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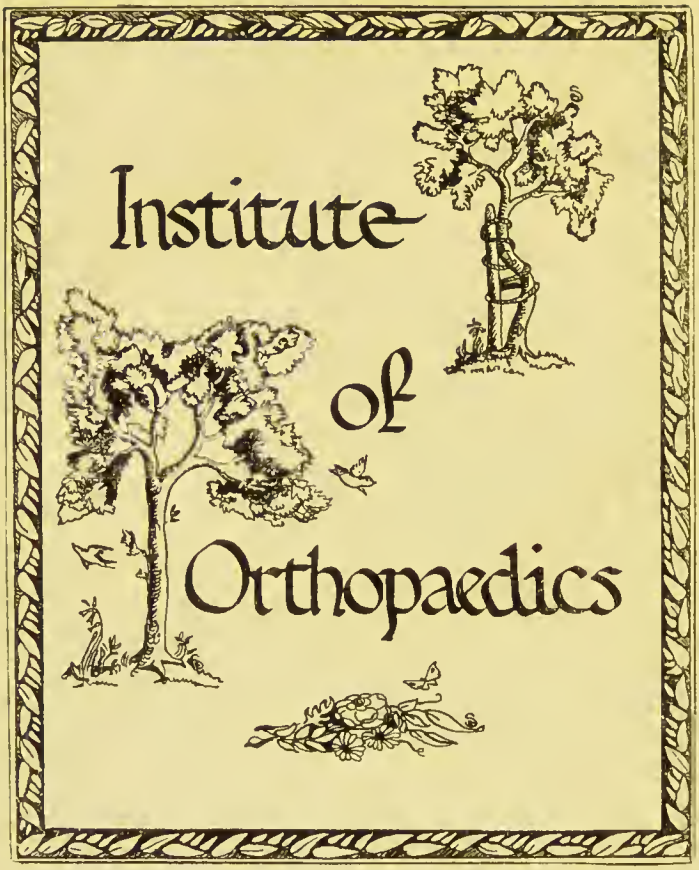

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LING'S EXERCISES.

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LING'S

EDUCATIONAL AND CURATIVE

EXERCISES.

BY

M. J. CHAPMAN, M.A. Cantab., M.D. Edin.

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PREFACE

TO THE SECOND EDITION.

The Author hopes his essay may be of use by promulgating the knowledge of Ling's beautiful and scientific system of Exercises. He is indebted to Professor Georgii for his knowledge, such as it is, of the subject. He invites the attention of the readers especially to the cases, which are illustrative of the real efficacy of Ling's scientific Gymnastics. He is satisfied that these exercises, begun in the nursery and continued in the school-room, would be of inestimable value in promoting the vigour of the human frame. There is, of course, a great difference between those which are employed for training or educational purposes, and those which are therapeutical.

August 13*th*, 1856.

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LING'S EXERCISES, &c.

THE history of gymnastics is full of interest; for it involves the question of education, than which there is none more important to the welfare of the rising and of all future generations. Man is a three-in-one being: he consists of body, animal soul or life, and spirit. True education consists in the harmonious development of this three-in-one being. The physical training of the child is, therefore, of the utmost consequence. The definition of health among the ancients was *mens sana in corpore sano*—a sound mind in a healthy frame. Christians ought to add to it Christian culture, which should be the ground-work of true soundness of mind. It is obvious that education should begin with the beginning; and that due attention to the physical health is absolutely necessary. Exercises, systematized according to a full knowledge of anatomy and physiology, are most beneficial in preserving the equilibrium of the various physical forces constituting the life of a child, that should grow up to the robust man or woman. The ancients were fully aware of the importance of this sort of training.

It was the custom of the Greeks to strip themselves of all their dress, or the greater part of it, according to the exercises they went through; hence the word *gymnastic*, to signify their being "naked" at the time. Their schools for general instruction were called *gymnasia*, which shews that

they looked on the physical training as of the utmost importance in true education; and so it is. They made the education of their children of both sexes an affair of the state; it was done at the public expense. In this way the Greek became the type of the human race in its highest natural characteristics. In form they were all but perfect; in courage unequalled; they excelled in the arts and sciences; in polite literature, in poetry and history, they are still our masters. Their theory of education, and the practical results of it, were in many respects *better than ours at this day*. In very truth true education is little understood among us. The Greeks were right where we are wrong; and that too with the infinite advantage on our side of Christianity instead of their polytheism. *They* made the most of their materials. Their glorious language remains to us in its imperishable beauty —a language worthy of demigods. There is no such now spoken; and it is not easy to conceive any superior to it. In an inferior, but still classical, form it is the language of the Evangelists and the Apostles. And what tongue of men could better, or so well, express "the height of that great argument," which is enforced in the New Testament?

It is to be noticed that those sage Greeks educated their women as carefully as their men. A sage, of great renown, has remarked that "with the feebleness of the mother begins the feebleness of the man." Thence the necessity for the proper physical training of girls as well as of boys. There scarcely ever lived a *great* man, in whatever department or pursuit of life, who had not a noble mother, of excellent physical, moral, and mental health. Search history, and prove the contrary if you can. So the Greeks were right in having their *gymnasia* for girls as well as those for the boys. And Ling's Exercises, provided only they are well and scientifically conducted, form a most valuable branch of female education.

The Argonautic heroes, Hercules, the Æacidæ, Castor and Pollux, Orpheus, Theseus, (and who in recounting these worthies fails to remember their poets, Theocritus, Euripides, Apollonius of Rhodes, and our own Chaucer, Shak-

spcare, and Dryden?) were in this fashion trained and prepared for their great exploits. In this way were edueated those immortalised in the drama of Æsehylus, the "Seven against Thebes." In this way were brought up the worthies who fought the battle of Greeee against Troy—to whieh event we are indebted for the two epies of Homer, and that of Virgil. All the *Dii Minores*, the saints of the Greek Calendar, were thus prepared for those aehievements whieh obtained for them their eanonisation.

Gymnastie feats are reeorded in Homer, and are described, in his splendid verse, in the Iliad. Bodily exercises, devised for the development of the human frame, were praetised in honour of the gods, and thus physieal training partook of a religious eharaeter.

Plato informs us in the third book of his "Republie," that gymnasties were made, not long before the time of Hippoerates, a part of hygienie medieine as a eounterpoise to the ill-effeets of luxury. They were redueed into a regular system, and pursued under the supervision of offieers appointed by the state. There was, no doubt, a eompulsory rate for the edueation of the Athenians, though it has been lately deeided by the House of Commons that there should be no eompulsory rate for the edueation of Englishmen. If the law hangs men, and otherwise punishes them for erime, it should provide for the lieges that kind of edueation whieh is a preservative from crime.

> "The immortal gods have before virtue placed
> The sweat of labour, and the road is long
> And steep, that to it leads. At first 'tis rough;
> But when you reach the top, 'tis easy all,
> Although it was all difficult before."

Sueh is all true edueation. We don't provide it; but, for want of it, there is an ample provision of gallows, and hulks, and tread-mills, and penal settlements, and penitentiaries.

In the book that has been referred to, Plato states that the youth of his model republie should be aeeurately trained in gymnasties from infaney onward through life. What musie, as he expresses it, (that is the harmonious develop-

ment of the intellectual and spiritual being,) is to the inner man, gymnastics is to the frame-work that encloses his mind and spirit; in other words, he argues that true education consists in the concurrent development of the mind and the body, the due harmony and proportion of each being attained as nearly as possible. The Attic word for gentleman exactly expresses this harmony—καλοκἀγαθος.

In his book of "Laws," Plato informs us that the first *gymnasia* were built by the primitive Lacedæmonians; and in the Epithalamium of Theocritus is preserved the fact that their girls were trained like their boys in respect of exercises.

> Where flows Eurotas in his pleasant place,
> Thrice eighty virgins we pursued the race,
> Like men, anointed with the glistering oil, &c.

Soon after, the Athenians instituted *gymnasia*, and had three near to the city. One, the Academia (whence our English word "*academy*"), celebrated for its walks, where Plato instructed his disciples in the philosophy of Socrates, enriched by his own exquisite language; another, the Lyceum, a name also engrafted on our language to express a place for obtaining knowledge, in which Aristotle held forth to his pupils; and a third, Cynosarges, frequented only by the lowest class.

The Romans, in this respect, as in most others, the imitators of the Greeks, erected theirs on a grander scale.

The exercises practised in these gymnasia were of divers kinds.

Dancing—in which a very great variety of movements, rhythmical and harmonious, was introduced.

Racing, *leaping*, *wrestling*, *boxing*, *hurling*, and *quoits*, were their chief exercises. *Riding*, *driving*, *swinging*, *rope-climbing*, *swimming*, and other different exercises for the development of the body, were also regularly taught.

The use of baths formed also an essential part of their physical training; hence many of the gymnasia of the Romans were called *thermæ*. We keep the word in "thermal springs." These baths were invariably employed after their

exercises. They adopted the plan of the Russian bath not unfrequently, going first into the hot bath, and then plunging into cold water. This hint may be of use to those who practise the water-treatment. First, a hot or tepid bath, then a plunge into a cold one, and then Ling's exercises: or they might use the baths one day, and Ling's exercises the next day.

Another practice of the ancients, that of inunction, might be re-introduced with great advantage. It is recorded as a fact that oil-carriers and water-carriers were the classes in the East who most generally escaped the plague; the one being saturated with oil, and the other kept wet with water, from their way of carrying oil or water.

So much was this system of exercises considered to be hygienic, that a particular superintendent, the Gymnastes, skilled in medicine, was appointed to prescribe the kind and amount of exercise each person was to take, and he had assistants to dispense, according to Galen, the means the gymnast prescribed. This looks as if some of the exercises were of the kind now called passive, in which the individual under treatment is acted on by another.

The ancients not only employed a methodized system of exercises for the harmonious development of mind and body, for training *the children of the state;* but they also applied it to the cure of chronic diseases.

Plato and Aristotle considered this system of exercises to be indispensable in every well-ordered commonwealth: and insisted on the necessity of developing mind and body at one and the same time. It is most important that such a system should be again made an essential part of education, and be again placed in the circle of hygienic therapeutics.

Hippocrates claimed for himself the credit of systematising exercises: and observed that "Exercise gives strength and firmness to the body and vigour to the mind." Besides the Gymnast already mentioned, there was also a class of physicians among the Greeks called *Iatroleiptic,* from their making use of frictions and inunctions for the purpose of curing.

Celsus records the application of exercises, of active and passive movements, for the treatment of various disorders; and gives some general descriptions of the kinds of friction used in different circumstances of health or disease. It seems clear that the principle of using derivative movements was well understood. Thus he says—"When one part is in pain a different one is to be rubbed; and when we wish to make a derivation from the upper and middle parts of the body, we rub the extremities." He indicates some of the disorders and diseases for the cure of which active and passive movements were applied; for instance, functional disorders of the heart, liver, spleen, and digestive tube, palsy, neuralgic affections, epilepsy, &c.

Galen paid great attention to different kinds of movements and frictions for the treatment of disease. He recommended a system of exercises which occupied at once both body and mind; and insisted on such a method as an essential part of therapeutics. One of his remarks is worthy of attention—"If the lower extremities are kept warm by action, there is produced a free circulation over the whole body." To have "the head cool and the feet warm," is the rule of normal health.

During the "dark ages," as they have been emphatically called, when the light of civilization was all but extinguished, and only a few sparks of celestial fire were preserved in the embers of the past, while barbarism was rampant, and the grinding tyranny of brute force repressed all struggles for a better state of things, the art of gymnastic therapeutics was lost; nor was it revived on the revival of literature and the arts, though the dawn of civilization again came from the glorious scenes of its former resplendence.

