisposition.

Ling, there can be no doubt, had started from the ideas of Gutsmuths and Jahn; but he carried them much farther and extended them into the very domain of medicine. He was the first, who distinguished between *active* and *passive* movements, and discussed their application to the maladies of man. He imagined a complete system of movements (passes), capable of acting on that part of the body where it was required. Thus he arrived at the physiological signification of the movements of the body in general and in especial, and connected their effects with the doctrine of physiology. It became with him also, every day more apparent, that "it was necessary to counterbalance the decline of corporeal strength, and to combat the different infirmities which result therefrom, in the young of the present generation; and thus, to examine closely the method and remedies which can arrest the degeneration of the race, the natural consequences of a spurious civilization."

The following is a brief outline of the system of Ling's *Kinesitherapy:*—The motions of the human body, considered in relation to the cause which produces them, can be divided into *active* and *passive* movements. To the *first* class belong all those which result from organic and vital

contractibility, and those produced by the will; to the *second* class belong those, which are the effect of an external power, which acts either on the whole body, or on any of its parts. The influence of all these sorts of movements on the vitality of the different organic substances, is what is called the *mechanical agent. Specific movements* are called those, whose primitive action and influence is circumscribed to a single organ, or to a determined group of nerves or vessels; and according to whether the will of the patient re-acts against the force which produces that motion, *specific* movements become again either *active* or *passive.* But, as it might seem difficult to understand how motion, or an external mechanical movement, can act on any interior portion of the body, we have first to consider, that the human organism is a *complete* and *undivided unity.* All the components parts of the body form, at a given moment, a given bulk *(volumen);* and every displacement of one of these parts, brings on a corresponding displacement of the collateral parts, corresponding to the momentum of the original movement or *displaceal.*

In as far as the *passive movements* are concerned, here the influence comes entirely from without, and the patient submits to the mere mechanical impression. Thus, according to Ling, every passive movement is a communicated movement, and he distinguishes the following species: "pressure, friction, percussion, knitting (*massage*), shaking, uplifting (*soulevèment*), balancing, ligature; in fine, movements and attitudes which produce sanguinal congestions in one or other organs &c.

According to the influence which passive movements exercise upon the vital properties of organic tissues, and in regard of the facility with which those movements can be directed to organs most important, and situate in the interior of the body, this therapeutic agency may be considered one of the most efficacious in existence. In general, passive movements act on the nervous system as a

vivifying stimulus, which through the extremity of the nerves (immediately acted upon) propagates itself to the central part of the nervous system; while at the same time, by the contact of the rubbed parts with the blood, circulation becomes accelerated and potencised. Moreover, in the same way as the active movements augment and determine the *centrifugal* current of the blood and of the nervous fluid, the passive movements act on the activity of the *centripetal* current of those fluids.

But the specific movements (both active and passive) can again be employed according to two different *methods*—the *direct* and the *indirect*. According to the *direct method*, active movements are employed in atrophy and anemy; and passive movements if there is hyperthropy or hyperemy in any organ of the body. By the *indirect method* the movements are directed to those parts, with which the suffering organ has the most intimate connexion. Active movements are thus employed for provoking more rapidly the exchange of molecules, and the more prompt consummation of the organizing fluid in the parts distant from the suffering organ; we use passive moments for causing an increased absorption in a neighbouring part, and thus a re-action on the suffering organ is effected. Having devoted the whole of his gifted mind to this subject, Ling has not only schematized a whole theory of animal motion, but has deduced therefrom most varied appliances, all systematically adapted to various ailments, all accurately poised as to time, direction, intensity &c. Thus Kinesitherapy has become a new branch of medicine, which being of a lenient and gentle kind, is to be considered an addition to the benefactions to mankind.

But we shall not proceed in this purely medical disquisition, having attained our end, if we have convinced the reader that Ling, the founder of Kinesitherapy has really created a *new science*—destined, with others, to cure the many ailments of present mankind. Combining the

numerous appliances of Kinesitherapy with the already existing host of other remedies, whose number is legion—appliances to which the so-called civilized is subjected, while the barbarian and rude peasant are exempt from them, we find some reason for the *preference* we give to educational and hygiestic gymnastics, whose general introduction would render Kinesitherapy (as well as great part of present medicine) *superfluous*, and therefore secondary to the former.

THE EVOLUTIVE PROCESS AND RESULTS OF GYMNASTICS.

HEALTH.

Chateaubriand, the French statesman and great author, who, subsequently, became a pilgrim to the lands of the red men of America and to Jerusalem, says, in his biography,* that when verging on the age of manhood, often when rising from his sleep, and scarcely dressed, he felt such a life-buoyancy within himself, that he had to start and run off across field and fen and forest, like a wild steed freed of its fetters. Here, then, is a sample of vigorous, uncorrupted and studious youth, and a constitution of body, which maintained and supported this noble individual through the mishaps of his earlier life; still, compatible and combined with the finest mind and tenderest sentiment, and a great activity, which he preserved up to his death, at the age of more than fourscore years. We would fain like to take this youth-condition of Chateaubriand as a sample of, and not as an exemption from, that *primordial* state of *health*, destined by the Omnipotent for the whole race of humanity; and the motto of *Boerhaave*, prefixed to this work, is a sure proof that our assumption is not hypothetical, but shared by one of the first medical men of his age.

Youth and health!—a wonderful complex of being, feeling and sensation, too joyous perhaps for this dark and earthy world. To discuss the value of health is tantamount to the discussing the value of life—after all, an object considered of great import and value by the best of men. It is also

* Memoires d'outre tombe.

matter of deep thought and consideration, that every organic (animal) life in its perfect and nature-ordained state, *implies* the feeling of satisfaction, contentment, happiness!! The cause of most of the melancholy hypochondry and nervous affections, and, in fine, insanity *and* suicide, lays in the unsatisfactory general state of health of the men of the present age; because, as nature (GOD) has formed things in a *certain* manner for a *certain* purpose, they cannot satisfactorily exist but in that manner, just the same as the emerging-up seed of a plant would pine and linger, if covered with a piece of stone &c.

The bodily (sanitary) state of present society is a most untoward one, and only bearable, or rather endurable, *because* the people, who are affected by maladies of all and every kind, are placed out of the pale of sight; there is a portion of (civilized) society, which is to be seen, as it were, and there is another, which is kept out of sight in hospitals, asylums, lunatic and others. Notwithstanding this seeming absence of sick, ailing and most deformed people, the sights in the streets of great towns become every day more appalling, painful, nay disgusting.

The present sanitary movement in this country, the cleansing and purifying of streets and tenements &c. is a most important one; still we must not forget, that in these oft hideous lanes and courts of London, and other large cities—those tenements, which would be shunned by a cleanly-kept dog—we should not forget, that in all such places we shall still occasionally meet with children most healthy and blooming, maidens rosy and cheerful; phenomena, after all, not yet explained in any of our books. We are inclined to ascribe this consolatory anomaly to the fact, that the children or youth alluded to have fortunately kept aloof from a vicious and precocious nerve-life (*nisus sexualis*), which, in others, wastes, absorbs, nay, swamps all the strength and life of their body. A delicate subject, still not to be omitted in a work on

public health. Now, we assert, that it is *gymnastics* (or *nature* or *muscular* life of any kind) which will be the only preventive, lest the other pole of life does not take the ascendancy—which is merely another formula of that which has been the whole theme and purport of the present work. Happy the child whose parents have become impressed with this truth! Happy the young person who has arrived early at this conviction! Still happy they, who at any period of life become aware of this great truth, and thus are enabled to impart greater force and duration to even the last sparks of their life!* Happy indeed, in fine, will be the country, where this great radius of the life of the *ancients* will be added to the advantages of *modern civilization*, without which they are, after all, useless. It will be a great epoch of modern history, when any Sovereign or Government shall have ordered the erection of gymnasiums (lesser or larger) in every open space of our towns and cities —in our parks and gardens—and on our commons—to which, early and late, a serene, innocent and happy youth may resort; when, in every country a central gymnastic establishment, for the training of masters, will have been established; when, in fine, a satisfactory testimonial from a gymnasium will be considered as *essential* as that of any other educational department. Moreover, the gymnast requires no written testimonial; his is one impressed and marked by a higher authority than that of man—an erect, proud, manly (womanly) posture, a warm and animated look, and a form of body capable of enjoying as well as enduring life. "*Contra tales non est lex.*"†

The *evolutive* process, or result of gymnastics, is, therefore, *health.* And if at any former period of human history it was worth while to be able to participate in the advantages and results of social civilization, it is so in the

* We have a pupil in our Gymnastic Academy, 82 years old; he began gymnastics when he was 64; others have done so at the age of 57 &c.

† "Against such there is no law."—Galat.

present one, when the whole world, and its beauties, and enchantments and charms have become open and accessible to the wise and the healthy. Countries like Italy, and Switzerland and Egypt, once only to be reached at great expense and trouble, are now placed at the very door of the wealthier ranks of society, to whom, moreover, a vast number of the most delightful enjoyments and studies are now opened; while, the mines and backwoods of Australia and America supply sustenance, aye, and an easy *independence* to any one who has muscles and nerve to gather the many plentiful fruits of those mostly hesperian climes. In a very short time, even now, want, or destitution, or harassing toil will be banished from the earth, *always understood* for the strong, the healthy, and vigorous; while, on the other hand, the sickly, debilitated and ailing will find themselves as though expelled from the paradise, which God's providence has re-opened to mankind in these later days.

We do not pity nor commiserate any person who has to work from morn to night—a lot which has been our own for many years past—provided that person be *well;* as an adequate portion of occupation and employment is one of the zests of life: the healthy and vigorous, greeting cheerfully and joyously the rising sun, whose splendour and brilliancy refulge, as it were, in a healthy and expanded frame; rejoicing equally when the advent of eve calls him to a cheerful and serene repose. But, Syziphus-like is the lot of those most unfortunates, who, with an emaciated, drooping frame, which like a burthensome weight shackles and bears down their whole sense of being, are compelled to go to an irksome and nearly excruciating toil. O! would that these frail pages would induce our Great and Lawgivers to re-open to them the springs and sources of a new regenerate life!—because *their* lot is of all the most unbearable.