At the end of the sixteenth century Borelli and others introduced the "*iatro-mechanic*" doctrine, which attempted to explain the phenomena of life from a mechanical point of view. Some worthy names of the medical roll adopted and enforced this doctrine; and some excellent physiologists have since come into their view, and by-and-bye physicians may think it worth their while to study the science of

iatro-mechanies, and to apply it praetieally for the benefit of their patients.

Towards the end of the seventeenth century was published in London a book of rare value, "Medieina Gymnastica; or, Every Man his own Physician," by Fuller. In the ninth edition, published in 1777, a series of movements is proposed, which were said to eonduee much to an easy respiration, to prevent asthma, to promote perspiration, and general health. Fuller reeommended, in the first instanee, equitation ehiefly. "Cold-affusion" Currie was in this way cured in early manhood, of phthisis; and the writer of this article was in this way cured, also in his early manhood, of *agrypnia*, a painful and distressing want of sleep, which continued for nearly a year. The ease is an interesting one, and may be worth reeording. He had gone to Edinburgh for his last medieal session. He was a clinieal elerk at the Infirmary; and was an active president of the Royal Physieal Soeiety; and he had to prepare for his examination, for whieh purpose he was a pupil of exeellent Fleteher. He was lodging in that unamiable street known as "College Street." During an intensely cold night, he was summoned from his bed by his landlady to see the maid of all work, who had been suddenly taken ill. He saw her in the homely kitehen of the seeond *flat*, and he had, in eonsequenee of exposure in a bitter eold night in the mid-passage of that villainous flat, a severe attaek of meningitis. He was in those days a hard student, his brain had been taxed to the full, by reading, and leetures, and hospital praetiee, for he had to prepare the notes for the elinieal leetures, besides his other kinds of necessary work. Inability to read, or sleep, or think; a quiek wiry pulse, headaehe, and other such symptoms, took the pluek out of him—at that time he had more than enough of it. He went to his masters at the Infirmary, to the dons of the University—they all seouted the idea of there being inflammation of the brain. "You have worked too hard, live generously; shut up your books, drink wine, and work no more for the present." In the sense of reading, he could work no more; but he had

himself bled onee and again. He was not plueked; and at the elose of that year he went to British Guiana, six degrees from the Equator. For nearly twelve months he did not sleep more than two hours in the twenty-four; sometimes not more than one hour; sometimes not at all. After trying everything he eould think of, he bethought him of horse-exereise, and pursued it steadily, riding for very many hours every day, and gradually his sleep returned to him; from that time to this he has slept "like a top."

The ease of Currie is given in Darwin's "Zoonomia." John Wesley also eured himself, of phthisis in the first stage, by riding.

Tissot wrote a book on medieal gymnasties. John Hunter approved of Pugh's *special* museular movements for eontractions of joints, paralytie weakness, and other affeetions. Mr. Pugh's book on the seienee of museular aetion was published in 1794.

The eelebrated surgeon of Oxford, Mr. Grosvenor, held in the highest esteem by Sir Astley Cooper and other eminent surgeons, was known throughout the kingdom for his applieation of frietion to lameness or imperfeetions of motion, arising from stiff or diseased joints. An aeeonnt of his treatment was published by Mr. Cleoburey. Mr. Grosvenor was undoubtedly sueeessful in a multitude of eases.

Dr. Balfour, of Edinburgh, published a book, in 1819, illustrative of the beneficial aetion of eompression and pereussion in the eure of gout and debility of the extremities, and in prolonging health and promoting longevity. In the same year Dr. Gower published in London, "Auxiliaries to Medicine," in whieh he deseribes an instrument, the *pulsator*, for the pereussion of various parts of the body. He says: "It has been an established praetiee, traeeable from a period as aneient as that of Hippoerates, to give aid to sueh parts of the human body as are enfeebled, or under suffering, by *mechanically propelling the languid circulation of the fluids*."

Every one knows the benefieial effeets of *shampooing* and *rubbing*. The Brighton rubber, Mr. Harrop, and the Edin-

burgh one, Mr. Beveridge, and others, have, with their manipulations and rubbings, been successful in a number of cases.

The writer of this paper has lately seen a case of *porrigo decalvans*, in which all the hair had perished and there was complete baldness, in which a complete cure was effected chiefly by gentle manipulations and kneading of the scalp. The patient, a girl of nine years of age, took at the same time preparations of Baryta, by his direction; but the cure was effected in a few months, and he is inclined to attribute it more to the mechanical than to the medical treatment. The hand only was used, and no external medicinal application of any kind.

Dr. Marshall Hall, in his work on the diseases and derangements of the nervous system, has shown the transmission of external action to internal organs, and thence the efficacy of the movement cure in many varieties of affection of the nervous system. A writer in "Household Words" has laid hold of the absurdities of a barbarous terminology, and polyphonous technicalities, to throw ridicule on a scientific system of methodised exercises; but the facts remain.

The relation that manual magnetism, or mesmerism, bears to the specific movements of Ling, will be considered on a future occasion. This kind of magnetism, according to Ling himself, is a dynamic agent, through an external mechanical vehicle.

Let it be repeated that mechanical applications, movements, and diversified exercises, formed an essential part of ancient therapeutics. During the dark ages this method was lost; but Ling, the Swede, has supplied to practical therapeutics the curative treatment of the iatro-mechanical school, on physiological principles, and has thus restored the gap that had been made in the healing art.

Gymnastic exercises, regulated according to the present knowledge of anatomy and physiology, the former an exact science, and the latter advancing to exactness though it can never entirely reach it, ought to be re-instituted as a part of rational education, to insure a robust habit of body, and

through it, a vigorous development of the mental faculties; and they should be restored as an essential part of therapeutics, for the cure of chronic diseases.

In respect of education, all thinkers and observers know the influence the mind and body exercise on each other, how interdependent they are, the one on the other; and therefore the due development of the physical powers exercises an immense influence on the due development of the mind. If, then, exercises should be a part of education, they should be applied according to a system which is in accordance with the sciences of anatomy and physiology. The principle on which they act is obvious. They equally stimulate to healthy action all the parts of the body; the circulation is made free and vigorous; and all the functions are performed with proper activity; the normal health is maintained; and the material for a healthy longevity is fully supplied. Such exercises are especially called for in the education of girls, who should not be wasp-shaped and indolent, with tender or twisted spines, but should be able to run races, and "hold their own" in the course of life. No education is otherwise than excessively faulty, wherein physical vigour is not maintained or obtained. Sir John Forbes has mentioned a school that came under his own observation, 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." This is not the sort of stuff out of which the human family should be replenished. Let your girls and your women be healthy, and you will have a healthy race of men. The vast increase of cases of "spinal irritation," and of uterine disorders, which has led to the monstrous iniquity of the *speculators,* shews the necessity of applying a better system to the education of girls. The "forcing system" of education is an evil that cannot be too strongly denounced; and in the case of girls it is worse, for they have not the active games of boys to counteract the ill effects of a too sedentary life. Youth should be the period of the exuberance

of young life—observing and yet frolicsome—health-getting, and grace-obtaining, and strength-winning. Whereas girl's youth is imprisoned in buckram, set fast in stays, straight-laced and sour-visaged. This is altogether wrong; let nature, and their nature, have free play, and let them have all the enjoyments, recreations, and exercises that are suitable to their period of life and are consistent with virtue and modesty. The free and unrestrained play of limb is one of the very best things in this world for the young and the adolescent. Take their feet out of the stocks, and their hands out of the gyves, and their waists out of the prisons in which your false method of education has placed them, and your daughters will grow up in health, and strength, and beauty, and their sons and daughters will have a healthy infancy and childhood: and so the human stock will be improved, generation after generation.

Peter Henry Ling, the restorer of mechanical therapeutics, and the formative *iatro-mechanic,* whose methodized system of exercises, it is to be hoped, will henceforth form a part of medical education, was born on the 15th of November 1766. He departed this life on the 3rd of May, 1839.

He invented a system of therapeutic movements in thorough accordance with the *laws of motion.* He contended that mechanical agency should be employed therapeutically, as it is an established fact that "the living fibre equally reacts for mechanic as for chemical or galvanic excitation." He observed that certain movements occasioned giddiness, others caused vomiting, others increased the animal heat even to a high degree of perspiration; others, again, produced a sensation of cold. Some quickened the pulse, others made it slower. He summed up the results of his experiments on the motory phenomena of the human organism in this formula: "To render any movement definite and exact, a point of departure, a point of termination, and the line through which the body or any of its parts must pass, are to be clearly and severally determined, as well as the velocity and rhythm of the motory act itself."

In a scheme so comprehensive as his, the methodised exercises may be applied to educational, therapeutical, military, and æsthetic purposes. Not only the whole body, but any molecule of the whole body may be acted on, according to him. The intensity of the application of motive power may vary from the slightest to a very great amount of force.

In 1813, a Central Institution for the practice of his system, was established at Stockholm. How devoted he was to it appears from the touching utterances he made on his death-bed. "Often misunderstood, and often without means, for thirty-five years I have devoted my life to a subject without any hope of immediate or ultimate reward. The King and Diet have assisted me in my struggles from time to time, but my health was unfortunately sacrificed before the hand of encouragement was held out, and even now I have only a few assistants to aid me in carrying out my original idea. Death is about to put an end to all my activity, and what I have done may vanish like a bubble, should the King and Diet refuse to listen to my dying request, and deny their support to the enlargement of the Institution, according to the scheme I have laid down. Out of nearly a hundred pupils I have endeavoured to educate as gymnasiarchs, there are only two who are able to carry out my true scientific idea, and these two in delicate health. Should they depart before others are educated in their place, the real object of the Institution will be lost."

These two happily survive, Professor Branting, who fills his place at Stockholm, and Professor Georgii, who for some years has been resident in London. Dr. Liedbeck, the excellent physician of Stockholm, is Ling's son-in-law, and one of his staunch champions and followers.

Ling left behind him no complete digest of his system of mechanical therapeutics, but a manual—an edition of which, to be enriched with his own notes, so as to form an "Organon of Gymnasties," Professor Georgii has promised us.

Our breath is in our nostrils,—why has he not fulfilled his promise? Only he, or Branting, could do it worthily. Professor Georgii is a consummate anatomist and physiolo-

gist, was for a long time Lecturer on Physiological Anatomy at the Royal Central Institution for Gymnastics at Stockholm, was for several years engaged in the study of pathology at the schools and hospitals of Vienna and Paris, and received from the king of Sweden the "brevêt de professeur." He is a thorough master of his art; and it is very much to be desired that he should be enabled to found a pedagogic establishment—so that from him our young physicians and surgeons might learn the doctrine and practice of Ling. No one else, out of Stockholm, for Branting is there, has either the science or practical skill to teach others effectively. It is fitting that those designated by Ling should be the teachers of his mechanical therapeutics.

The following are the general laws which Ling has proposed for physical development—the purpose of true gymnastics.

1. Every just attempt to develope the powers of the human being—mental and corporeal—is an education.

2. Every movement is dependent on the organization of the human being: whatever transgresses the laws of that organism is irrational.

3. The sphere of the activity of the muscles and the laws of gravitation determine the limits of a movement of the body.

4. Every movement, however simple and slight it may appear to be, results from the nature of the organism, and each part of the body, within the limits of its own function and especial office, ought to participate in that movement.

5. To arrive at a normal development of the body, it is necessary to begin by ascending to the primitive type of each movement: this study should be *exact*, and can never be considered trifling or unimportant by any one who knows that every movement is either simple or composite.