But let us once more turn from these shade-sides of

the present period, to throw out a few hints to those, who have kept their nerve-life under proper control, and have, by a rational and energetic use of their muscular powers, attained that highest and inestimable blessing—*health*. To such, *Nature*—sublime, benign Nature—opens all her treasures—a mother rejoicing in children who have faithfully kept her holy ordinances and precepts. Besides the many parks and gardens now opening to the great mass of the people, there is no country or place so barren and destitute, as not to possess sites and localities, which, while they have, or might have, inspired poets, will delight any one not imbued with and corrupted by a vicious or luxurious mode of life. The early-rising societies, an important *sanitary* movement, are yet in their infancy with us, while, for instance, at Dresden, rather refined concerts are performed in the forest of the great park at five a.m., during the whole summer. Thus, *true* civilization will converge in its results from different radii, to dispel, also, what is called idle frolic and revelry, which, with the humbler classes, often end in an early, pitiful sick bed, or death. But, our railways and steamboats possess another, than a merely speculative and commercial meaning. A few hours will now bring the Londoner into the sublime scenery of the lakes, to Wales and Scotland; a few days' sail to Spain or Italy, localities and countries which, once seen, become "a part of sight"; and leave many a sweet recollection for those clouded days and nights, from which no mortal is exempt.

But, turning from these rather ethic considerations to stern reality; a more thinking, considerate, and active (nature) life, will also imply many of a material, and tangible kind. Do our readers suppose, that even the clerk, the shopman, nay, the artisan and operative of sound and vigorous health and strength, who has thus reaped the advantages of these merely bodily acquirements, will not become a sharper, a more clever, and business-like man? No doubt he will. The journeyman printer, Benjamin Franklin, who drank

nothing but water, swam once a race with an English Lord in the Thames, which he won. They met, subsequently, in more troubled waters, as the representatives of their respective countries, when Franklin negotiated and achieved the independence of his native land.

As museums are now growing up over the length and breadth of the country, the vigorous and strong of any grade of society, may plunge also (in his leisure hours) into the vast domain of *natural history*, and find an inexhaustible source of amusement, and, if he chooses, of profit in the collection of plants, insects, birds, or rocks and minerals; and as we like to bring the tenets of our doctrine to every person's door, we may state, that the founder of French Geology (Palissot) was a mere potter; and there have been also in this country, men of quite limited means, who have reached some degree of celebrity by their labours in natural history. The conservatories and hot-houses of the rich and affluent—their forests, parks, gardens and orchards—their aviaries, preserves and fishponds—their collections of natural history—will afford them the widest scope for observation, study and research,—as long as they themselves will be *healthy*, and perceive in themselves the reflex of those great organic laws and arrangements of nature; while, on the other hand, if they have, to repeat for the hundredth time, ruined their health through their own fault or ignorance, all the perfection, splendour and life of nature will only be a *pungent reproach* to them, adding many more exclamations to that of the late President of the R. S.—'*valde miserabilis!*' This all, then, would imply instruction and recreation to be obtained in the open air, conjointedly with motion and exercise, while it would be a valuable complement of that "taste for reading," which Sir John Herschell considers the most valuable gift, to be possessed by any sensible person.

Having entered, in a work of intended small compass, on matter so extensive as the health (and physical well-being)

of man, we have been constantly obliged not to expand, but to contract and confine the range of collateral subjects and thought. And thus, we could only passingly allude to the ethic and moral bearing and influence of gymnastics. It is, therefore, only in our concluding pages that we have to state, that Jahn, the great founder of German *Turnkunst*, was so fully aware of the wide bearing of physical education, that he connected it with, and built upon it, a whole system of improved society. Col. Amoros, director of the normal gymnasium of Paris, a gentleman, surely, quite foreign to German philosophy, nevertheless, entitled his work, "Manuel d'éducation physique, gymnastique et morale."* Whilst Jahn delivered, at the conclusion of every gymnastic lesson, a discourse on some topic or other of general utility; Colonel Amoros called poetry and music to his aid, and says, that "while combining the advantages of *words*, *melody*, *harmony* and *rhythm*, he availed himself of these four agencies for implanting in his pupils by the word, useful ideas and grand sentiments; by melody and harmony, taste, gracefulness, precision and delicacy; and by the rhythm, the laws of order and regularity for all the duties and performances of the whole day." On these subjects he enters, in the above work (vol. I. p. 110, *et seqq.*), into elaborate details, and adds, that he introduced this system first at Madrid, under the auspices of King Charles IV., and, that the Infant Don Francisco de Paula was one of the pupils thus educated.

It was the result of earnest consideration, that we resolved on not following the path struck out by either Jahn or Amoros, and to treat gymnastics quite distinct from the subjects mixed up with it by the great gymnasiasts of Germany and France. Our reasons were chiefly founded on the absolutely different circumstances of these two countries, compared with England. Here, the freedom of conscience, press and discussion—a number of institutions for intellectual culture—lectures delivered by the first men of

* Paris, 1830, 3 Voll. 12mo.

the land to most numerous audiences—circulating and other libraries—large schools for vocal music &c.—afford ample means for supplying those wants, which may exist, in this respect, both in Madrid, Paris, and even Berlin. We must, however, observe, that it was not till *after* all the foregoing agencies had begun to come into operation here, that physical education could have been broached with any hope of *final success*. This period of a complete and salutary revulsion of the educational and cultural institutions of the country, is now near its accomplishment. And thus, in fine, the physical education of our youth, the improvement and invigoration of the more adult, will *now* be better valued and understood, being one of the main and connecting links of the grand improvement and advancement of the times. Thus, we trust, that we may confidently hail the advent of a successive and energetic progress of the *whole condition* of man—in which gymnastics will not fail to occupy their due and appropriate place.

Novus ab integro nascitur rerum ordo!

J. Bradley, Printer, 78, Great Titchfield-street, St. Marylebone.

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MEMBER OF THE LEGION OF HONOUR OF FRANCE, ETC., ETC.

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EXTRACT

FROM THE REGISTRAR-GENERAL'S RETURN.

"It is admitted that diarrhœa *generally* precedes cholera, and that "diarrhœa should never be neglected for a single hour, in a time "of epidemic cholera. If it be established that the latter disease "is invariably, or almost invariably, preceded by a well-defined "stage of illness which is amenable to medical treatment—it will "at once allay alarm, and be a most important addition to the "resources of medical science." — *Registrar-General's Return, October* 8, 1853.

The object of the following inquiry is to show that diarrhœa is the first, the most essential symptom of cholera; and that in every case of cholera, a diarrhœa, for a *few hours*, or *for a few days*, or for a *few weeks*, precedes, and gives the patient warning that an attack of spasms, vomiting, etc. — that an attack of cholera, in fact—is coming on; and to point out, also, that consequently cholera has four distinct stages:

The stage of diarrhœa—the stage of spasms, vomiting, etc.—the stage of collapse—and the stage of reaction.

Heretofore the term cholera has been given only to the second, third, and fourth stages; the first stage, that of diarrhœa, has not been considered as essential to the disease.

TO THE REGISTRAR-GENERAL.

Sir,—When cases of cholera began to appear here in August last, you were so good as to call the attention of medical informants to the necessity there was, where death had resulted from an attack of cholera, to state on the certificate of death, whether the patient had laboured under an attack of diarrhœa previous to the attack of spasms, vomiting, purging, etc.—previous, in fact, to an attack of cholera—and if so, for how many hours, how many days, or how many weeks, the patient had laboured under this diarrhœa previous to the attack of cholera.

And you also requested them to state distinctly those cases where spasms, vomiting, purging, etc., had come on suddenly, and without any premonitory diarrhœa.

You are aware that I had made it my duty to see the relatives and attendants on the last moments of those reported to you as cases of cholera without any premonitory diarrhœa, in order to ascertain the correctness of the returns made.

Now that cases of cholera have ceased to appear

and now that we may consider the epidemic to have passed away, I take the liberty to place before you the result of my inquiries.

From July last to the 11th of February, 1854, eight hundred and seventy-eight deaths were registered of cholera.

Out of this number, twenty-one cases were reported to you as cases of cholera without any premonitory diarrhœa; that is, that twenty-one persons, said to be in perfect health—free from diarrhœa—were suddenly seized with spasms, vomiting, purging, etc., without having received any warning by a diarrhœa, or by any symptom, or train of symptoms, that they were about to be attacked by cholera.

I have seen the relatives of those who have died, and the medical gentlemen who attended them in their last moments, and who had certified that these twenty-one cases were cases of cholera without any premonitory diarrhœa; and on investigating more closely into the history of these twenty-one cases, in the presence of these medical gentlemen, it was found that fifteen of them had a diarrhœa for some hours —or some days—previous to the attack of spasms, vomiting, purging, etc.; previous, in fact, to the attack of cholera, as you may see by taking the trouble to cast your eye over the first fifteen cases in this Report.

You will also be pleased to remark, in the sixteenth case in this Report—that of the mate of the *Anna Christina*—that the captain of that vessel acknowledged to the Swedish Consuls, Messrs. Tottie and Sons, the day before the mate was taken ill, that he had several cases of severe diarrhœa on board, but

that he refused to call in medical advice, as he wished to leave the port of London the next day with a clean bill of health, so as not to subject himself, his crew, and his ship to quarantine, on his return to Norway.

When the mate was taken ill, the same motive which prompted him to refuse to attend to Messrs. Tottie and Sons' recommendation the day before to have medical advice for his men, prompted him, no doubt, to assert to Dr. Baines that the mate was perfectly well up to the moment he was seized with spasms, vomiting, purging, etc.—with cholera. Therefore, as the captain had an interest to deceive, we cannot take his word that the mate was in perfect health up to the time he was seized with cholera; and as Dr. Baines speaks only from what the captain and some of the crew told him—who were, with the captain, interested in concealing the truth—what the Doctor says cannot be taken in evidence. And besides, he informed me that he had not inquired at what time the diarrhœa had begun before the spasms, vomiting, purging, etc., came on, or whether the spasms, vomiting, purging, etc., had come on at once, without any previous diarrhœa. So that his testimony, even as a medical gentleman, fails; for he did not examine into the history of the case as he, as the medical attendant, was bound to do.

To resume, therefore, we have the certainty that there were, the day before the mate was taken ill, several severe cases of diarrhœa on board the *Anna Christina;* and we have the certainty that the captain and the crew had a motive to conceal the truth. And further, we have the proof, by Dr. Baines's own acknow-

ledgment, that he did not inquire into the history of the case as he, the medical attendant, was bound to do. Consequently all the collateral circumstances force us to conclude that the mate had a diarrhœa for some time previous to the attack of cholera, and that this is not a case of cholera without a premonitory diarrhœa.

As to the seventeenth case, you will remark the loose manner in which this case was inquired into, and how little it says for the accuracy of proceeding at the London Hospital.