6. In physical order, as in moral order, simple things are the most difficult to apprehend: thence one cannot too deeply study simple movements.

7. A movement is nothing worth if it is not *correct*, that is, if it is not in conformity with the laws of the organism.

8. The body, whose different parts are not in harmony, is not in harmonious accord with the mind.

9. The aim of gymnastics is the proper development of the human organism, by means of correct movements.

10. *Correct movements* are such as are founded on the natural constitution and temperament of the individual to be developed thereby.

11. The organism can only be said to be perfectly developed, when its several parts are in mutual harmony, corresponding to different individual predispositions.

12. The development of the human body must be contained within the limits of the crescive faculties, mental or bodily, with which each individual is endowed.

13. Such a faculty may be blunted by want of exercise, but can never be utterly annihilated.

14. An incorrect or misapplied movement may prevent the development of such a faculty. Consequently an incorrect movement tends rather to the disadvantage than to the gain of the harmonious development of the body.

15. All one-sided development impedes the practice of corporal exercises; general and harmonious development, on the contrary, facilitates them.

16. Stiffness or immobility in any part of the organism is, in most instances, only an over-development, which is always attended by a corresponding weakness in other parts.

17. The over-development of one part may be diminished,

and the weakness of other parts remedied, by equally distributed movements.

18. It is not the greater or smaller size of any part which determines the strength or weakness of an individual, but the proportion and the harmony of the several parts. Congenital and accidental disorders do not come within this category.

19. A real and increased power consists in the simultaneous action of the different parts of the body. In order that motion and power may be developed to their highest point, they must be simultaneous in all parts.

20. Perfect health and physical power consequently are correlative; both are dependent upon the harmony of the several parts.

21. In corporal development, commencing with the simplest, you may gradually advance to the most complicated and powerful movements; and this without danger, inasmuch as the pupil has acquired a knowledge of what he is capable, or not capable.

Some of Ling's physiological and therapeutic views are included in the following sentences:—

"The vital phenomena may be arranged in three principal or fundamental orders: 1st. *Dynamical phenomena,* manifestations of the mind, moral and intellectual powers. 2nd. *Chemical phenomena,* assimilation, sanguification, secretion, nutrition, &c. 3rd. *Mechanical phenomena,* voluntary and organic; respiration, mastication, deglutition, circulation, &c.

"The union and harmony of these three orders of phenomena characterize a perfect organization, and every vital act is accomplished under their combined influence.

"The different share these phenomena take in a certain vital act, gives it its peculiar character. If any serious derangement occurs in any of these phenomena, the result is always a disturbance of the vital functions, which we call disease.

"The state of health depends, accordingly, on the equilibrium and harmony that ought to exist between the functions of those tissues or organs in which these three orders of phenomena occur.

"When this harmony is deranged, in order to re-establish it, we should endeavour to increase the vital activity of those organs whose functions have a relation to that order of phenomena whose manifestation is decreased or weakened."

In accordance with these views he includes, among therapeutic means, three different kinds of influences on the human organism. 1st. *Chemical agencies*—2nd. *Physical and mechanical agencies*—3rd. *Dynamical agencies.* And he observes that "the physician has accordingly to regulate, not only the medicine and food requisite for the sick; but also exercise, position during resting, and the manner in which the irritable mind is to be calmed. Due attention to all these matters is necessary to constitute a rational treatment of disease."

Professor Georgii thus comments on this axiomatic statement of his master. "In admitting these three principal varieties of vital acts, and, as a consequence, so many corresponding modes of physiologically affecting the organism, each of which is in its sphere of equal importance, we consider the therapeutical system incomplete in which all these powers are not taken into consideration. Another question not less important is the establishing of a law for the therapeutical application of these three powers. The living organism can no more be considered merely as a chemical retort, in which we are able to produce at pleasure the same phenomena as in a laboratory, than it can be held to be a mechanical production, on which we are allowed by mechanical pressure to efface an elevation on the surface or alter its form, as we would straighten a pliant but crooked stick. If the re-active phenomena of life are not taken into due consideration, the treatment must fail, the result be injurious. "A course" of mercury, or of iodine, or of any other potential drug is, accordingly, within the chemical sphere, as much opposed to the laws of reaction, as is an orthopædic

treatment continued for years, within the mechanical sphere. The law of reaction is a law of nature. According to its principles the organism creates new powers where they are demanded. Not only the *educability* of man in moral and intellectual, as well as in physical respects, depends on this law, but the same principle prevails also in the pathological state of the body, and must accordingly be taken into consideration in therapeutics. Thus we observe that the physical powers of the organism are increased by corporeal exercises just because the reproductive powers of that organism are compelled to increased activity in consequence of the consumption of power that takes place from every physical effort. The self-sustaining power of life, the *vis medicatrix naturæ*, depends on these principles. Exercise in proportion to the re-active powers of the body is strengthening, and promotes sleep, appetite, and tranquillity of mind; when it is in disproportion to these re-active powers, its excess produces fatigue, restlessness, heat, pain, sleeplessness; carried to extreme excess, alteration of the blood is produced, and even death may be the consequence."

The movement-cure, or bio-mechanical therapeutics, consists of a methodical application of well-defined and appropriate rhythmical movements to the human body. This method, being founded on an accurate knowledge of anatomy and physiology, differs entirely from every kind of ordinary gymnastics.

"As regards the influence of the mechanical agency (active and passive movements, &c.) their applications are founded on one of the fundamental principles of our organism. The law of movement is a natural law. No chemical act can be effected within the organism without the participation or assistance of the mechanical acts, which are expressed by voluntary or involuntary movements, and the whole frame is organized accordingly. So, for instance, oxydation of the blood (chemical act) cannot take place without the movements of the thorax by the action of the inspiratory and expiratory muscles (mechanical act); digestion, assimilation, &c. (chemical acts), cannot properly be performed without

the propelling movements of the stomach and intestines, the pressure of the abdominal muscles, &c. (mechanical act). The blood cannot be thrown to every part of the organism—here to be purified, there to nutrify, to stimulate, &c. (chemical acts)—without a proper performance of the alternating movements of contraction and dilatation of the heart (mechanical acts). The whole organism is the most wonderful machine in which motion produces motion. The conditions of molecular changes are thus ensured. The machinery repairs itself; it is stimulated to action and communicates an increased action.

"If, therefore, in accordance with these laws of nature, we can by the application of special movements increase the power of the mechanical means by which the organism performs its chemical functions; viz., respiration, sanguification, assimilation, secretion, &c. the result must, by producing an increase or a modification of these vital chemical acts, powerfully react on the whole organism. Experience justifies this theory. The strengthening effects of bodily exercises, and their great influence on the form and development of the whole frame, are generally known and appreciated in Hygiene.*

"The organism is a complete unity in which a determined sum of power is distributed. This sum remains always the same, whether the distribution of the power be uniform or not, and consequently the increased activity of one organ, presupposes a diminution of the action of other organs. Now we can localize movements, and thus increase or diminish the vital action of any organ; we can promote or regulate movements in the whole frame or any of its parts.

"Thus the mechanical agent can, by promoting or arresting molecular motion and changes in the organs and tissues

* The effect of regular training for a certain object, as in army drilling, during which hygienic principles and repetition of certain bodily exercises are empirically attended to, is proved in a short time by considerable changes in bodily development and strength, and is one fact out of the many which in every-day life illustrate the beneficial results which may be expected from a hygienic method of treating diseases in which movements take a principal share.

where those functions are to be fulfilled, on which the maintenance and conservation of life depends, produce many effects analogous to those produced by certain medicinal agents; or, to use medical phraseology, it has its stimulative, its sedative, its tonic, its diaphoretic, its purgative, its derivative, &c. effects: and can accordingly, in most instances in chronic diseases, be applied as a valuable substitute for most of the drugs of the pharmacopœia.

"Every motion is a mechanical problem, in which the different parts of the body represent weights, to be adjusted and determined by the muscular power. Localisation of active movements is dependent on the increase or diminution of these weights, according to the purpose intended to be effected; and an increase or decrease of their power is under the control of the gymnast by observing general mechanical laws. Nature has, in the symmetry of the mechanical arrangement of these powers and of the bony framework, made the adjustment of the different weights possible, and capable of being effected with the least loss of time or power. The many levers and the great number of muscles explain in some measure the great variety of the simple and associated movements of animal mechanics, and give a hint as to the great influence and physiological importance of motion: in fact there are more than 200 different segments of bones composing the human framework, in a manner most ingeniously arranged as to form and purpose, and put in motion by more than 400 different muscles, each composed of millions of fibrils, which are brought to unity and symmetry in their actions by a network of nerves. The play and exchange of action in the acting, auxiliary and antagonistic muscles, which characterize even the most simple of our movements, are effected by these means.

"The nerves and vessels are interspersed through the whole machine; the finest needle cannot be stuck into any part without producing blood and occasioning pain. The uninterrupted process of waste and repair, the continued composition and decomposition, are carried on by these

numberless vessels, not more different in their size and combination than in the functions they are destined to perform. Every act of our volition by which the muscles are contracted, or every communicated movement reacting on the functions of all these nerves and vessels, modifies the process of composition and decomposition of parts. If we can preserve equilibrium in these phenomena by maintaining the equilibrium of the circulation, we preserve health, or restore it when lost. Specific active movements form one of the most powerful agents in the harmonization of these vital phenomena within the organism.

"Every active movement is promoted by the contraction of the muscular fibres, and reacts on the nerves and capillary vessels belonging to them. In order to regulate and determine the contractions in the voluntary muscles, and to transmit the action of a movement to a single muscle, or to a certain number of muscles, Ling invented and applied movements in accordance with the structure of the various articulations and the course of the muscular fibres."

This method of Gymnastics was first practised in England by Messrs. Debetou and Ehrenhoff. The latter is now settled at Liverpool; the former is dead, and Dr. J. Blundell is his successor. Professor Georgii came to England in 1848. Dr. Roth was for some months his pupil, and has been for some years engaged in this mode of practice. So far as the writer knows, all other persons in this country who profess to make use of the Swedish exercises for curative purposes, are mere pretenders.

The movement-cure may be used in suitable cases as a non-medical tonic; and is capable of increasing the vital and nervous power, either locally or generally; it is also useful in cases of congestion or unequal circulation, by its derivative processes, whereby the equilibrium and harmony of the system may be restored. It is very useful in cases of chronic weakness of the limbs or joints. There is a multitude of cases in which it may be advantageously combined with medical treatment.

The movements employed are of two classes—*active* move-

ments, by which the patient puts, under the direction of the gymnast, the levers of the human frame-work into an uniform regulated action: and *passive* movements, which are made independently of the will of the patient.

This method of treatment is of signal advantage in cases where there is a tendency to phthisis; in the first stage of consumption; for chronic bronchitis and for asthma. It is very useful in spinal affections, for curvatures and tendency thereto; and also in functional disorders of the heart, and of other important organs. Its usefulness in affections of the respiratory organs makes it of peculiar value in this country, the inhabitants of which are so subject to such affections. Its curative power in such cases has been abundantly proved at the institution of Stockholm.

The writer has found it of use in such cases, as well as in chronic congestions of different kinds, for chronic diarrhœa, and for many affections of the nervous system. He has used it with advantage for some of his own children.

He is satisfied that if it was introduced into the nursery and into schools, it would so improve the constitutional power of the children and youth submitted to it, that their after-life would be healthier and much prolonged.

This method of practice must not be judged partially, but in its entirety. "Though each subdivision of the science," says Professor Georgii, "is complete in itself, it is maimed and defective when regarded without reference to the whole. Ling's conception of a gymnasiarch was not merely that of a fencing master, one skilled in the intricacies of drill and posture, nor that of a pathologist only, adroit in all the varieties of rubbings, shampooings, and such like manipulations, nor yet of a mere orchestric artist, though he should understand all the possibilities of figure, and all the formularies of grace. These are only rude *embrya* of a rational system of gymnasties. To eliminate the latent capacities of the organism, to repress what is abnormal, to adjust what is disturbed—in a word, to adapt the powers of each individual constitution to the necessities of its vocation, by well-defined and anatomically-determined movements, to establish har-

mony in form and motion, beauty and healthfulness, so that the result should be *mens sana in corpore sano;* these were the aims Ling endeavoured, and was admirably fitted, to carry out. As a pedagogist, it was his care to graduate each exercise to the capacity of the feeblest as well as of the strongest. As a pathologist, it was his study to apply the mechanical agency as a healing instrument, in cases even where all other means had failed. In the latter part of his life he evinced a greater partiality for the therapeutic branch of his system. If he succeeded in establishing the fact that chronic diseases were capable of cure, in a comparatively short time, by a certain *modus operandi* in the application of active and passive movements, he not only proved beyond a doubt the therapeutical value of motion (mechanical agency), but demonstrated also the importance of gymnastics as an educational and hygienic apparatus, and the absolutely necessary possession of anatomical and physiological knowledge as the basis for its practical application."

As neither a complete nor exact analysis of the comprehensive science, for such it is, of therapeutic gymnastics can be expected in a brief sketch of this kind, what has been already said may suffice to shew the importance of the subject, and to invite the professional reader to consider it with earnestness and diligence.

Of the educational exercises the writer would have been glad to have given some particulars, if his knowledge was equal to his good-will. Few persons of observation are ignorant how the body and mind act and react, the one on the other. For the defects of body or of mind, education may do much; and physical training ought to be a part of education—an essential part. To repress what is exuberant, to develope what is deficient; to restore the balance of the forces of mind and body which are not in harmonious equilibrium, is, or ought to be, the aim of education.

Supposing that there should be no decisive reason for commencing his exercises sooner, Ling proposed that all children should be put under physical training when they are seven years old. His exercises devised for educational

purposes, are very different from the common and often injurious exercises which are sometimes made use of in the nursery or the school-room. His system is founded on a knowledge of the laws of the human organism; and it may be that a gymnast, well instructed in that system, might find it necessary to use different exercises for each child of a family of six children. Grace of movement, flexibility of limb, an equal circulation, a due adjustment of the forces of the body, and the co-ordinate health of the whole being, are the results which should be aimed at in physical training. The mind and the spirit which are enclosed in a suffering or a non-healthy body, are, to say the least of it, put at great disadvantage. Almost all the men, who have been *great in action*, have been possessed of vigorous frames, capable of great exertion and of great endurance. The same remark, in some measure, holds true of those whom history presents to us as *morally great*, or *intellectually great*.

The *deflection to wrong*, or the *inclination to right*, may have its starting point, in either case, much more frequently than most persons would suppose, in the physical condition of the child. Temper, good or bad, is, more or less, an affair of temperament. Be this as it may, the object of Ling in his educational exercises was to correct whatsoever may be wrong in the physical condition, and so by a sort of reflex action, to improve the general character of the whole being. His system, devised for this purpose, has not yet had fair play; his philosophy has not yet been received by those whose influence could bring it into beneficial action. The subject, however, is worthy of the deepest attention of parents and guardians, of physicians and statesmen, of those who preside over schools, of colonels of regiments and generals, of philosophers and philanthropists.

The addition of a few cases, which were submitted to the treatment by the writer, may be acceptable. They were all treated by Professor Georgii, and the first three cases have already been reported by him.

Case 1.—Miss ——, aged 26, had lost two sisters from

pulmonary consumption. From the sixth year of her age, she had suffered from an occasional sharp pain in her chest, and had at times a profuse expectoration, which about three years ago became tinged with blood. She had passed two winters in Madeira, and had returned much improved in health. During the last spring and summer, she began to decline, and her cough and expectoration became troublesome. At the end of July, 1851, there was a slight depression under the right clavicle; dulness on percussion, and bronchial respiration under the clavicle. The vesicular murmur on that side was very weak, and indeed could scarcely be heard. The heart was atrophied and hurried in its movements. The *period* had, of late, been very scanty; the feet cold; the face flushed; and the patient felt very hot, especially after dinner. She often had a sensation of fatigue and weakness in the left side of the chest, which measured twenty-seven inches and a quarter. A great amelioration took place after a month's treatment. The feet were always warm; the face had resumed its natural colour; and the periodical discharge was increased. The patient felt better than she had done for many years, and the circumference of the chest was increased an inch. After this favourable change it was considered safe for the patient to remain in this country for the winter, as she did not wish to return to Madeira.

The beneficial results continued; and her health has since been tolerably good.

Case 2.—Mr. —— aged 31, born in the Levant, had suffered from spitting of blood since he was fourteen. When he commenced the treatment in February, 1850, he was very much reduced in strength and flesh, and the expectoration was profuse and muco-purulent. He was always hoarse and had a feeling of weakness in the throat, as well as a constant tickling sensation there. The chest was very contracted and his position stooping. On his trying to keep the head upright, he experienced a sensation in the throat as if something would burst. The digestion was weak, and the bowels were rather constipated. He had a feeling of weak-

ness in the whole left side of the body, but principally at the left side of the head, and then the sensation of weakness in the left side of the chest increased. The feet were always cold. Two months ago there was a slight recurrence of spitting of blood. The stethoscope pointed out the anterior part of the left lung almost entirely, but principally in its central part, as impermeable to air, which was the case also with the whole posterior part. The right lung was sound. This patient continued to use the movement cure, off and on, for more than two years: he gained in flesh and general strength, he became quite upright, his chest increased an inch and a half in circumference. The feet were always warm; the voice became clear, and he could even sing, which he had not done for many years previously.

He continued in improved health for more than a year and a half, when he had severe pulmonary hæmorrhage. It was arrested; but some months after it recurred, when he was at Marseilles, and it proved fatal. But the improvement he received while he was under the movement-treatment was unequivocal.

Case 3.—Mr. —— aged 25, of lymphatic temperament, was advised by the writer to consult Professor Georgii, in the beginning of February, 1850. He had for some time been losing flesh, and was easily fatigued on any slight exertion, and had now and then a slight cough: there was danger of his becoming phthisical. He had a tendency to take cold readily; the appetite was indifferent, especially in the morning; the hair was falling off and very dry; the hips were very prominent in proportion to the development of the chest. He measured round the chest thirty-five inches, and by strong inspiration only thirty-six, which proved there were great weakness and incapacity of the lungs. The stethoscope shewed a very indistinct respiratory murmur in general, but especially under the right collar-bone at which place dulness was found on percussion. The congested state of the lungs, and the deficient development of the chest, induced the professor to use derivative move-

ments, calculated to act on the motory powers for the elevation of the ribs. A fortnight elapsed before any change had taken place; the movements at first caused great fatigue and languor, which however yielded to some movements directed to accelerate the action of the absorbents of the alimentary canal, and to soothe the irritation of the ganglionic nerves. At the end of two months the patient could support any amount of fatigue; his muscular powers were in fact greatly increased, and the feet were always warm. The circumference of the chest had increased an inch, and the capacity of the lungs was greatly improved. Several threatenings of colds and sore-throats that occurred during the treatment were put a stop to by appropriate movements, and the patient was perfectly cured, and has since increased both in flesh and general health.

Case 4.—Miss S., 36 years of age, had suffered during a year from cough, with considerable muco-purulent expectoration, and from hæmoptysis, which had recurred five times. She suffered distressingly from cold feet, especially at night and in bed, in summer as well as in winter. She had burning heat in the palms of the hands, and her face was flushed and hot in the evening. The right shoulder was lower than the left; and there was a depression of the sternum. Her eyes were weak and she could not read by candlelight. She was subject to nose-bleeding. The catamenia regular; she had leucorrhœa. She suffered occasionally from aching pain under the right shoulder blade. She was frequently hoarse. Dulness on percussion under both clavicles, especially on the right side; the respiratory murmur under the right clavicle was tubular, and there was also a prolonged respiratory murmur. On the back no respiratory sound could be detected above the shoulder blades on either side. Her chest only expanded a quarter of inch with the strongest inspiratory effort she could make. Her nervous force was very feeble.

After three months' treatment by Ling's exercises, which was commenced in February, 1852, her strength, as shewn

by pressure with the hand, increased from 12 to 29 in the scale of the dynamometer. She gained one inch and a quarter round the chest, and the inspiratory power was increased nearly an inch. Her general health was much improved, her feet were warm, and she could take long walks.

There has been up to the present time no relapse, and she is now in fair health.

Case 5.—Miss P. S., aged 30, a sister of the lady whose case has just been given, began the exercises at the same time. From the twelfth year of her age her lungs had been delicate. She had, some years before the writer saw her, suffered from an attack of typhoid pneumonia. There was a slight lateral curvature for which instrumental support had been used. She often had pain in the back and under the right shoulder-blade. About four years before she was seen by the writer she began to cough, and her expectoration was tinged with blood, and muco-purulent. Her feet were always cold. There was a depression on the left side of the thorax, and there were all the physical signs, at that spot, of a mass of tubercles in the process of softening. On the right side there was a prolonged expiratory murmur; and in the back a respiratory murmur could hardly be discovered. She had been losing flesh; was often hoarse; and the mucous râle could be heard at a distance of several feet.

After three months of these exercises a decided improvement had taken place. She is still delicate, but she has at present a more comfortable existence than could have been anticipated for her, from her advanced and long-standing pulmonic affection.

The excellent effect of the Swedish exercises, in pulmonary affections, may be judged of from the recital of the five cases now given; and the writer could add not a few more.

Case 6.—Rev. Mr. ——, about thirty-five years of age, had been living at different Mediterranean stations for some years, and had been obliged to return to England from an

utter failure of his physical powers. He had long suffered form a mesenteric affection, and was reduced to a pitiable condition of leanness and feebleness. He was advised by the writer, for the purpose of being tonified, to try Ling's exercises. He had been subject to repeated attacks of quinsey. He suffered from constipation and indigestion. About two months before he was seen by the writer, an abscess had formed in the rectum, and a great deal of pus had passed away: during that time he had frequently fainted. There was still a fistulous opening, and after every alvine relief he suffered from severe tenesmus, and pressure downward in the rectum. He felt oppressed after meals, was flatulent and often giddy. He is very tall; he stooped a good deal; and at that time only weighed 144 lbs. There was want of vesicular murmur in the upper part of the right lung. There was a slight enlargement of the left lobe of the liver. He measured round the thorax 35½ inches, and on a full inspiration 36½ inches.

He was so feeble that he fainted after the application of the third movement, though most gently and carefully made. The first movement was a light friction of the loins, the second was a rotatory movement of the feet, and the third, after which he swooned, was a most gentle bending and then extension of the fore-arms. These exercises were applied to him when he was in a reclining posture. In ten days, from being hardly able to creep along a few yards, he walked nearly two miles. In six weeks the measurement of his chest shewed an increase of nearly an inch. His strength rapidly and progressively improved; the sufferings of the rectum ceased; the fistular abscess was gradually but effectually cured. In five months he undertook a most onerous and responsible clerical charge, and ceased to take the exercises.