If we cannot say that the eighteenth case had a diarrhœa before she was attacked with spasms, vomiting, etc., the medical attendant was not justified to certify, without inquiry, that she had no diarrhœa. We are, however, left with the certainty, that this woman was not struck down from perfect health by spasms, vomiting, purging, etc.—by cholera, in fact; as she complained, before going to bed, that she felt very ill,—but with what, no one knows.

The nineteenth case is one of hypercatharsis, in consequence of an overdose of purgative medicine, and is not one of cholera.

The twentieth case is one of retrocident gout, and not one of cholera.

The twenty-first case is one of strangulated hernia, and not one of cholera.

To resume; fifteen cases out of the twenty-one had positive diarrhœa for a few hours, or a few days, previous to the attack of spasms, vomiting, etc.

The sixteenth case.—The collateral circumstances force us to conclude that this man laboured under diarrhœa previous to the attack of spasms, etc.

The seventeenth.—Nothing is known of the previous history of this case.

The eighteenth.—The patient was ill previous to the attack of spasms, vomiting, etc., but with what, no one knows.

The nineteenth, twentieth, and twenty-first cases cannot be referred to cholera.

Consequently you have now before you the proof that during this outbreak of cholera in London, in which eight hundred and seventy-eight persons lost their lives from the disease, not one of these but had a diarrhœa—for some hours, some days, or some weeks—previous to the attack of spasms, vomiting, purging, etc.; previous, in fact, to an attack of cholera.

I may here add, that this is not the first outbreak of cholera in which I have undertaken such an inquiry as the above. I did the same in Paris, in 1832; in 1848 in this country, and again in 1849; in which last outbreak I inquired into the previous state of health of 3,902 cases of cholera, and I did not find one single case which had not had a previous diarrhœa.

I have made the same inquiry from hundreds of medical gentlemen, both on the Continent and in this country; and although several have asserted that they had had cases of cholera without any premonitory symptoms, yet when such cases were re-examined by these gentlemen and myself, it was found that either their history had not been carefully inquired into, or that the medical attendants were not aware what was meant by a premonitory symptom.

In conclusion, permit me to call your attention to the superficial manner in which too often medical gentlemen make their investigations at the bedside, with

regard to that most important and essential point,—the state of health of their patient previous to their being summoned to his assistance.

If this attention to the previous history of the patient's case had been given in all countries, it is impossible to suppose that we should only now, after epidemic cholera has for seven-and-thirty years attracted the attention of the whole civilised world, begin to have some knowledge of that first, most essential, and most invariable symptom of the disease —diarrhœa—which gives warning of the approaching danger.

Permit me also here to express my most sincere thanks for the care with which you have been pleased to press on the attention of your medical informants the necessity there was to state, in every case of cholera, whether a diarrhœa had or had not preceded the attack; and if it had, how many hours, how many days, or how many weeks had elapsed from the first liquid evacuation to the first attack of spasms, vomiting, etc.—of cholera, in fact. And permit me further to hope, that if it is the will of Divine Providence to inflict on us another outbreak of this scourge, that you will continue to press on the attention of your medical informants, as you have done in this outbreak, the necessity of stating, in every case of cholera, whether a diarrhœa has or has not preceded an attack of spasms, vomiting, etc.; and where a diarrhœa has preceded the attack of cholera, that they should report distinctly the time which has elapsed from the first liquid evacuation to the first symptom of spasms, etc. I need not tell you, that by so doing,

you will do more to give us an accurate knowledge of the rise and progress of cholera, and thereby do more to benefit the public at large, and the medical profession in particular, than any individual, or any set of individuals, have yet done.

POSTSCRIPT.

In taking leave of the inquiry into the evidence of the existence, in every case, of a diarrhœa previous to an attack of cholera, allow me to avail myself of this opportunity to reply to several communications which have been addressed to me, relative to the symptomatology and etiology of the disease.

I am reminded, by five communications, that I am not the first who has called attention to the existence of a diarrhœa previous to an attack of cholera. One gentleman calls my attention to the work of Dr. Venables on cholera, three other gentlemen remind me of the opinion of some of the medical profession in India, and a fifth refers me to the opinion of Dr. Maccan on the same subject.

There cannot be a doubt but that accurate observers, in all countries, have remarked the frequency of a diarrhœa previous to an attack of cholera; but it is also certain that, in all countries, cases of cholera have been reported as having taken place without a premonitory diarrhœa. So far as I am aware, in no country has an inquiry been undertaken and carried out to ascertain whether, in every case, a diarrhœa preceded an attack of cholera, or whether cholera can occur without any premonitory diarrhœa.

In this country, the General Board of Health, which

assumed that diarrhœa was a premonitory symptom of cholera, assumed also that cholera does, in some cases, occur without any premonitory diarrhœa (see their Report published in 1850), leaving the question where they found it.

The College of Physicians of London have instituted no inquiry for themselves into this question; they have copied from others, and they have been such good copyists that they have copied the errors of their prototypes. They, too, have assumed that cholera can attack suddenly without giving any warning of its approach by a diarrhœa; and they, too, have left the question where they found it.

Therefore, neither in this country, nor in any other country, that I am aware of, has the inquiry been carried out to show that in all cases of cholera there is a premonitory diarrhœa for some hours, some days, or some weeks previous to the attack of spasms, vomiting, purging, etc.—previous to an attack of cholera, in fact.

However, provided the pathological fact which I have endeavoured to point out be found useful, the gentlemen who have taken the trouble to address me, may claim for themselves or for their friends any portion of credit that may be given to the inquiry. I am anxious to establish the pathological fact, not the personal question.

A gentleman informs me that he has had two very severe cases of cholera, where there was neither purging or vomiting; and he consequently concludes that I am wrong in laying it down as an invariable rule that cholera is always preceded by a diarrhœa.

But this gentleman has not stated on what symptom, or on what train of symptoms, he recognises that these two cases were cases of cholera; nor has he mentioned whether his patients were males or females.

Happily, however, he says they have recovered, and he gives the credit of their recovery to the free administration of opium and calomel; and he does me the favour to advise me to have recourse to this plan of treatment, which, he says, has never failed in his hands.

The gentlemen who acted with me in 1849 may remember that several such cases, without vomiting and without purging, were reported as cases of cholera by gentlemen who held a distinguished place in public estimation in their locality. Yet when these cases were inquired into, in the presence of the medical gentlemen who had reported them, these gentlemen were often themselves the first to acknowledge that they had taken a case of *hysteria* for a case of cholera.

I do not mean to say that the two cases reported above are cases of hysteria, nor do I wish to prejudge the cases. As I am seeking for truth, if this gentleman will favour me with his name and address, if he will permit me, I will do myself the pleasure of calling on him, and inquire more into the two above cases.

Another gentleman states that he had a case of cholera without spasm, vomiting, or purging, "and that it was proved *by an autopsy that it was a true case of cholera, as the whole intestinal canal was filled*

with the characteristic serous fluid." And he also concludes that I am in error when I say that cholera is always preceded by a diarrhœa. But this gentleman gives no history of the state of the patient's health previous to his visit, which he ought to have inquired into, and stated. However, he has said enough to show that, before he saw the patient, there had been a very severe diarrhœa; for he says that "the whole intestinal canal was filled with the characteristic serous fluid." Therefore, there could not have been any fæcal matter in the intestinal tube, or it would have discoloured the serous fluid.

It is well known to every medical practitioner how difficult it is to clear the intestinal tube of all the fæcal matter, even by repeated doses of strong purgative medicines. As this patient had no fæcal matter in his intestinal tube, it was either carried off by violent purging, or it had turned to the characteristic serous fluid of cholera,—which would be a discovery in pathology.

Is it not possible that this gentleman saw his patient only in the stage of collapse, when for some time before death the spasms, vomiting, and purging cease, and life ebbs away, while the unfortunate patient is free from physical sufferings?—and that this gentleman forgot, as is too often the case, to inquire under what symptoms his patient laboured previous to his being called to his bedside?

However, if this gentleman will favour me with his name and address, and if he will allow me, we will go together, and make some further inquiries from this person's relatives how he first was attacked with the disease.

The General Board of Health put forth a statement, in the *Times* newspaper of the 8th of November, 1853, relative to a supposed case of cholera, which had proved fatal, at Lewisham, on the 28th October, 1853, "that the mere absence of purging and vomiting, at the time, is no evidence that the case was not a case of malignant cholera. Indeed, the very worst cases of this formidable disease are those where these symptoms are wholly or partially absent, the powers of life being struck down at once by the poison."

In consequence of the above statement, I waited on the General Board of Health, to ascertain on what grounds they had made the above statement; and I there saw the President of the Board, who candidly acknowledged that he knew nothing whatever of medical science, and nothing of cholera in particular; but he was so kind as to refer me to a member of the Board, who was evidently as well informed as the President. This gentleman replied to my inquiries, that such cases as the above were reported to the Board, and that the Board had taken it for granted that they had been reported correctly. On pressing him, as it is a scientific question of importance, to give up his authority, that I might make further inquiries, he evaded giving a direct answer, by referring to what was related to have occurred in other countries, and especially in India.

As the point is one of the highest importance to ascertain whether cholera strikes down at once, in any case, the powers of life, without giving a warning of its approach by a diarrhœa, I addressed a letter, on the 23rd November, 1853, to the President of the

General Board of Health, in the hope that I should obtain from the President the information which the member of the Board, to whom he had referred me, could not give. (See No. 22.) But that letter has remained unanswered. I shall leave you to form your own opinion as to the conduct of the President, and that of the General Board of Health, in this instance, who have put forth a statement more than doubtful, and who have not the candour to admit that they were in error.

It is much to be lamented that while there have been three severe outbreaks of epidemic cholera in Great Britain within these six years, during which the General Board of Health have had the full power to dispose of the weight of the British Government for the purpose of studying the disease, and for the purpose of bringing relief to the afflicted, that the Board have not studied scientifically one single question connected with the disease,—that they have not done one single thing towards relieving suffering man. Nay, so far from elucidating any point connected with the disease, they have, by assertions more than doubtful, as above, given a false direction to scientific inquiry, and have thereby retarded the progress of those who are anxiously seeking for truth.

Three medical officers, who have been a long time in India, state that they have seen several outbreaks of epidemic cholera there; and that the attack of the disease is so extremely sudden, that frequently an individual, at his usual occupation, is suddenly seized with cramps, vomiting, purging, etc.,

without having had warning of the approach of the disease by any symptom whatever, and is carried off in a few hours.