This gentleman has since that time had a severe attack of pleurisy, with effusion; and two years ago, while in France, he had a frightful hæmoptysis. Yet such is his vitality, and such his indomitable pluck, that he still discharges the functions of a clergyman, in full work, in one of the most labour-exacting positions in the kingdom. His health would

now have been good, but he has not learned how to spare himself, and over-work is reducing him to his former state. It should be observed that the patients the writer has submitted to the bio-mechanical treatment had medical treatment from him concurrently; and the reader may judge for himself whether such results in such cases, and in such periods of time, could have been obtained from medical treatment alone.

Case 7.—Mr. ——, aged 40, of nervous-bilious temperament, had been engaged for many years in diplomacy. He had been in enervating climates. For a long time he had been subject to great sufferings of a dyspeptic character; acid eructations, and vomitings of white frothy matter. His spirits were greatly dejected; his complexion was sallow; the expression of his countenance was anxious and worn. His sleep was restless, and interrupted by night-mare. He had giddiness on stooping; cold feet; pain between the shoulders; palpitation of the heart. After six weeks' treatment with the exercises, he found himself, to his own astonishment, well. He became re-juvenescent; and as he is one of the most accomplished of men, so is he now one of the happiest. This pleasant state of things has continued, without interruption, for several years.

Case 8.—Rev. Mr. Y——, aged 32. Has for some time suffered from "clergyman's throat;" has been for years dyspeptic; cannot read even a few minutes without loss of voice; the tonsils and uvula red and swollen; feet cold, and only get warm after walking exercise; when in bed has a sensation of coldness on the outside of the thighs; the pit of the stomach tender to the touch; flatulent distention of the abdomen; shooting crampoid pains in the chest, and especially in the left mamma. He commenced the exercises on the 27th January 1852. His improvement was decisive from the first. All his throat symptoms disappeared; his dyspeptic sufferings were quite relieved. He was under the treatment several months.

Case 9.—Miss B——, in the 14th year of her age, was seen by the writer in April 1852. Four years before had a severe illness, rheumatic fever. She has been since delicate, and subject to severe headaches; her feet always cold; any fatigue or bodily exercise brings on vehement palpitation of the heart. It had been supposed she suffers from an organic disease of that organ. Obstinate constipation; spasms in the back of the hands; she was pale and anæmic; was very feeble, and could scarcely walk across a room without severe pain in the cardiac region. She frequently fainted, and especially at night on going to bed. Her feet and hands were always cold; she was constipated; her visage was wan, languid, yet anxious, and worn in its expression. The slightest allusion to her illness distressed her, and often caused her to faint. The action of the heart was irregular and jerking; the rhythm between the two sounds was equal; there was no hypertrophy. Her father, an eminent theologian, remarkable alike for his piety, his nobility of character, his learning and his eloquence, died suddenly just after preaching a magnificent sermon, of cardiac disease.

The exercises were most cautiously applied by Professor Georgii. In a month a very sensible improvement had taken place in her health. She could walk great distances; she had no longer fainting fits; her feet were warm. The treatment was pursued for three months. The young lady is at this time well.

Case 10.— Rev. Mr.——, aged 40, unmarried, was recommended to have recourse to the treatment by exercises which he commenced on the 1st July, 1852. He then, and for some years previously, had suffered from a most distressing and constant sensation of dragging between the shoulders, obliging him to draw his breath deeply and to sigh constantly. The thorax was fully developed; and the heart and lungs were healthy. He ascribed his illness to a neglected cold four years before this time. The functions of secretion and assimilation were regular, excepting that he was subject to a cold, clammy perspiration. The tongue was white and

dry. His feet were always cold; though his muscular system was well developed, he complained of great weakness, especially in the morning, of the legs, and especially of the knees. He formerly had hæmorrhoids. He was often tormented with strange dreams, which occasioned him great vexation. The bowels acted regularly. The whites of the eyes had a yellowish hue. He was very dejected in spirits, and was subject to uncontrollable fits of crying. Night and day he perspired profusely, and the surface of his body was cold, especially his hands and feet. He was keenly sensitive to the influence of the open air, and in the hottest day felt himself obliged to wear winter clothing. He was liable to violent muscular spasms, which drew down the lower jaw: These spasmodic attacks also occurred in the nasal group of muscles; and sometimes the whole face was distorted. He complained of a distressing sensation of tightness and compression of the forehead, with an instinctive feeling that he could only be relieved by sneezing, which relief, however, he never obtained. When his bowels were constipated, there was at times a great increase of his moral depression, and of his other distressing symptoms. The heart and lungs were healthy.

After he had taken the exercises a fortnight, he became more cheerful; though he still had fits of despondence. His sighings were less frequent. After a month, he was much less sensitive to the air, and after three months the sensation of the compression of the forehead ceased; as well as that of the dragging between the shoulders, when an extensive itching eruption had broken out. Eruptions also appeared on other parts of the body; the distressing perspiration ceased. Even his hands and feet were warm and dry. He no longer suffered from mental depression. He was also relieved from the spasmodic affection of his face, nose, and jaw.

It is ascertained that the cure has been permanent.

Case 11.—Mr. W., aged 51. Had been for a great number of years subject to cerebral congestion. He had been

bled often; leechcd often; and had been assiduously drugged with calomel, antimony, saline draughts, and so forth.

He suffered from extrcme confusion in the head, loss of memory, and a pitiable dejection of spirits. He had in formcr years had a great deal of anxiety of mind, and suffered from stress on his brain. For years he had been subject, periodically, either in spring or autumn, to an annual attack of more severe illness, the chief features of which were: great pain in the region of the heart, with anxiety; heat and weight on the top of the head, with determination of blood to the head; the eyes very red, with a sensation of heaviness; the extremities very cold and benumbed. For these he had been mercurialized, and antimonialized, and coloeynthized, till to the sufferings due to his morbid condition wcre added those due to the medication, salivation, &c.; —extreme debility, horrible depression of spirits, sobs and weeping. He had such an attack at the end of the autumn of 1851, after which there remained a great deal of pain and weakness in the deltoid muscle of the left arm, which disabled him from lifting anything, or raising his hand to the level of the head. There was tremor of the hands; the lower extremities were eold, especially from the toes up to the middle of the legs. There was numbness of the right foot, which was even colder than the left. The top of the head felt hot, and there was a spot as large as a crown-piece which was intensely hot to the touch. He was hardly ever free from a eonstant sensation of heat and weight in that part. The left lobe of thc liver was somewhat enlarged. He was very sensitive to damp and eold. His pulse was regular, 72. The lungs were sound.

Aftcr several months of medical treatment there was a decided improvement in his general health; but it was thought he would derive material benefit from thc Swedish exercises, whieh he eommenced on the 30th October 1852. Those applied to him consistcd chiefly of derivative movements to the lower extremities.

In a month, his lowcr extremitics were warmer, though there was still oecasional coldness with numbness of the

right foot. The paralytic weakness of the left arm was in a degree relieved, and the head was cooler and less heavy to his own sensation.

The movements were then changed, and others were adopted for the purpose of strengthening, by increased innervation, the paralysed motory and sensitive nerves, and also of deriving the blood to the abdominal and pelvic regions.

At the end of two months the patient thought himself as well as he ever was; the usual time for his dreaded attack (autumnal) had passed, and his freedom from it acted beneficially on his mind. There remained some tremulous motion of the hands, but scarcely any sensation of numbness of the right foot. He could read without confusion, and his memory was better than it had been for a long time. The motory power of the left arm and shoulder was entirely restored. The treatment was continued till the 11th of February, 1853.

The writer has seen this gentleman since, and the benefit he derived from the treatment continued, and continues—for he was heard of not long ago.

Case 12.—Mr. L—— aged 31. Had been in the habit of using the common kinds of gymnastic exercises, and had been much given to fencing.

In the beginning of 1853, he began to feel himself incapable of mental application, and especially after much bodily exercise of any kind. He derived some benefit from a short course of the water-treatment. He had been, on several occasions, mercurialised. In the spring of 1855, he complained of general weakness, felt tired after walking no long distance, especially in the legs; any physical exertion brought on aching in the back, and pain in the occipital region. He felt it a difficulty to walk, and to walk in a straight line. His general appearance was that of an anæmic person. Excepting that he could not use his brain, which to him was a cause of distress, for being of the legal profession, he required it to be clear and active, there was no functional

derangement of any kind. After any attempt at mental application he had a sense of confusion and weakness in the forehead. He had increased in bulk of late; his abdomen was rather full for a man of his age. His feet were cold.

He was advised to try these exercises; and after he had used them three months, his health was quite restored, and continues unimpaired to this date. He now feels stronger both mentally and bodily, than he had done for years. It is to be noticed that this gentleman fenced habitually, and used other kinds of gymnastics: but that his health broke down notwithstanding: whereas the influences of Ling's system of exercises, accurately defined and accurately applied, did not fail in their power of developing strength, of giving innervation where it was wanted, and of equalizing the circulation. During the treatment his waist was reduced in size, and his chest was increased two inches in girth.

Case 13.—Mr. ——, aged 27. In February 1856 he consulted the writer. He had cholerine in the Crimea, and again in the Asiatic campaign of Omar Pasha. After long medical treatment, a persistent diarrhœa continued to wear him. Every morning the bowels were relaxed, with a sensation of burning in the lower part of the rectum. If he was not most strict in his diet, pain in the stomach with nausea and vomiting immediately punished him for his imprudence. As soon as the diarrhœa was relieved he had head-ache. His feet and legs were always cold. He complained of great weakness in the loins; and stooped very much. His tongue was swollen, and very red at the tip and also underneath. Had lost a stone in weight during the preceding year.

After the first application of the movements, the diarrhœa ceased. After a week of the treatment, thinking himself well, he gave it up: had a relapse, had again recourse to it, and the diarrhœa was again cured. He is now restored to health. Has no head-aches; no coldness of the feet since the normal circulation has been obtained by means of the mechanical stimulus of these exercises.

Case 14.—Miss ——, in her 13th year, began, early in 1852, these exercises, to correct an anterior curvature of the spine, complicated with a slight lateral deviation in the thoracic region. She was tall for her age, and slender, her head stooping forward; the lower angles of her shoulder blades were projected like the wings of a bird; the right shoulder was three-fourths of an inch lower than the left. After a fortnight's treatment, which was directed to the innervation of the posterior muscles of the shoulders, and the elevation of the right shoulder, the greater part of the deformity was actually removed. The shoulder blades had almost entirely regained their proper position, and almost every trace of the curvature of the spine had disappeared.

Professor Georgii states, that he had only once before seen so rapid and decisive a result of these exercises in such a case. The treatment was continued three months, and the lateral deviation was also cured. The young lady is short-sighted, and could not be induced to try and improve the focal distance, so that she continued and continues to stoop, or the short treatment of a few months would have sufficed for her complete cure. She has at different times, for short periods, had the benefit of these exercises. At this time she is perfectly straight in figure, and is able to cultivate her mind without injury to her physical health. It was said of her several years ago, that she was "haughty without grace;" from her self-improvement and self-control, and from the great improvement in her physical health, it may be said of her now, that she is "graceful without haughtiness."

Case 15.—Mr. ——, aged 26, had been losing flesh, and suffering in his general health for more than a year. His spirits were depressed; and he suffered from flatulence, nausea, sometimes vomiting, and rising of food after meals: he was distressed by a sensation of sinking at the pit of the stomach. The action of the heart was weak; the feet were always cold; the chest was flattened, and he stooped much. On the application of the stethoscope, the lungs were found

to be healthy, with the exception that the right lung was slightly congested, and the expiratory murmur was somewhat prolonged. He was advised to try the gymnastic treatment. Professor Georgii found that the circumference of the chest above the nipples was thirty inches; his weight was six stone six and a half pounds. The mucous irritation of the stomach soon ceased; the action of the heart became stronger; his appetite became good; and he lost the depressing and distressing sensations connected with his long-continued dyspepsia. He was quite cured in three months, when it was found that he had gained two inches in the circumfcrence of his chest.