Did these gentlemen carefully inquire whether their patients were perfectly healthy, and free from any diarrhœa at the time they were seized with spasms, vomiting, purging, etc.? Will they forgive me if I say, that I have a doubt that they made the inquiry? I am led to this doubt by the statement of one of them, who gives, as an example of the rapidity with which cholera runs its course in India, the following instance. A trumpeter of the 51st Regiment blew the trumpet for the officers' dinner so strong and so correctly as to be the subject of remark; and yet only a few minutes after, he was seized with cholera, and died before the officers' dinner was over!

I have the authority of Mr. Mouat, surgeon of the 9th Regiment of Foot, to say that he was the person who remarked how strong and how correct this man sounded his trumpet, and that an hour, or an hour and a half after, he saw the man in collapse. But I have also the authority of Mr. Mouat to say, that he did not inquire whether this man had or had not a diarrhœa previous to the attack of spasms, etc.

That the patients of the above three gentlemen were at their usual occupation, and apparently in perfect health, is no proof that in reality they were not labouring under a diarrhœa,—perhaps for some days, or some weeks. If you will take the trouble to refer to Cases Nos. 6 and 7, you will see that these persons believed themselves, and they were believed by their friends, to be in perfect health up to the moment they were seized with spasms, vomiting,

purging, etc.; and yet these persons had a diarrhœa on them for a longer or shorter period, which they did not attend to, because it was a painless diarrhœa. And further, if you will refer to your own weekly return of the 27th of August, 1853, you will see the case of a ballast-heaver, who had in the morning a diarrhœa which he did not heed, and died in seven hours after the first evident symptoms of cholera appeared.

But I will not detain you with referring to cases, to prove a fact now well established,—that individuals may have a diarrhœa on them for weeks without feeling any weakness in their mental or physical powers, and may appear to all about them to be in perfect health; yet a few moments after, they are attacked with spasms, vomiting, purging, etc., and carried off in a few hours. It is such cases as these which have led superficial observers to suppose that cholera strikes down at once an individual in perfect health. They forgot to inquire into their patients' state of health immediately before the spasms, vomiting, purging, etc., came on, and whether they had or had not a diarrhœa previous to the attack of spasms, etc.

Two gentlemen inquire whether I have remarked that the disease was more virulent and more rapidly fatal in this last outbreak than in 1832-48-49. I have paid as much attention to the subject as I am able to do, and I must say that I have not observed any increase in the virulence of the disease, or that it was more rapidly fatal in the last than it was in the three former outbreaks. I have seen the disease

come on as insidiously, by a painless diarrhœa, which did not attract the patient's attention, and ran its course from the first symptoms of spasms, vomiting, purging, etc., till life was extinct, as rapidly in the first outbreak as it has done in the last one; and I see no reason whatever to suppose, if cholera reappears this season epidemically amongst us, that the disease will be more virulent or more rapidly fatal then, than in former outbreaks.

If the General Board of Health, who have put forth the opinion that there is a coming outbreak, and that it will be more virulent and more rapidly fatal than former ones, had been acquainted with medical science, and with cholera in particular, they would not have established their opinion on the assertion, "that now the stage of approaching cholera is absent." No medical gentleman knows as yet more than that every case of cholera is preceded by a diarrhœa. Happily, however, every case of diarrhœa does not run into cholera; but no medical gentleman can yet tell what diarrhœa will run into cholera, and what will not. Formerly, rice-water evacuations were supposed by superficial observers to be the pathognomic symptom of approaching cholera, but more careful observations have proved that this is an error; consequently the General Board of Health's assertion, that we shall have another outbreak of cholera in the ensuing season, and that it will be more virulent and more rapidly fatal than any previously known, is not supported by any physical sign, or by any pathological fact.

It is, indeed, painful to see that the General Board of Health, instead of studying scientifically

the disease with which they have to deal, palm on the public the fruits of their untutored imagination for the fruits of accurate observation. Are they not aware that by putting forth assertions unsupported by, and contrary to, facts—as they have done in this instance, and as they have done in their Report on Cholera for 1848-49*—that they have given a false direction to scientific researches on this most important disease; and that they have thereby injured, not advanced, the public interest?

I am asked whether I consider the cholera a contagious disease or not. The question whether the disease is contagious or not, has not yet been scientifically investigated; but in every country it has been decided according to the fears, or according to the supposed interest, of each.

When cholera first appeared in this country epidemically in 1831-32, the then Sanitary Commission pronounced it a contagious disease without inquiry.

When it re-appeared epidemically again in this country in 1848-49, the General Board of Health assumed that it was not a contagious disease; but proved at the same time that it was imported into England,—hence a contagious disease†.

It might be permitted to the Sanitary Commission, imbued as they were with the idea of contagion, to

* See their Report on Epidemic Cholera, for 1848-49, page 14. See the Registrar-General's Report on Cholera, for 1848-49, page xi., drawn up by William Farr, Esq.

† See Case, No. 23.

give way to their fears, and to speak from their apprehensions, rather than from their cooler and well-informed judgment.

It might also be allowed to the General Board of Health, composed of noblemen and gentlemen, totally and completely ignorant of medical science, and of the manner of proceeding with and carrying out a medical inquiry, to assume that cholera is not a contagious disease, and to prove that it is a contagious disease.

But no such liberty can be permitted to the College of Physicians, who assume to possess the best medical information in the empire, and who have had their attention specially called to this disease for these seven-and-thirty years, and who have been two-and-twenty years composing their monograph upon it. From the College, therefore, we were bound to expect a perfect work, on the symptomatology, pathology, and etiology of cholera, which would remain as a monument of what was known, and be as a beacon to guide future pathologists to fresh discoveries in this important malady.

But if the hopes of the profession were great that the College of Physicians of London would, at last, throw some light on the symptoms, pathology, and etiology of cholera, these hopes have been sadly disappointed. The College have not studied one single question connected with cholera; they have copied from others, and, as was said before, they have copied their very errors,—and therefore they have not advanced our knowledge of cholera on any one single point.

It has been stated that the College had not

ascertained what are the symptoms of the disease, that they had copied from others on this most important point, and that they had copied their very errors.

We find on the question of the etiology of disease, the College still copying from others, without any investigation for themselves; wasting their time, and the time of those anxious for information, in passing in review wild hypotheses. Surely the College of Physicians must be aware that medical science is founded on well-authenticated facts, and not on hypotheses; and that their first duty was to collect for themselves well-authenticated facts as to the rise, progress, and termination of cholera, before they attempted to enter into the consideration of its etiology.

I submit, therefore, that since the College of Physicians have not shown that they have made themselves masters of the symptoms, anything they may say as to the cause of the disease must be considered as mere unfounded assertions unworthy of attention,—just as unworthy of attention as would be their prescription at the bedside, if given before having ascertained under what disease their patient laboured.

Consequently, whether we look to the opinion of the Sanitary Commission, whether we look to that of the General Board of Health, or whether we look to that of the College of Physicians, we are forced to conclude that the question of the etiology of cholera has not as yet been scientifically studied in this country.

Called to give an opinion on this question, whether

epidemic cholera is or is not a contagious disease, I beg leave to say that, if I turn to your Weekly Returns of births and deaths, I find an epidemic diarrhœa prevailing every year in this country, more or less severe, from the end of July to the month of November.

On inquiring at the same time into the state of health of that portion of the population which are not labouring under diarrhœa, it is found that all are sensible that the functions of the stomach and bowels are disturbed, as they have more flatus, and are more annoyed by borborygmus than usual; that those who are habitually costive, and pass hard fæcal matter, now have more frequent calls to relieve their bowels, and that they pass soft fæcal matter. And further, that that portion of the public who neither labour under diarrhœa, nor are annoyed by having their stomach and bowels disturbed by an excess of flatus, or by borborygmus, have, however, their stomach and bowels now so sensible to purgative medicines, that half, or one-third, or one-fourth of the usual dose will act violently, and even destroy life.*

I have observed the same epidemic, diarrhœa, to prevail yearly in the above months in Spain, Portugal, Canada, France, Belgium, and Ireland; and this yearly diarrhœa in those countries is never supposed to depend on contagion.

Formerly it was supposed that it depended on the use and on the abuse of unripe fruit; but by referring to your Weekly Returns, it is found that

* See Case 19.

the majority of deaths from diarrhœa at this season of the year falls on children below a year old, who cannot use, or abuse the use of, unripe fruits.

If I refer to my own personal experience, I find that when in charge of three military hospitals at Coimbra in Portugal, in 1812, which together contained above 2,000 patients, diarrhœa was very fatal, although no fruit was allowed to pass the sentries into the hospital. The same thing occurred at the hospital at Maya, in Spain, the next year; and again in the year 1815, in the hospital at Valenciennes; and subsequently in the cavalry hospitals belonging to the army of occupation quartered about Calais and Boulogne-sur-Mer in 1816, 1817, and 1818. Therefore, whether I refer to your Weekly Returns, or whether I refer to my own personal experience, I must remain convinced that the use and abuse of fruit does not cause this universal derangement of the functions of the stomach and bowels of whole populations from July to November yearly; and further, that no one has ever thought that it depended on contagion. All who have a right to hold an opinion on this subject, consider that it depends on atmospheric influences with which we are as yet not acquainted.

If, again, I refer to your Weekly Returns, I find that during the prevalence of yearly epidemic diarrhœa, sporadic cases of cholera occur, which are called summer, English, etc., cholera; and on inquiring into the symptoms of these cases, I found that invariably the attack of spasms, vomiting, purging, etc., was preceded by an attack of diarrhœa for some hours, some days, and some weeks, and that in no instance

have I found a case so called without its having been ushered in by a diarrhœa. I may add, that I have seen sporadic cholera in Canada, Portugal, Spain, France, Belgium, and in Great Britain and Ireland,—I have seen it in camps and in quarters, in hovels and in royal palaces; and in all these different countries, and amongst all these different ranks of society, I have uniformly found it ushered in by a diarrhœa of a longer or shorter duration. In none of these countries, nor amongst any of these different ranks in society, has sporadic cholera been thought to depend on contagion.

As I have before stated, I have now seen four severe outbreaks of epidemic cholera; and in all these outbreaks I have seen an epidemic diarrhœa usher in the epidemic cholera, rage with it while the cholera raged, and persist after it had disappeared; and I appeal to your Weekly Returns during the last three outbreaks of cholera in this country, viz., 1848, 1849, and 1853, in support of this observation.

I have shown in the foregoing pages, that during this outbreak of epidemic cholera in London, every case of cholera was ushered in by a diarrhœa for, I repeat, a few hours, a few days, or a few weeks, previous to the attack of spasms, vomiting, purging, etc.; and I again repeat that I have never found, in any of the outbreaks of epidemic cholera which I have witnessed, one single case of a person, in perfect health, struck down at once with spasms vomiting, purging, etc. Consequently, as to the symptoms of epidemic cholera and those of spo-

radic cholera, we find them identically the same in both; both are ushered in by a diarrhœa, and both run their course with the same rapidity, either by destroying life a few hours after spasms, vomiting, purging, etc., have come on, or disappearing as suddenly, and leaving the patient only labouring under weakness.