Case 16.—Miss T——, eight years old. Her chest was narrow, and her abdomen enlarged. She complained of headache, which was greatly aggravated by any attempt at any kind of mental application. The feet were always cold; the lips and nose were swollen, and she was subject to coryza. She had been, for some time, taking medicine for constipation. The pupils of her eyes were dilated. Her mother was advised to put her under the treatment of Professor Georgii. At that time (December 1850,) the six lower dorsal vertebræ were slightly curved to the left; and the right shoulder was lower than the left, by an inch and a half. The last cervical vertebræ were very tender to the touch. After a treatment of four months and a half, there could be found no trace of any deviation of the spine, and no unevenness of the shoulders could be perceived. The general health of the child was greatly improved, and her headache only occurred occasionally. The writer has not heard anything of the young lady for some time.

Case 17.—Master G——, aged 11. His father was a man of advanced age, and his mother of a feeble constitution. At the beginning of 1853, his studies had been suspended on account of his general feebleness, and his suffering from palpitation of the heart, which was brought on, to a distressing degree, by the slightest exertion. He suffered also from head-

ache, and pain in the legs and the baek. He was sallow and pale; and his cheeks were of an ashy hue after the slightest fatigue. He suffered from night perspirations, and his feet were damp and cold. He had, some time before, suffered from a very severe attaek of searlatina, when the glands of the neck had been considerably affected. The tympanum of the right ear was perforated, and he was deaf in that ear in consequence. There was a fetid discharge from both ears. The Schneiderian membrane was swollen so as to impede the breathing through the nasal passages. On blowing his nose, he had pain in both ears. He had stammered from early childhood. The fifth dorsal vertebra was tender to the toueh.

He commeneed the exercises on the 20th of January, 1853, and at the end of Mareh, the palpitations had eeased; he breathed much more freely through the nostrils; his night perspiration ceased; his countenance had a lively expression, and he was quite well, with the exception of his ears.

This brief paper, and these few eases, to whieh many more might be added by the writer, of patients whom he has recommended to try Ling's system of exereises, may suffiee to show the importance of the bio-meehanical treatment. The cases which have been reeited are of suffieient variety and importance to claim the attention of the profession; and it is earnestly hoped that medical practitioners will inquire into and eonvince themselves of the value of Ling's system of exercises, for purposes of education in the way of physieal training, of obtaining a vital re-action where there is want of nervous force or impaired vitality, and of obtaining as an adjuvant to medical treatment, in a great variety of chronic diseases, the beneficial influenee of the mechanical stimulation afforded by Ling's method.

The cases whieh will next be given are furnished by Professor Georgii. Some of them have been already published. Their great variety will shew how great is the range of the therapeutieal efficacy of this method of *bio-mechanical* treatment.

Chronic bronchitis.

Countess de ——, who consulted me in Paris, during the winter of 1847, was in a very debilitated state, and on the verge of becoming consumptive in consequence of bronchitis, which had gradually assumed a chronic character and was accompanied by profuse expectoration.

Being told by her physician that no alteration in her state was to be expected until the arrival of the summer, or by an immediate change of climate and abode, she made up her mind to try this method of treatment.

The patient, aged 35, and of a nervous temperament, suffered from slight night perspirations, and though she had been for several months confined to her room, and almost constantly in bed, she was affected by the slightest change in the temperature. There was some pain between the shoulders, especially under the right shoulder-blade. A deep inspiration excited cough, and in the morning there was abundant expectoration. Auscultation proved the middle lobe of the right lung to be impermeable to the air, and various mucous râles were heard in the back and lower part of the right lung. There was but a very slight amelioration during the first six weeks; however, the patient was even at the end of that time enabled to take a short airing every day, the expectoration was less and the night perspirations ceased. The amelioration then went on at a quick rate, the patient gained in flesh, the cough ceased gradually, and the cure was complete in five months.

The treatment was in the beginning, with the exception of a few sedative movements directed to the thorax and trachea, of a derivative nature, but the cure was afterwards principally effected by a compression directed to the pneumogastric nerve, and a vibratory movement applied to the trachea and the recurrent nerve, alternated with slight and divergent percussion on the back of the thorax, which transplanted to the capillaries of the mucous membranes of the air tubes, produced an increased activity in the absorbent vessels of the lungs.

Dyspepsia and general debility.

Mr. T., aged 41, of lymphatic temperament, had been a sufferer for the last twenty years from dyspepsia, which, when he consulted me, Jan. 1848, had reached a fearful intensity. The patient being utterly reduced in flesh and strength, suffered from constant nausea, and was not able to retain either fluids or solids on the stomach; his bowels never acted without aperients, and he suffered continually from griping pains. From his childhood he was subject to cold feet and headache, and now after meals the headache became insupportable, accompanied with flatulence and eructations. The pupils of the eyes were contracted. After some days' application of the treatment the bowels began to act, the feet became warmer, and the head was considerably improved within the first month. The patient, thus convinced of the influence of the specific movements, was induced to continue them, and in four months he was cured of this malady which after twenty years' duration had brought him to the brink of the grave. With the exception of derivative and roborative movements, the treatment tended in the beginning to soothe the irritated state of the mucous membrane of the stomach and duodenum. Amongst the movements which proved of the greatest influence, one of the chief was a vibratory one directed toward the stomach itself, (left infracostal-vibration) and a friction in the direction of the colon, the body being placed in a half-lying position and the lower extremities approached towards the pelvis, which two absorptive movements gradually lowered the irritability of the mucous lining and regulated the contraction of the muscular coat throughout the intestinal canal.

Eruption of the skin and palpitation of the heart.

Baron de R., of Germany, aged 29, sanguine temperament, had for several years had a disease of the skin, for which he had consulted the most celebrated physicians on the continent without result, and had been subjected to the most various modes of treatment.

The benefit one of his friends had experienced from the kinesipathic treatment induced him to consult me, Jan. 1848. I found the whole face covered with large pimples, especially on the forehead. The eruption, which in general came on periodically, was also abundant on different parts of the body, especially on the chest and the thighs. The patient suffered besides from violent palpitation of the heart, was narrow-chested, and had constant pains in the left side of the abdomen; constipation and cold feet had distressed him for several years.

Although the course of treatment was not continued for a sufficient length of time to remove this complicated illness; the principal symptoms, constipation, palpitation and coldness of the feet were removed; the complexion lost its copper-like appearance and was gradually becoming more transparent, and the eruptions less frequent.

The diameter of the chest was increased during the first month by one and a half inches, and the treatment lasted two and a half months, when the patient left Paris for his native country with his health much amended.

Dyspepsia and palpitation of the heart.

J. M—r, Esq. aged 27; nervous temperament; has been affected for the last three years with violent palpitations of the heart, which are produced by the slightest bodily exercise, or mental anxiety, and invariably after meals; now and then pains along the left arm, and throbbing of the jugular veins; there was found to be a dilatation of the right side of the heart, with hypertrophy; heaviness and uneasy sensation in the præcordia after meals, as well as flatuleney. The patient is rather constipated; the eyelids red and swollen; legs, feet and hands cold. He is almost devoid of moral and physical energy, and the muscular system is in general atrophied. Having in vain, during the two first years of his illness, tried various medical treatment at home and abroad, the patient at last found some relief from a few simple hydropathic applications; but the above-mentioned symptoms, though in some measure lessened, were

still sufficiently violent to prevent the patient attending to any occupation. After two months of kinesipathic treatment there was a decided improvement in the general health; the patient felt himself stronger and livelier; although the palpitations still continued, they were neither so easily brought on, so violent, nor of so long duration. The bowels acted regularly; the inflammation about the eyelids had entirely disappeared, and the lower extremities were warm. The patient continued the treatment till a cure was effected.

General weakness and deviation of the spine.

G. M—r, the son of the preceding patient, 7½ years old, was, in consequence of an illness six months ago, during which he was several times leeched, brought to a state of excessive weakness, so much so that he was scarcely able to keep himself upright. The abdomen large and expanded, especially after meals; the chest narrow, measured twenty inches in circumference; the right shoulder half an inch higher than the left; both shoulder blades very prominent, especially the lower angles, and a left lateral curvature of the second degree already formed; now and then, especially after any quick movement, palpitation of the heart.

The general appearance of the boy began, after the first week, to change for the better; and I found, after a month's treatment, on examination, the traces of the curvature almost vanished, at the same time the circumference of the chest had increased above one and a half inches; the same mode of treatment was continued. Examined again at the end of the second month, every trace of the deviation had disappeared, the circumference of the chest measured twenty-two inches—liveliness and health were expressed in the features of the little boy.

Phthisis prevented.

In December, 1849, I was consulted by Miss B—— for a violent cough. She had just returned from the Continent. Upon examination, I ascertained that the periodical secretion had been checked, by exposure to wet and cold about three

months previous; and soon after a dry cough of the most violent character began, and had lasted ever since. Having in vain tried the usual remedies under similar circumstances, she was willing to try the movement-cure, of which she had heard abroad.

Her cough came on in fits, and gave her scarcely a moment's rest night or day, but was worse in the evening. The fits of coughing were most distressing, and so violent as to disturb all in the house where she lived. She had a severe pain in the middle of the chest. The bowels were constipated, and she had been obliged to use medicine every day, from the beginning of her illness. She suffered much from flatulence, with distension and uneasiness after meals; occasionally she had a pain across the loins, and severe daily headaches, with sense of weight in the forehead. Her lower extremities were very cold, and the face was very much flushed. She stated that she had lost several near relations from pulmonary consumption. On stethoscopic examination, I found some roughness in the respiratory murmur, and some mucous rattle in the air-tubes in the right lung, and nothing more. After the first week of my treatment, the cough was diminished, and the feet and legs were warmer; the face was less flushed, and the headaches rarer and less severe. In six weeks the period returned, after a course of strong active movements, directed to effect an increased flow of blood towards the pelvic organs. The constipation yielded after the second week, and the patient, whose cough had nearly ceased (all the other symptoms have yielded to the curative influence of the movements), discontinued the treatment, and has remained up to the present moment in perfect health, having married and become a mother.

Chlorosis.

Miss C——, aged 26, of tall and slender figure, having suffered for a considerable time from general weakness and irregularity in all the organic functions, consulted me in the beginning of November 1850. She stooped very much, and had almost entirely lost the power of keeping herself upright.

A constant headache and a spasmodic affection of the pit of the stomach had lasted with scarcely any intermission for nearly six months, and she constantly felt languid and tired. Her complexion was greyish, and her lips pale. The period very irregular, generally twice a month, but had lost the natural colour, being of a pale brown. There was a great deal of bearing-down pain and a yellowish discharge. She had a gnawing pain in the lower part of the back; she had lost all appetite. Violent palpitation of the heart and fainting fits at night, with dread of being left alone. The hands and feet were always cold; the chest measured twenty-seven inches. The vivifying and invigorating effects of the specific movements in general, and especially their action on the organs of blood-development, have in few instances been more evident than in this case. After a month or two, the colour of the face was altogether changed for the better, and the eyes became more lively. Without detailing here all the shades of progress which occurred during a treatment of four months, suffice it to say, that at the end of this period the patient not only perfectly recovered her health, but gratefully acknowledged herself in a better state than for eight or ten years previously. The chest increased four inches in circumference; and the extraordinary change in her health was clearly due to the better condition of the blood, which, by the increased capacity of the lungs, had been rendered fit to nourish and revivify the previously languid organism.

Cerebral congestion.

Miss D——, consulted me during the summer of 1850, for a distressing headache, the principal symptoms of which she describes as follows:—"I have always been subject to headaches from my childhood, but from the age of eighteen to twenty I had them every alternate day. They have increased every year, and when at Bonn (in Germany), four years ago, I had a most violent attack for five days. The pain is, during these attacks, most excruciating, principally on the right side of the head, from the ear to the middle of the forehead. Two years ago, I was seized with sickness and dreadful

heaviness in the head, which was immediately followed by a violent vomiting of blood, which recurred three times during a month, after which this attack ceased. Afterwards, I was daily, two or three times, seized with a trembling all over my body, so violent that persons in the adjoining room could hear the chattering of my teeth. These fits of trembling having continued for three months, my health began gradually to improve, with the exception of the headaches. The fits of trembling returned during last spring, though not so violent, and were accompanied with faintings."

The head was always hot, especially on a round spot on the top of the head; the action of the heart feeble and accelerated; constipated bowels and cold feet.

As the patient was by nature of a strong constitution, I prescribed at once twelve movements directed to relieve the congestion of the brain, increase the tone of the bowels, and derive the blood towards the lower extremities. The effect of the specific movements directed in this case was immediate; the bowels acted regularly from the second day of treatment, and the feet, before always damp and cold, even in the middle of summer, became warm. There was no fit of headache during the whole course of treatment, which lasted six weeks. Although the patient a short time afterwards met with a severe accident, in which her chest-bone was very severely bruised, and she received a concussion of the brain, there has been no recurrence of the headache. There have been few more satisfactory instances of the excellent effect of the bio-mechanical stimulus, properly directed, of Ling's exercises.

Rheumatic gout.

Mr. ——, aged 33, was in the most distressed state, both in mind and body, when I first saw him in August, 1850. He had already suffered during two years from a painful swelling in the ankles, which occasioned the most excruciating pain when walking, and as he was obliged to take long daily walks, he was fearful he should be obliged to resign a situation on which his means of living depended. Anxiety

of mind, thus added to his continued suffering, almost entirely broke down an originally not powerful constitution. The rheumatic swelling had invaded the ankles and both feet, on the insteps of which there was a considerable swelling, with much heat and redness. The left foot, which was most affected, was nearly one-third larger than the right one; the heels and the joints of the great toe were excessively tender, red and swollen. When he put the left foot on the ground to support the body, he almost shrunk from the pain, notwithstanding which he was obliged to crawl about the whole day. There were varicose veins on the outside of the left leg, from the external ankle. Eight years ago one of these veins had burst. Occasionally he had pain and stiffness in the knees, and he dragged his legs after him. The abdominal and thoracic viscera appeared to be healthy in their functions, though of slow and weak action; occasionally, however, he complained of sick headache. After a three weeks' course of selected movements, he began to walk a little easier, the result of absorptive movements applied to the lower extremities, and of a linear friction applied along the course of the sciatic nerve, in order to equalize the innervation in the terminal twigs of that nerve. The other movement tended principally to improve the tone of the lungs, in order to increase the arterialization of the blood. The treatment was changed after six weeks, and more active and strengthening movements were introduced. The swelling of the left ankle, which most obstinately resisted the treatment, gradually subsided under the use of the tourniquet above the ankle, for four minutes at a time; and a percussion applied to the sole of the foot removed the tenderness. The treatment ceased in January, the patient being perfectly well, and having gained seven pounds in weight; his chest, which measured at the beginning of the treatment thirty-three and a half inches, was found to be thirty-seven and a quarter, having thus increased three and three-quarter inches in circumference. Having obtained better health and spirits than he had previously for many years, he has since married, and continues up to the present time perfectly well.

Deviation of the spine.

Miss B——, aged 8, was brought to me in the beginning of July, 1850, the mother having observed a deviation of the spine, resulting, as she thought, from a fall down a staircase some months previously. I found the three lowest dorsal vertebræ somewhat prominent, and a slight right lateral curvature of the spine. The shoulder-blades, especially at the lower angles, were very prominent; the arms and upper part of the body were atrophied, and the abdomen much enlarged; she also suffered from constipation and daily headaches, and was of a pale, yellow complexion. She measured twenty-one inches round the axillæ. When the treatment, of two months, ceased, the back was perfectly straight, the shoulders were even, and the constipation as well as the headaches cured. The circumference of the thorax had increased an inch and three quarters. The same movements were used during the whole time. As in this case the deviation of the spine was the result of general weakness of the spinal muscles, strengthening movements, calling into play the dorsal motory powers, were entirely used, with the exception of a few derivative movements for the legs, one movement regulating the action of the bowels, and two directed towards the muscles of the shoulder-blades.

Deviation of the spine.

Miss G——, aged 10, six years ago had a brain fever, which left traces of general weakness in the whole constitution. Her mother was advised by the family physician (who, having observed the bad position of the child, had himself directed the use of a few movements) to consult me. I found the four lower dorsal vertebræ deviating to the left, and another less decided curve to the right side, in the formation of which, the two lowest of the cervical vertebræ and the five superior dorsal were implicated. The right shoulder was nearly an inch lower than the left; the right hip was high and prominent. After seven weeks' treatment there was already considerable amelioration; the shoulders were on the same

level, and the movements directed to act on the left hip had produced such a change for the better, that the mother, being obliged to leave England for the Continent, was enabled to follow up the treatment by the application of a few movements which were thought necessary to effect a cure, and I have had the gratification to be informed by letter that the little girl is perfectly restored.

Paralytic affection of the left arm, resulting from concussion of the brain.

Mr. I. D. H——, aged 77, applied to me, October 1850, having met with an accident six months previously, by a fall on his head, on which occasion the whole nervous system was very much shaken, five or six weeks after which the left arm and leg became useless. Having tried in vain the usual therapeutical resources, as well as galvanism, sea bathing, frictions, with various ointments, &c., it was considered that the complaint at his age was incurable. On examination I found that the left elbow could only be moved four inches from the body, and even then it produced excruciating pain. The elbow joint was moveable, although the movements of extension were excessively weak. The wrists and fingers were free in their movements, although useless to the patient. During the night there was a great deal of pain in the shoulder, principally at the insertion of the deltoid muscle; this pain increased on the slightest change in the temperature, as well as during the night, if the shoulder was uncovered. There was a dragging movement about the left leg whilst walking. Constipation of bowels for many years, which obliged the patient to use the enema, pills, &c. The extensor muscles of the back having given way, the patient was in a very stooping position.

Absorptive soothing frictions were at first applied along the base of the left shoulder blade, and lubricating movements of the wrist, and specific active movements increasing the innervation in the muscles that bend and stretch the elbow, wrist, and finger joints, leaving the shoulder in a complete passive state. This treatment, in conjuction with inner-

vating movements to the lower extremities, principally the left one, a few specific active movements to the extensor muscles of the back, which were systematically arranged, was enough, in the course of three weeks, to produce such a change in the nerves of the shoulder, that the lubricatory movements to the shoulder joint could be introduced. The pain gradually gave way, the mobility increased—and at last was entirely recovered, under the influence of vibratory movements directed to the ligaments of the shoulder-joint. Some few movements, directed to the elevator muscles of the left shoulder, and to increase the innervation of the deltoid muscle, were enough to give full use and vigour to the left arm. The action of the bowels had become more and more regular, and after three months, the patient declared himself stronger, and in a better state of health than he had been for many years.

Nervous palpitation.

Mr. S——, of Norway, sought my advice in the beginning of October, 1850, for palpitations of the heart, which come on especially after meals and on walking. He is 35 years old, single, and much engaged in writing and mental occupations. When a child he used to suffer from scrofulous affections, and has still an eczema of a scrofulous character covering the sternum, as well as on the insides and anterior aspect of the thighs; the eyelids are red and tumefied, in consequence of ophthalmic affection with which the patient had some time previously been affected, along with an eruption on the face, for which a blister on the arm had been used with some relief to him. In the lower part of the upper lobe of the left lung there is some mucous "râle;" in all other respects the lungs appear healthy. The impulse of the heart is rather strong, but beyond that no diseased action of the heart can be ascertained; but he cannot sleep on his left side. There is great pain and weakness of the back in the lumbar muscles, preventing him from keeping himself erect. The feet are cold. In the middle of Novem-

ber, when the treatment was interrupted, he declared himself stronger and better than for years, but the palpitations of the heart, though improved, had not entirely disappeared. He has increased round the thorax $1\frac{1}{4}$ in., and has gained a perfectly upright position, the dorsal and lumbar muscles having obtained a greater amount of innervation and power to support his unusually tall frame. (His height is 7 ft. $3\frac{3}{4}$ in.) The pain in the lumbar region had disappeared the second week.

Hypochondriasis.

Mr. L. C——, from Geneva, aged 42 years, lymphatic temperament. After the loss of his wife and several near relations in the short space of a year, the patient had gradually sunk into a state of extreme nervousness, with great despondency and fits of crying—in short, he suffered from full-developed hypochondriasis. When he consulted me, 21st November, 1850, the symptoms were the following: sensation of emptiness and weakness at the top of the head, at times interchanged with giddiness, and a most severe and distressing pressure over the vertex. After meals pain in the right side of the abdomen corresponding to the right iliac fossa, relieved by pressure of the hand; puffiness and fullness after meals. Sometimes a weakness of hearing as well as of the eyes, which symptoms increase when the stomach is out of order; the functions of the bowels irregular, suffering at times from diarrhœa, at other times again from costiveness; tongue coated. About a fortnight ago open hæmorrhoids, with much bleeding during the last week. At times excessively troubled with flatulency, especially before the depressed or excited state of the mind, which is extremely distressing to the patient, as he sometimes feels the greatest agony, and cannot help bursting out crying. Used formerly to suffer from an enlargement of the liver, but since a course of the water-treatment, about six months ago, there is no other trace of this affection than slight soreness on pressure in the right hypochondriacal region The

urine normal; the head is hot, and the face very much flushed; the feet cold and clammy. Feels a constant want of taking a deep breath. There is an eruption on the legs of herpetic character.

December 24th.—Is in every way greatly improved; the hæmorrhoids have been flowing freely. His appearance is so "changed that his friends do not know him;" his strength generally increased, with a feeling of greater vitality; feet warm; his appetite is not increased, but more natural; the irritation of the intestinal tube greatly diminished; the tongue cleaner; and the head is much more free. From the first week there has been an eruption and swelling of the back of the right hand, on the knuckles, and on the left hand a vesicular eruption; at the same time an augmentation of the herpetic eruption of the legs and feet; and the patient has observed small pimples in the throat. He feels an increased facility of breathing, as if the chest were widened. The fits of despondency come on very seldom, and he appears gradually to regain the equilibrium of his mind. After another month he was perfectly well, and went to his country, from which he returned in 1852 for another short course of the treatment. He continues well, and is, according to the latest news I have had from him, remarried.

Cerebro-spinal congestion.