But not only have I found that the symptoms of epidemic cholera were identically the same with those of sporadic cholera, but, on inquiry amongst the population where epidemic diarrhœa and epidemic cholera raged at the same time, I have found that that portion of the population who were not labouring under diarrhœa had the functions of their stomach and bowels disturbed by flatus and borborygmus, and that they had a pressure on the sphincter of the anus as if their bowels would be relaxed independently of their will; that that portion who were liable to costiveness—passing only every two, three, four, or more days, hard fæcal matter—have now every day one or two passages in their bowels of soft fæcal matter; and further, on attending to the action of purgative medicines on that portion of the population which appeared to have their bowels in their normal state, I found that a half, one-third, or one-fourth of the usual dose of purgative medicines acted now violently, and in some cases did destroy life; as you may see by Case No. 19 in the Report.

Consequently, whether I look to the symptoms of epidemic cholera as compared with those of sporadic cholera, I repeat, I find them identically the same; or whether I look at what takes place amongst the

population who are not labouring under diarrhœa, where epidemic cholera prevails, I find the functions of their stomach and bowels affected in the same way as when sporadic cases of cholera exist. It therefore follows, that as the symptoms of epidemic cholera are identically the same with those of sporadic cholera, and that when either epidemic or sporadic cholera exists, the functions of the stomach and those of the bowels of the population are affected in the same manner in both, that as sporadic cholera is not a contagious disease, neither is epidemic cholera.

Not only have I arrived at this conclusion,—that epidemic cholera is not a contagious disease,—by an attentive inquiry into its symptoms and into the symptoms of sporadic cholera, and by comparing the symptoms of each, and also by an attentive inquiry into the state of the functions of the stomach and bowels of the population where cholera exists either epidemically or sporadically—but I have also inquired whether, when cholera is epidemic in a locality, the disease can be conveyed from it to a healthy one by human intercourse, or whether it can be communicated to a healthy person by touching or by washing the soiled clothes of those labouring under the disease; and I have uniformly found, that where it was reported that an individual had arrived in a healthy locality from one where epidemic cholera prevailed, and that he had infected it, that the premonitory epidemic diarrhœa was prevailing previous to the arrival of the individual supposed to have brought the disease; and where it was asserted that persons had caught the

disease from washing the clothes of persons labouring under epidemic cholera, I have found that either they had not washed these clothes, or that they had themselves the premonitory diarrhœa on them previously.

Without troubling you with the details of a number of inquiries of this kind which I have made, permit me to place before you one of each, which will exemplify the whole.

In 1849, a carrier between Ruslip, near Uxbridge, and London, was said to have brought the disease from London to Ruslip, to have infected first his mother, two children, and a female,—all living together, who were the first victims,—and from them the whole village, by which fifty or sixty persons were attacked, and fifteen had fallen a sacrifice to the disease.

I went to Ruslip, and I there saw the three medical gentlemen who attended the locality, the carrier who was supposed to have brought the disease into the village, who was then convalescent, the friends and relations of those who had died, those who were then labouring under the disease, and those who were recovering from its attack.

The three medical gentlemen informed me that for several weeks previous to the illness of the carrier diarrhœa prevailed epidemically in the locality, and for miles in the country about, so that in every house one or two, or more, of the inmates had a diarrhœa.

The carrier informed me that he had a diarrhœa for two weeks previous to being seized with spasms,

vomiting, purging, etc., and that his mother, who was the first victim to the disease, boasted the night he was taken ill that she had had a diarrhœa on her for some weeks, but that she was so strong that nothing could hurt her. He also informed me that the children and the female, who were the next victims, laboured under a diarrhœa previous to their being seized with spasms, vomiting, purging, etc.

The friends and relatives of those who had died admitted that some had a diarrhœa previous to the carrier being seized with spasms, vomiting, purging, etc., and that others were attacked with diarrhœa after the carrier had been taken ill. And all those who were now labouring under the disease, or who were convalescent from it, admitted—some that they had a diarrhœa on them previous to the illness of the carrier, others that they were attacked with diarrhœa subsequent to the carrier's illness.

As it has been demonstrated, by careful and attentive inquiry at the bed-side, that diarrhœa is the first, the invariable premonitory symptom of an attack of spasms, vomiting, purging, etc.,—of cholera, in fact,—it is evident that the first symptoms of the disease was in the village of Ruslip, previous to the carrier being seized, and that we have, therefore, every proof possible that the carrier did not bring the disease into the village.

A medical gentleman, of some standing at Woolwich, informed me, in 1849, that a woman who had washed the soiled clothes of two of her sons, who had died of cholera, had caught the disease, and had died in consequence. The position of the informant,

who had attended this family, and the clear details which he furnished, certainly gave the impression, that at last here was a well-authenticated case of infection by handling and by washing the soiled clothes of cholera patients.

I went to Woolwich, and accompanied by this medical gentleman, called at the house where this woman had lived, and there saw her relatives and friends. From these I learned that this woman was ill herself with diarrhœa, while she was attending on her two sons; so ill, in fact, that when the clothes were about to be washed, she could not do her work, but employed another woman to wash them for her. This woman I also saw, and she acknowledged that she had in no way suffered from having done this work.

Consequently, although this poor mother so soon followed her children to the grave, yet she did not take the disease from washing their soiled clothes; as she had, if we are to believe her relatives and friends, the first symptoms of the disease on her when she was attending the death-bed of her sons.

To resume, therefore:

That as epidemic cholera has identically the same symptoms as sporadic cholera,—

That as sporadic cholera cannot be transmitted from a person labouring under the disease, to a healthy individual,—

That as sporadic cholera cannot be transmitted from an infected to a healthy locality, by human intercourse, or by goods,—

And that, as sporadic cholera cannot be communicated to a healthy person by washing or by handling the soiled clothes of persons labouring under cholera,—

I must arrive at the conclusion, that since sporadic cholera is not a contagious disease, epidemic cholera cannot be considered a contagious disease.

COPIES OF LETTERS

ADDRESSED TO

THE REGISTRAR-GENERAL.

[Case, No. 1.—*August 19th*, 1853.]

It was reported in your last Returns, that a child died of cholera at No. 9, New Rochester-row, St. John's Sub-district, Westminster, after seven hours' illness and without any premonitory symptoms. I have called at this house, and have seen the father and mother of this child. The mother said that the child was ill for above twenty-four hours before she was seized with cramps, purging, vomiting, etc.

The morning of the day previous to her death, she was unwell; but as she was a sickly child they were not alarmed about her, and left her the whole day under the charge of her sister, as both parents were obliged to go to their work, which kept them from home till about twelve at night. When they returned home they found the child very uneasy, and much worse than when they had left her in the morning; they were told that her bowels had been acted on, and that she had vomited several times. In about two hours after their return home, she was seized with violent spasms, vomiting, and purging, and died seven hours after.

It is evident, therefore, that this child was not struck down from her full health at once, by spasms, vomiting, purging, etc.,—by cholera, in fact; but that there had been a warning, not so evident possibly as

to arrest the attention of those unaccustomed to see cases of cholera, but more than sufficient to satisfy one acquainted with the insidious advance of the disease, that an attack of cholera was imminent.

[Case, No. 2.—*September 23rd*, 1853.]

In your last Weekly Returns, it is stated, that a case of cholera occurred at No. 1, Charlotte-street, Waterloo-road, in a child five years old, which proved fatal in seven hours, and without any premonitory symptoms. I have seen the child's mother, and the medical gentleman who attended her. The mother was out all day at work, and does not know how the child passed the day; but when she returned home at night, she was in bed apparently well.

About half-past three the next morning, she was called up to attend to the child, who had a copious liquid painless motion, and about half an hour after a second motion of the same character. The mother made a fire, got some warm drink, which the child took and went to bed, complaining of no pain, or of any uneasiness, and slept a short time. She then awoke, had a third copious evacuation, liquid and without pain, but felt sick at stomach. In less than three-quarters of an hour she had a fourth very copious liquid painless evacuation, and vomited freely. The mother feeling now alarmed, sent about six o'clock for medical assistance, and at about seven, when the medical gentleman arrived, the child had had severe cramps, vomiting, purging, etc.

There was, therefore, in this case, a painless diarrhœa for about three hours previous to the attack of spasms, purging, vomiting, etc.; and there is nothing

therefore in this case which forms an exception to the rule,—"*that in every case of cholera there is always a premonitory diarrhœa for some hours, some days, or some weeks, previous to the attack of spasms, vomiting, purging,*" *etc.*; and that it is during the stage of painless diarrhœa that the disease can be arrested, and that it is within the reach of medical science. If this child had had medical assistance in time,—that is, before the spasms, etc., had come on, would she have been saved? No one can reply to this question in the affirmative; but her parents were warned of the danger of delaying to send for medical advice in such a case. Her father and two of her sisters were seized with the painless diarrhœa four days after her death; they had assistance immediately, and they are now well.

[Case, No. 3.—30*th September*, 1853.]

A man is reported in your last Weekly Returns, to have died on the 28th instant, at No. 8, Orchard-street, Kingsland, Hackney South District, of cholera, without any premonitory symptoms. I have seen his widow, and his medical attendant. His widow states that he had been an invalid for the last ten months, and unable to work; that for many days previous to the 21st instant he complained of feeling weak in his inside, and walked bent as if he was weak; but that she did not notice that he had or had not a diarrhœa. He went to bed apparently in his usual health; at about four o'clock next morning he had a free evacuation; in about half an hour after he had a second; about half an hour after he had a third, with vomiting, and some uneasiness in his limbs; he took some brandy then, which eased him for a short time, when

the purging, vomiting, and cramps came on; and when the medical attendant saw him, at about eight o'clock, he was in collapse. This man had, therefore, a diarrhœa for at least an hour and a half before the spasms, vomiting, purging, etc., came on,—if he had not suffered from it for some days before, when he complained of feeling his inside weak.

[Case, No. 4.—*October* 14*th*, 1853.]

I have been to No. 12, Foxlow-street, Bermondsey; and I have seen the relatives of the woman who died on the 7th instant, of cholera, who is reported in your Weekly Returns as a case of cholera without any premonitory symptoms; and I have also seen the medical attendant on this woman. From her relatives I have learnt that she was taken ill at four o'clock P.M. on the 7th, when she had a very copious liquid stool; that she had several more from that time till about half-past seven o'clock, when spasms, vomiting, purging, etc., came on; and being very urgent, the medical attendant was sent for. He arrived at about nine o'clock. She was then fast sinking into collapse. Neither had her relatives nor the medical attendant inquired whether she had or had not a diarrhœa previous to four o'clock, the hour she had a copious liquid stool. However, it is certain that the spasms, vomiting, purging, etc., did not come on suddenly; but that a period of at least three hours and a half elapsed from the first liquid evacuation to the first attack of spasms; therefore, this case proves the rule laid down in your Weekly Return of 24th September, 1853, that in every case of cholera the patient has a diarrhœa for a few hours,

a few days, or a few weeks previous to the attack of spasms.

[Case, No. 5.—*October 28th*, 1853.]

With reference to the case of cholera which occurred on the 17th instant, at No. 27, Downham-street, Islington East, and which has been reported to you as a case of cholera without any premonitory symptoms ; by the wording of the Report sent to you, it was evident that it was not drawn out by a medical gentleman, and therefore not entitled to confidence. However, as I have made it my duty to inquire into every case of cholera reported to you without any premonitory symptoms, I went to the house of the deceased, and there saw the nurse who had attended him. From her I learned that this gentleman had gone to bed the night before his death at half-past nine o'clock, as he did not feel well ; and that he went to bed without taking his usual supper, as he felt too ill to do so ; that at about one o'clock he called her up, saying that he had a violent diarrhœa, and that he felt very unwell ; that while speaking to him, he began to vomit ; that he went into the next room, where there was a fire ; that he was shortly after again sick at stomach, and again vomited ; and that about half-past two o'clock spasms came on, when the medical attendant was sent for. Neither she nor his wife was aware that he had any diarrhœa when he went to bed. The medical attendant informed me that he saw the patient at about three o'clock, and found him sinking, but that he did not make any inquiry as to the state of health of his patient previous to his seeing him.

Therefore, neither the nurse, nor the widow, nor the medical gentleman knew anything as to the state of the deceased's bowels previous to one o'clock A.M., the morning he was taken ill. It is certain, however, that he was ill the night before when he went to bed, and that at one o'clock next morning he stated that he was very ill with diarrhœa, and that cramps came on at about an hour and a half after he called the nurse to him at one o'clock. We are certain, therefore, that an hour and a half elapsed from the moment he called for assistance till he was seized with spasms, etc.; consequently, he was not struck down from rude health by spasms, vomiting, purging, etc., and this is also not a case of cholera without any premonitory symptoms.

[CASE, No. 6.—*November 3rd*, 1853.]

A man died at No. 6, Holland-street, St. Saviour's, on the 17th October, and was reported to you as a case of cholera without any premonitory diarrhœa; as appears by your Weekly Returns of the 22nd October.

I have been to this house, and have seen the landlady, and a lodger in attendance on the patient from the time he was taken ill with spasms, etc., the patient's brother-in-law, and his sister.

From the landlady, and from the lodger who attended him from the moment he was taken with cramps, I learnt that they both had observed him go to the water-closet very frequently, all the day previous to his being seized with spasms, etc., in the evening. His sister and his brother-in-law stated, that for the last two months he was bad in his inside; that

he had a looseness; that he took rum to relieve himself; and that, at his tea on the evening he was seized with spasms, etc., he took rhubarb in his tea, to settle his stomach.

This man, therefore, had certainly for a day, if not for two months, a diarrhœa; and, consequently, his case is not one of cholera without any premonitory diarrhœa.

[Case, No. 7.]

A child, two years old, is reported in your Weekly Returns of the 12th November, 1853, to have died on the 10th November, at No. 17, Spring-gardens, Mile-end New-town, Whitechapel, of cholera, without any premonitory symptoms.

I have seen the father and mother of this child, and the medical attendant. The father and mother informed me that the child had a diarrhœa for three days before being seized with spasms, vomiting, etc.; but as the child seemed in other respects perfectly well, had no pain, ate her food with her usual appetite, and was in good spirits, they believed that the diarrhœa was of no consequence. So satisfied were they that nothing was the matter with the child previous to the attack of spasms, vomiting, purging, etc., that the father told me he could not have believed any medical gentleman who would have told him that his child required medical aid, under such circumstances.

The medical attendant did not inquire whether the child had or had not a diarrhœa previous to the attack of spasms, vomiting, etc. The parents told him that the child was in perfect health when she

was placed in bed; and that two hours after she was seized as has been stated.

Consequently, this is not a case of cholera without any premonitory symptoms.

[Case, No. 8.]

A case is reported in your Weekly Returns of the 22nd October, of a child, two years old, who died at No. 18, Gedling-street, St. James's, Bermondsey, of cholera, without any premonitory diarrhœa, "having been placed in bed at ten o'clock in the evening of the 15th of October in apparent perfect health, and found before twelve o'clock in collapse."

The father and mother informed me that the child's habit was to have a passage in her bowels once a day; that the day before she was found in collapse, they had given her a dose of rhubarb, in consequence of some slight eruption on her skin; that this dose of rhubarb acted three times that day copiously; that the next day she had a fourth copious liquid evacuation; that she ate her food as usual; that she appeared in her usual spirits; that she was put to bed at about ten o'clock, and found at about twelve o'clock in collapse, having passed a copious fifth liquid stool in her bed, and having vomited; that medical assistance was sent for, but she rapidly sunk without much spasms.

There can be no doubt that this was a case of cholera; but was it a case of cholera without a premonitory diarrhœa? Certainly not. The child was, by her parents' account, of a leucophlegmatic constitution; and all medical practitioners are aware that persons having such a constitution cannot support

depletion or purgatives like others. Her habit was to have but one passage in her bowels daily; when forced to have four copious evacuations in about thirty hours by the rhubarb, it was more than her constitution could support, especially at a moment when cholera is epidemic, and at a time when the bowels of every individual feels the epidemic influence of cholera; and the fifth passage in her bowels ushered in spasms, vomiting, etc.

We must not be misled by the fact that the child appeared in her usual health at the moment of being placed in bed, and that she ate her food as usual, and conclude that she was then quite well. It is a daily and hourly occurrence to find persons who are labouring under diarrhœa at the moment, who take their food as usual, and will not allow that they are ill up to a few moments before they are seized. You have in cases Nos. 6 and 7 examples of this; they ate their food, were in good spirits, and appeared to all about them to be in perfect health, till the moment they were seized with spasms, vomiting, purging, etc. yet these persons had the premonitory symptoms on them—No. 6, for certainly a day, if not for two months; No. 7, for nearly two days.

And in your Weekly Return of the 8th October, you reported a case of cholera at Poplar, where the patient had had a diarrhœa for six weeks, before spasms, vomiting, purging, etc., came on; who ate and did his work as usual; and appeared in perfect health to his wife, and to his relatives and friends, till the moment he was seized with spasms, etc. Therefore, the apparent good health and spirits of the child when she was placed in bed must not deceive us.

That apparent good health and good spirits were only apparent; the child had at that moment received the fatal blow to her constitution, and the consequences were but too soon to be evident. Consequently, this child's case is not one of cholera, without a premonitory diarrhœa; it was, on the contrary, a case of cholera, with a premonitory diarrhœa of at least thirty hours.

However distressing it may be to all concerned, I must say that the child's death was brought on by the improper administration of the purgative. To all who have seen and who have studied cholera, it has been forced on their observation how susceptible their patient's stomach and bowels are even to the smallest dose of purgative medicine when cholera prevails; and especially females, whose bowels are at all times very capricious—at one time acted on by the smallest dose of a purgative, at another time requiring twice or three times the usual dose to produce a moderate passage.

[Case, No. 9.—*November 3rd*, 1853.]

Although the following case would have probably run into cholera in a few hours, yet there is no doubt in my mind that the event was hurried on by an improper dose of rhubarb and salt. It is the case of a boy seven years old, which has been reported to you as having died of cholera without any premonitory symptoms.

I have been to the house No. 20, St. James's-street, sub-district Kensington, and have seen the aunt and uncle of the boy. The aunt informed me that

the boy had, about six o'clock in the morning, a very copious liquid evacuation; that it ran from him, he said, as if poured out, without any pain or uneasiness; that he felt weak, and remained in bed; that about nine he had another copious liquid evacuation; that he then felt sick at stomach, and refused his breakfast; that at about ten o'clock she gave him a dose of rhubarb, with salt,—not salts,—to settle his stomach, she said; that in a few minutes after taking this dose he vomited, and was again purged; that a short time after he again vomited, and was again purged; that then spasms came on; that the medical attendant saw him at about twelve o'clock, and he found the child then sinking. The medical attendant made no inquiry from the relatives, or from the child, as to the state of his bowels the day before. However, even admitting that the child was in perfect health the day before, we have here a period of more than four hours from the first liquid evacuation to the first attack of spasms; consequently this child had a premonitory diarrhœa, which was unfortunately overlooked.

[Case, No. 10.]

A man, aged twenty-seven, is reported in your Weekly Returns for 29th October to have died of cholera on the 26th October, and it is reported to you by the medical attendant that he was seized with spasms, vomiting, purging, etc., between three and four o'clock in the morning, and that he was in collapse in half an hour after.

I have seen this man's widow, a neighbour of hers, and the medical attendant.

From the widow I learn that her child was ill with

cholera at the moment her husband was taken ill; that she was so occupied with the child that she did not attend much to what her husband did, or to the time he got out of bed the first time to go down to the water-closet, but that it might be about half-past three o'clock; that he shortly after went down again, that is, in about ten minutes or a quarter of an hour; that shortly after he attempted to go down a third time, but that he was then seized with spasms, vomiting, purging, etc., and then she and another woman ran for the medical attendant.

Her neighbour said, she was up and heard this man go down to the water-closet at one o'clock, or half-past one; that she heard him go down a second time in about an hour after, and to attempt to go down a third time in about an hour more, when she heard him call out for assistance.

The medical attendant said that he saw this man at half-past four or five; that he found him in a state of collapse; that he inquired whether he had any bowel complaint the day before, and that he was told by the patient that he was quite well up to the time he was called up to go to the water-closet.

Are we to believe the widow, whose mind was pre-occupied with her child's illness, as to the time her husband first went to the water-closet, and as to the time when he was seized with spasms, etc.? or are we to believe her neighbour, whose mind was not pre-occupied?

The testimony of the medical attendant cannot be received on this point, as he speaks but from hearsay. But whichever testimony we accept, there can be no doubt that a diarrhœa preceded the attack of spasms,

vomiting, purging, etc.; and that, as the medical attendant saw him only between four and five o'clock, his assertion that the man fell into collapse half an hour after he was taken ill is the result of hearsay, and not the result of his own observation. His testimony on this point is therefore not admissible.

To resume: therefore, as there was a diarrhœa previous to the attack of spasms, etc., of a certain duration, this was not a case of cholera without a premonitory diarrhœa.

[Case, No. 11.]

At No. 1, Tittle-court, sub-district St. Olave's, a labourer is reported to have died on the 22nd October (see your Weekly Returns for 29th October), and the medical certificate states that this man had no premonitory symptoms, and that almost from the first he was in a state of collapse.

I have seen this man's widow, and she informed me that her husband left his bed about four o'clock in the morning to go to the water-closet; that in about half an hour he got up again, and again at about half-past six; that he then dressed himself and went out to his work, but returned at about eight, saying he felt very ill; that he went to bed, and that in about half an hour after he was seized with spasms, vomiting, purging, etc., when she sent for medical assistance. This man had therefore a diarrhœa for at least four hours previous to the attack of spasms, and the medical attendant could not have made any inquiry into the antecedents of the case, as he certified that this man fell into collapse almost from the first, when we have the testimony of his widow, who states that

he went to his work at half-past six, and returned at eight o'clock.

To resume: there was therefore an interval of about four hours from the first liquid motion to the first attack of spasms, etc., and in the interval the man was able to go to his work; consequently he was not in a state of collapse from the first.

[Case, No. 12.]

At No. 1, Norfolk-place, St. James's, Bermondsey, a child, three years old, is reported in your Weekly Return of the 29th October, to have been found by her mother, on the morning of the 17th October, passing rice-water evacuations, and having had no premonitory symptoms.

I have seen the mother of this child, and she informs me that the child went to school all day; that she was not aware that she had had a diarrhœa the day before; that on the morning of the 17th October, at about two o'clock, the child had a passage in her bowels, and again another about half an hour after, and a third a short time after this, when she fell asleep and slept soundly till about seven o'clock, when she had a fourth evacuation. The mother then observed that the evacuation contained very little fæcal matter; that she then sent for the medical attendant, who came and prescribed for the child at about nine o'clock; that, however, the diarrhœa persisted, the child having a liquid watery evacuation about every two or three hours for two days and a half, when the spasms, etc., came on, and she died on the eighth day from the time she had the first liquid stool on the morning of the 17th October.

There was therefore, in this case, an interval of about sixty hours from the first liquid stool to the first attack of spasms, etc. Consequently this is not a case of cholera without a premonitory diarrhœa.

[Case, No. 13.—*December 29th*, 1853.]

In your Returns of the 19th November, is a case of cholera reported to you as a case of cholera without a premonitory diarrhœa.

I have seen the mother of this child, and she says that he was playing with his companions all day in the yard; that at about three o'clock, P.M., he was seized with vomiting and purging; that she took him up stairs, and gave him some warm drink; that he had two or three motions in rapid succession; that the motions were liquid; that he now seemed to be relieved, and dozed off to sleep till about ten o'clock, when he was seized with spasms, vomiting, purging, etc.; and that she then sent for the medical attendant.

As the child was all day playing in the yard, she could not say whether he had had, previous to three o'clock, a passage in his bowels or not, nor had the medical attendant asked that question. However, as about seven hours elapsed from the first liquid motion observed to the first attack of spasms, it is evident that this is not a case of cholera without a premonitory diarrhœa.

[Case, No. 14.]

Seeing it reported to you that a woman died "*of a sudden attack of cholera*," on the 26th of November, 1853, at No. 16, Sweet Apple-square, Bethnal-

green, and that an inquest had been held to ascertain the cause of death, I went to the house, and I saw the husband of this woman, her father and mother, and a person who had not left her bedside from the moment she was taken ill. These persons informed me that this woman had a diarrhœa for at least a week; that she had medical advice and medicines; that the diarrhœa seemed arrested the morning of the day she was seized with spasms, vomiting, etc.; that that day she washed the soiled linen of her house; that in the evening, about nine o'clock, she went out to purchase something, but returned very soon, and said she felt very ill; that some warm drink was given her; that she lay down, and went to sleep; that about one o'clock next morning her husband awoke her, to get her to take off her clothes and get into bed; that immediately on being awoke she had a very copious evacuation; a second and a third, in rapid succession; that the husband ran for medical assistance; that it was at least three hours before he could find any; and when he returned home, he found his wife suffering severely with spasms, vomiting, etc.; and at about eleven o'clock, A.M., she breathed her last.

There was therefore in this case a premonitory diarrhœa for a week, which had been arrested for a few hours by some medicines; but the poor woman did more than her strength allowed her to do during the day, and the diarrhœa returned with increased violence. There is, consequently, nothing in this case contrary to the rule laid down,—that a diarrhœa precedes in every case an attack of spasms, vomiting, etc.

[Case, No. 15.]

I have been to Denmark-hill to inquire into the case of cholera reported to you as one "without premonitory symptoms," which had occurred on the 30th October, 1853, and I have seen the master of the house and the medical attendant.

The master of the house informed me that the gentleman who had died of cholera had dined with him the day before, and remained with the family in the evening; that he appeared in good health, and went to bed at his usual hour; that in the morning, when he came to breakfast, he appeared so ill that he requested him to go to bed; and the gentleman then informed him, that at about six o'clock he had had a very copious liquid stool, and again in about an hour; and, subsequently, a third and fourth. The master of the house immediately sent for medical advice, and by the time the medical attendant arrived (at eleven o'clock), the patient was then labouring under spasms, vomitings, etc.

The medical attendant informed me that he had not inquired when the diarrhœa had come on, or when the spasms, vomitings, etc., first attacked his patient; that he found him at the moment of his arrival sinking; and that he was so occupied with doing what he could to avert the fatal blow, that it escaped him to make the above inquiry.

However, we have the testimony of the master of the house, that some time elapsed from the first liquid stool till the first symptoms of spasms, etc. Whether the diarrhœa began at six o'clock in the morning, and the spasms at ten o'clock, is immaterial. The patient did not labour under spasms at nine o'clock

in the morning, when he came down to breakfast, and it is certain that then he had had a diarrhœa for at least three hours. Consequently, this is not a case of cholera without any premonitory diarrhœa.

[Case, No. 16.—*April 24th*, 1854.]

With reference to the case of the mate of the *Anna Christina*, reported in your Weekly Returns for October, who died of cholera, on the 26th September, reported by you as a case of cholera without any premonitory symptoms, and with reference to my report to you in this case, which appeared in your Weekly Returns of the 8th October, I beg leave to say, that as soon as I saw Dr. Baines's letter, I called on the Swedish Consuls, Messrs. Tottie, Alderman's-walk, Bishopsgate-street, to learn where the vessel was, and to have her followed, with a view to ascertain from the captain whether the mate was or was not in perfect health up to two o'clock on the morning of the 20th September:—whether, in fact, he had any diarrhœa previous to the attack of spasms, vomiting, etc.

As soon as the Messrs. Tottie were aware of the object of my visit, they told me that the captain had called on them, on the 25th September, for his certificate of health; that he had informed them that he had several men labouring under severe diarrhœa; that they advised him to send for medical advice, which he refused doing, stating that it would deprive his vessel of a clear bill of health. They then told him to take his own course, but that he might bring himself into trouble. Next day he returned to them, and said he had lost one of

his men by cholera. The Messrs. Tottie, of course, do not know if the mate was one of the men who the day before laboured under severe diarrhœa, and to whom the captain alluded. The vessel is to be here again in six weeks, or two months, when the case of the mate will be properly investigated, and reported to you.

I may here add that, when I had the pleasure of seeing Dr. Baines, he distinctly told me that he did not inquire at what time the spasms, vomiting, etc., had come on after the diarrhœa had begun, or whether they had come on simultaneously, and without any warning diarrhœa;—an omission which I have every reason to be surprised at, as having been made by one so well acquainted with his profession as the Doctor is; especially when, in 1849, he had heard me so often insist on this very point, the necessity to ascertain at the bedside the time which had elapsed from the first liquid evacuation to the first spasms, etc., to assist us in forming an opinion as to the probable success of our plan of treatment.

[Case, No. 17.]

It was reported by you that a case of cholera, without any premonitory symptoms, had occurred at the London Hospital. I went there and saw the medical gentleman who had admitted the child, who was labouring under cholera; and he told me that as he did not understand the parents, who were Germans, and as he could not make himself understood by them, and as he could obtain no account of the case form any one, he concluded that this was a case of

cholera without any premonitory diarrhœa, and certified it as such !

[Case, No. 18.]

I have been to the house, No. 27, King-street, Spitalfields, Whitechapel, to inquire about the case of a woman, who is reported to have died there on the 3rd November, of malignant cholera, without any premonitory symptoms.

I have seen her husband, her mother, and the medical attendant. The husband informed me that he returned late on the evening of the 2nd, when his wife told him that she felt very ill; but that she did not say, nor did he inquire with what she was suffering; that she went to bed, and that at about two o'clock she attempted to get out of bed, but before she could do so her bowels were *very, very* copiously relieved; that she complained of feeling very faint and ill; that he went for her mother, who came immediately, and found her in great pain; that the husband went then for a medical adviser, who came at about five o'clock, and found the patient sinking. The husband added that he had not seen his wife the whole day, as he was out at his work since the morning, and that he therefore did not know if she had or had not a diarrhœa on her previous to his return home; he only knew that she complained of feeling very ill when he returned.

Neither did her mother know anything as to her daughter's state of bowels that day, as she had not seen her till sent for. The medical attendant acknowledged that he had not inquired whether she had a

diarrhœa previous to the attack of spasms, vomiting, etc.

Therefore we are left with the certainty only, that this woman was ill when she went to bed,—with what, no one inquired; and if we cannot say it was with a premonitory diarrhœa, the medical gentleman was not justified in certifying to you, without inquiry, that she had no premonitory diarrhœa.

[Case, No. 19.]

In your Weekly Returns for Dec. 31st, 1853, a woman is reported to have died at No. 1, Claremont-place, Pentonville, on the 21st December, of cholera, without any premonitory diarrhœa.

I have been there, and I have seen the lady with whom this woman lived, and the medical attendant. From the lady I learn, that she was a thin, spare, weak, and nervous person, aged fifty-four; that she was subject to spasms in her bowels, for which she was in the habit of taking purgative medicine,—to carry off, she said, the bile. That on the morning of the 19th December, she had one of her usual attacks of spasms in her stomach and bowels. That as she was of a costive habit, and was accustomed to take a smart purgative to relieve the spasms, she took without medical advice, a large table spoonful of castor oil. This not having acted, in the evening she took again, without medical advice, a dose,—a blue pill five grains, and a black draught, salts and senna. That all these purgatives did not begin to act till ten o'clock next morning, when her bowels were repeatedly relieved. She thought herself better,

and attempted to get up, but was obliged to return to bed again, and fainted. The medical attendant was then sent for. The lady stated further, that she had no spasms in the limbs, no vomiting, no discoloration of her skin, before or after death, as she particularly watched to see if she turned blue in any part of her body; that her skin was not cold and clammy; that she complained of no thirst, no burning pain at the pit of the stomach; nor did she call for cold water. As she passed everything now involuntarily, she was not aware whether she passed water or not; that to the last the evacuations were fæcal, not watery, and very offensive.

The medical attendant said that he saw the patient in the morning, that she was recovering from a faint; that the skin of her face had a leaden hue; that she was passing everything involuntarily; that she had no pulse at the wrist; that he considered her sinking; and that he considered her also labouring under an attack of cholera.

This gentleman established his diagnosis on the leaden hue of the skin of the face, on the absence of pulse at the arm, and on the diarrhœa. He is contradicted as to the aspect of the face by the lady; and the absence of pulse, and the involuntary passage from the bowels, are no proof that this was a case of cholera,—especially when we find that she had taken, for her, an over-dose of purgatives.

Therefore, this is not a case of cholera; it is one of hypercatharsis, in consequence of an over-dose of purgative medicine.

[Case, No. 20.]

I have been to No. 2, Goodwin-buildings, Whitechapel, and I have seen the widow of the man reported in your Weekly Returns of the 24th December, as a death from "*malignant cholera, without any premonitory symptoms.*"

She informed me that her husband had, eight years ago, a severe injury in his back; that in consequence he had for some weeks a severe pain in his back and left knee; that subsequently the pain attacked his left instep; that every year since he was, in the autumn, subject to pain in that instep; that for the last six months he frequently complained of the pain in his instep, and that he frequently was lame in consequence; that the day he was taken ill he was in his usual state of health and spirits; that he went to bed at his usual hour, but that at about one o'clock the next morning he awoke, complaining of great pain in his instep, in the same place where he usually felt pain; that the pain went on increasing; that she bathed the instep with vinegar and brandy; that after a short time the pain suddenly ceased in his instep, and that immediately her husband began to breathe quick, and he said that the pain of the instep had gone to his heart; he had now a slight motion, and vomited once, but only phlegm; that she then sent for the medical attendant, and her husband died twenty-four hours after he first was taken ill. He had no diarrhœa, no spasms, no vomiting, except one of a little phlegm; that he passed his urine freely; that his voice did not appear weak till a few minutes before death; that no part of his body turned blue before death, and that his countenance after death was calm,

placid, and like white marble; that she had a few days before attended a friend of hers who had died of cholera, but that her husband appeared to her not to have one symptom such as her friend had.

Was this a case of malignant cholera? Certainly not. Every medical gentleman will recognise this as a case of retrocident gout.

[Case, No. 21.]

In your Weekly Returns of the 11th February, a case is reported as one of cholera which occurred at No. 27, Charles-street, Hackney-road sub-district, and the medical attendant stated in his report to you "that the patient presented all the symptoms of *malignant cholera.* He was completely in a state of collapse, almost voiceless and pulseless, surface livid, pain in the abdomen, cramps, vomiting of rice-water fluid, BUT NO PURGING."

I have been to the above house, and have seen this man's widow and the medical attendant.

The widow informed me that her husband had a hernia; that it frequently came down; that he returned the intestine usually without difficulty; that two days before she called in medical advice the hernia had again come down, but that this time he could not return it; that for the two days he suffered great pain in the tumor and in his abdomen; that on the morning of the second day he began to vomit, but had no passage in his bowels; that finding he was growing worse she sent for medical advice, and that the medical gentleman did all he could to procure a passage in the bowels, but could not.

The medical gentleman admits that the patient had

a hernia, but that when he saw him the hernia was reduced, and that the patient's appearance was as is stated in his report.

Was this a case of cholera? Certainly not. Every surgeon will recognise this as a case of strangulated hernia; and had an autopsy been made, this diagnosis would have been found correct.

The medical gentleman laid great stress on the livid state of surface and on the rice-water fluid vomited; but blueness of the surface takes place in strangulated hernia, in slow internal bleeding from wounds, in females dying from flooding, etc., as well as in cholera. As to the rice-water fluid vomited, that takes place when vomiting occurs from a strong emetic, when the whole contents of the stomach have been removed, and when the contents of the gall-bladder have ceased to regorgitate into the stomach,—which is well marked in sea-sickness. Therefore the presence of these two symptoms alone do not justify us in concluding that we have to deal with a case of cholera. This may also be said of the almost voiceless and pulseless symptoms—both are common to strangulated hernia when mortification has taken place; and as the hernia had returned, as the medical attendant has said, when he first saw his patient, is it not in accordance with practice that a hernia may return, and yet remain strangulated, in consequence of having formed adhesions at the point where the abdominal ring compressed it while the intestines were protruded externally?

To resume: it is not the presence of a few symptoms which are common to other diseases which constitute a case of cholera, but it is a group of symptoms

developing themselves in regular order which constitutes a case of cholera, and a diarrhœa is the first, the constant, the invariable symptom of the disease, and no case of cholera can take place without a diarrhœa. Therefore, as this man had no passage in his bowels, he was not labouring under cholera.

[No. 22.]

Copy of a letter to the Earl of Shaftesbury, President of the General Board of Health.

"My Lord—The following is the paragraph on cholera to which I alluded, and which emanated from the General Board of Health.

"'Extract from the *Times* newspaper, 8th November, 1853, relative to a case of supposed cholera which occurred at Lewisham, on 28th October, 1853:

"'The mere absence of purging and even vomiting at the time, is no evidence that the case was not one of malignant cholera. Indeed the very worst cases of this formidable disease are those where these symptoms are wholly or partially absent; the powers of life being struck down at once by the poison.'"

"As it is a question of the first importance, whether cholera occurs without purging, or without vomiting,—without, in fact, giving any warning of its approach by a symptom, or by a train of symptoms,—will your Lordship permit me to ask on what grounds the Board came to the conclusion that cholera ever takes place without purging and without vomiting?

"If this knowledge has been obtained by any member of the Board at the bedside, I trust there

will be no objection to state where such cases occurred in London, that the fact may be verified.

"If the Board have made the above statement on the authority of books, or on the authority of persons not sufficiently conversant with medical science, or with medical inquiries, I am certain they will in future pause before they give circulation to statements that cholera can take place without purging and without vomiting; statements which are contradicted by accurate researches at the bedside, and by accurate researches after death, by autopsy.

"I take the liberty to inclose the copy of a letter, which I have addressed to the Registrar-General, and which will show that I am at this moment investigating the truth of those cases reported to him as cases of cholera without any premonitory diarrhœa; and that up to this instant not one case of cholera has died in London, during this outbreak, without having had a premonitory diarrhœa for some hours, some days, or some weeks, before an attack of spasms, etc.

"Your Lordship will therefore see how essential it is that, in future, the Board do not put forth statements that cases of cholera do take place without purging, and without vomiting, unless such cases have been fully and properly investigated.

"With reference to the child who died at Lewisham, on the 28th October, the Board must be aware that that case cannot be received as a case of cholera, not even on the authority of Mr. Case and of Mr. South. These gentlemen did not examine the case scientifically; they did not perform the autopsy, which they were bound to do, before they gave a

professional opinion; and, therefore, whatever they have said must be received as mere conjecture, unworthy of the attention of pathologists.

"Cholera is a disease quite alarming enough without alarming the public more, by placing before them doubtful cases, and drawing from these conclusions which are more than doubtful.

"I have the honour to be, my Lord,

"Your obedient Servant,

"D. Macloughlin, M.D.,

"Member of the Legion of Honour of France.

"London, 23rd November, 1853,

"34, Bruton-street, Berkeley-square."

[Case, No. 23.]

The General Board of Health assumed that the first case of epidemic cholera which occurred in Great Britain, in 1848, occurred at Horselydown, September 22nd (see page 14 of their Report on Cholera); but they forgot to state, that that case occurred in a sailor, belonging to the *Elbe* steamer, which had arrived two days before from Hamburgh, where cholera raged; and that on the passage from Hamburgh to London, two men belonging to the vessel had died of cholera.* They also forgot to mention that a man who slept in the same room as the sailor at Horselydown, on the night of the 21st and the 22nd September, was himself seized with cholera six days after. Therefore it is evident that cholera was on board the *Elbe* steamer when she arrived at London; and since the General Board assume that the

* I have the Captain's authority for stating this.

sailor who belonged to this vessel, and who died on the 22nd September, was the first case of cholera which occurred in Great Britain and Ireland in 1848, it is evident that they have proved—if we rely on the accuracy of their assumption—that the *Elbe* steamer imported cholera into this country in September, 1848. It is evident, therefore, that the General Board of Health still, if we believe their assumption, have proved that cholera can be conveyed from an infected to a healthy locality by human intercourse,—that the disease is, in fact, contagious. It is useless for them to tell us that the cases of cholera which occurred on the 30th September, and 1st, 2nd, 3rd, etc., of October, had no intercourse whatever with the case which occurred at Horselydown on the 22nd September. It is evident, I repeat, that cholera was on board the *Elbe* steamer when she arrived in the Thames; and it is also evident that the Board have not shown that none of the crew of that vessel had any intercourse with the individuals attacked on the 30th September, —1st, 2nd, 3rd October; or with the landsman who slept in the same room as the sailor during the night, from the 21st to the 22nd September, and who was himself seized with cholera six days after. Therefore, I repeat, the General Board of Health, while they assumed that cholera is not a contagious disease, have proved that it is a contagious disease.

To show how careless the General Board of Health are of facts, which are in opposition to their pre-conceived opinions,—we see them here assuming that the case of cholera which occurred at Horselydown on the 22nd September, 1848, was the first case of cholera which had occurred in Great Britain in 1848;

when by referring to your Weekly Returns, for 1848, up to the 21st September, we find that previous to the case which occurred at Horselydown on the 22nd September, one hundred and seventy-nine medical gentlemen had certified to you that one hundred and seventy-nine cases of cholera had occurred in London from the 1st January to the 21st September, 1848.*

* See the Registrar-General's Report on Cholera, page 11, drawn up by William Farr, Esq.

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