Mr. R——, aged 34, having suffered for eight years from a periodical headache, consulted me at the beginning of January, 1851. The patient's head was always heavy and hot; hands and feet cold as ice. The attacks of headache began by the patient seeing objects only half their size, and the power of vision gradually diminished, until he became entirely blind for the time; after which came on the most oppressive headache, from the eyebrow to the vertex; in the same proportion as the headache increased, there was a gradual improvement of the symptoms of the eyes. On rising from a sitting position he always felt giddy. Great pain and soreness in the loins, and especially in the two lowest dorsal and

the two first lumbar vertebræ, which were very tender to the touch; this the patient attributed to a fall he had some time ago, a severe concussion of the spine. I employed here only two absorptive movements for the brain and cerebro-spinal cord, and a few derivative movements made on the lower limbs. After the first month the patient stated that he felt an ease and clearness about the head, which he had not experienced since the commencement of his illness. No attack of blindness since the beginning of the movement-cure. The soreness of the spine was quite cured. The feet always warm; giddiness very seldom, and the congestion to the brain in general very much diminished. Another month's treatment sufficed for the entire removal of the disease, which had baffled all the other methods of cure that had been tried during eight years. I have lately had an opportunity of ascertaining that no relapse of the temporary blindness has occurred since the treatment ceased.

Cerebral Congestion.

Mrs. T.—— was recommended to try the Swedish gymnastic treatment in March, 1851. After scarlet fever six years ago (she is now 46 years of age), she experienced a constant oppression of the head, with sensation of great heat. The feet and legs at the same time excessively cold; even in bed it is impossible to get them warm. She suffered from a severe shock of the nervous system some years ago, to which she refers a great part of her illness. She has had twelve children, is very stout, weighing 15 stone. As there have been three cases of apoplectic seizures in her own family, her friends are much alarmed on account of her present symptoms, especially as she suffers from great excitement of the brain at times, alternating with a sleepy and heavy drowsiness. The action of the heart very feeble, and the pulse low and small. The legs also are considerably swollen. The treatment was exclusively of a derivative character, tending to increase vascular action in the lumbar region and lower extremities, with the effect that the latter in the course of two weeks began to regain a more general and natural tempera-

ture. At the end of the third week, when the head was very much relieved and the drowsy sleepiness almost entirely disappeared, the treatment was suddenly interrupted by a serious illness of one of her children, which obliged the mother to sit up with the little patient, for three weeks nearly, night and day. There was every reason to believe that an improvement so recently established would not be able to withstand this exhausting fatigue and anxiety of mind, but I had the great pleasure more than a year afterwards, when she brought one of her children for the mechanical treatment, to ascertain from the patient herself that no oppression of the brain has been felt since she left off the treatment, and that the feet have continued warm ever since.

Ague.

Mr. S. W., an Hungarian officer, aged 26, had suffered from ague for nearly two years, when he consulted me on the 18th of August 1851. He had used without results the usual remedies, and at last about three months ago had a course of the water-treatment at Graefenburg, where he was cured of the fever and had a "critical eruption" on the stomach, on which a wet compress had been worn. However, being a political refugee, he was suddenly obliged to leave the water-establishment to seek shelter on the free shores of Great Britain, where however shortly after his arrival his old enemy, the fever, again assailed him. The fits came on every third day, but the fever did not last more than 3 or 4 hours, and did not even oblige the patient to go to bed, but was very weakening. The following day he was quite prostrated, his complexion was yellow, as was also the white of the eyes. There was great swelling and puffiness in the hypochondriacal region, and considerable sensitiveness on pressure of the pit of the stomach; no appetite, tongue white and coated, and the bowels were costive. After two days' treatment a change in the periods of the fits took place, coming an hour later. The ague ceased after August 31st. The appetite was very much improved, as also was his appearance. At the end of the last week an eruption round

the waist had taken place, similar to "the crisis" at Graefenburg, which had been interrupted three months ago from the discontinuance of the water-treatment. The pain in the pit of the stomach had disappeared, and the abdomen was also reduced by two inches in the circumference.

Cerebro-spinal affection and muscular contractions.

Mr. H. ——, aged 18, and of nervous temperament, had, up to his present age, never had any proper use of his limbs. All the flexor muscles of the extremities are more or less contracted, and have, as well as the adductors, such decided preponderance over their antagonist muscles, that he is prevented, not only from walking erect, but also from dressing and helping himself in any way. On attempting to stand erect, he immediately falls double, and the knees become bent inwards, seeking, as it were, support against each other. There is no anchylosis in any of the joints, although all the movements are extremely limited. When sitting he generally stoops, with his head much bowed, and sinks together, but can for a short time keep himself upright. The pronatory and supinatory motions of the under arms are entirely impossible, but exist in the left shoulder joint in a slight degree. The left side is in general stronger and more pliant, and the principal support of the body is on the left leg. The feet are not only flattened, but form a convexed curve, so that when standing the heels and toes do not touch the ground—he actually stands as on two boats ready to be upset, *swaying backwards and forwards.* In standing, the body sinks gradually forwards; the elbows are kept bent. In attempting to lift the hands to the head, the wrists become very much contracted, as well as the fingers, with the exception of the second and third, which are straight. The elbows cannot be brought on a level with the shoulders. Appetite and all the organic functions normal. Mental faculties well developed and active, and he is fond of reading and mental occupation. Has a great difficulty in walking, as he cannot, without

great exertion, lift his feet from the ground, or separate the knees from each other, on account of stiffness in the hips. He cannot, even in making the greatest effort, lift the foot more than six inches from the ground, and is then ready to tumble. The right arm can only, with the greatest of difficulty be elevated, the deltoid muscle being almost completely paralysed; all attempts at pronatory movements in this arm are ineffectual. The muscles in general appear fairly developed, but principally the pectoral muscles, and especially the lower portion of the pectoralis major. At times he suffers from headaches, pains in the chest, and palpitations of the heart, principally on reading aloud, or if any sudden shock or noise occurs, when he feels very nervous. Feet cold. Sometimes giddiness in stooping. After three weeks' treatment, the pain in the chest and the palpitation of the heart had nearly disappeared, and he had had no headache from the beginning of the treatment. He feels stronger in the right side and more lissome in the movements, principally at the shoulder and hip joints; can keep himself erect for a short time without the knees touching each other; he can even get into an omnibus with much less difficulty than formerly. This improvement in so short a time was an encouragement to follow up the treatment, and as it could not be arranged for the patient to remain in London but at certain intervals, the treatment has, to a certain extent, been continued at home. In September, 1852, having then resumed the treatment for two months at my establishment, he was able to walk steady and more upright; he can dress himself, and can even shave. The arms can now be raised above the head, almost perpendicular. The hip-joints have also increased in capacity and power, the insteps have gained strength, so that he can balance and support himself on tip-toe. Had the treatment been properly attended to, and continued for a sufficient length of time, I have no doubt that the cure would have been complete: as it was, however, his father expressed his sincere thankfulness for the improvement which had been obtained.

Congested liver and constipation.

General M——'s ease may be eited as an instanee that the medieo-gymnastie treatment, even at an advaneed age, may be tried with hope of sueeess. During all his life-time, prineipally when young (the patient is now in his 70th year), had gone through a great deal of hardship. He had been in several eampaigns, had been several times wounded, onee in the left thigh, another time in the right side of the ehest, and again in the head. He is tall, and of a robust eonstitution, but has suffered for many years from indigestion and a "torpid liver." Had last year a very bad attaek of the liver and the kidneys, whieh kept him in bed for several weeks, and weakened him very mueh. Passes about onee a month red gravel, and there is eonstant irritation of the bladder, from whieh he is often disturbed in the night. Sometimes he suffers from exeessive giddiness, and sees eonstantly blaek spots before the eyes. Has a heaviness and a feeling of weight at the baek and also on the top of the head, where the temperature is inereased. Tendeney to cold feet, though less so sinee the patient began to wash them with eold water in the morning. Sometimes heartburn; eonstipation for some time baek, and flatuleney; Is obliged to take, every evening, an aperient pill. A pressing weight in the right side, eorresponding to the seat of the liver. Pain and stiffness at the small of the baek, and an aehing in the legs when walking, and stiffness in the knees of a morning when getting up, or rising from a ehair. The aetion of the heart is rather feeble. Feels very low spirited, and disinelined to go into soeiety. Aeeording to the notes of the ease, the patient found, even on the third day of treatment, great relief, whieh he expressed thus: "Sir, you have loosened my liver." The pain in the head had eeased after the first week; and after three weeks treatment he had no more pain and uneasiness in the legs, and he felt renewed vigour throughout the whole system. He had a new set of movements, whieh were eontinued for a month; and sinee that time he has been quite well.

Dyspepsia and constipation.

Mr. B.——, of Gottenburg (Sweden), with a robust constitution, had some time after his arrival in England, 1851, from change of diet, got out of health. When he sought my advice in the middle of October, 1851, he suffered from a fully developed dyspepsia. At the age of eleven he had been under the treatment of Professor Branting, at the central Institution at Stockholm, and was entirely cured of a right-sided inguinal hernia. Three or four months after his arrival in England his present complaint began, and he has used a great deal of medicine—always one pill at dinner, besides draughts without end. As an example of the amount of medicine he had been swallowing, he mentioned that his monthly bill for medicine often amounted to £ 5 : 10s., more than enough to ruin one of the strongest constitutions. His present symptoms are—obstinate constipation, no evacuation of the bowels without an enema, often eight days passed without any action whatever. A distressing flatulency, especially after meals, when there is a sensation as from an immense weight under the chest, especially at the pit of the stomach, where great tenderness on pressure is manifested; he also suffers from eructations and acid vomitings at times. The urine is thick; he has restless nights, and is long in falling asleep. At the end of November, after five weeks' treatment, he was in every respect improved; the bowels have acted freely since the third day; the urine continues still to be turbid, but not constantly so. After meals eructations and flatulency much diminished, so also is the weight under the chest. For about a fortnight a weakness had existed in the right groin in consequence of a sprain. There was considerable tenderness of the inguinal glands. A soreness under the right ribs, corresponding to the site of the gall bladder, was felt by manual examination. The set of movements was changed accordingly, and the treatment continued till the middle of February, when the patient was completely cured.

Deviation of the spine and incipient consumption.

Miss E. S.——, having ascertained from a cousin of hers, who, with great benefit, had been under my treatment for a deviation of the spine, that the treatment in similar cases is not only gentle, but often speedy in its result, and very seldom fails in giving relief, wished to begin a course of movements. Twenty-three years ago she began to suffer from pain in the right side, a slight cough, and a general weakness in the spine, the right shoulder began to grow out, and since 1840 she always used to wear "a strong spinal support," which produced a great deal of pain and soreness under the arm-pit and the most protruding part of the shoulder. When it is taken off, the spinal muscles are so weak that she almost falls double in attempting to sit for a moment erect. The chest is very narrow, the head excessively bent forward. On the slightest exertion, palpitation of the heart sets in, and under the right arm and under the posterior part of the right side of the chest, a sensation of weight which by breathing occasionally produces a gnawing pain under the right shoulder blade. She has also a sensation of cold all down the chest, and a short, fatiguing cough at times attended with expectoration. The expiratory murmur is somewhat prolonged under the right collar bone, and there is at the same time a roughness of that murmur. Under the right shoulder blade the same phenomena are exhibited, and, besides, some mucous "râle." Percussion dull all over the right side. The left lung is sound. Besides general weakness she feels a great deal of pain and uneasiness in the loins after walking. She is always hoarse, and cannot even attempt to read aloud in consequence of the weakness of the chest. Tongue furred. She has also aching in the pit of the stomach, and complains of acid eructations, and has generally no appetite. Rather costive. Leucorrhœa between the periods, which are rather profuse, and last for a little more than a week. Feet and hands always cold, the latter benumbed, and sensation of cold

even in the middle of summer. Height 5 ft. 5 in.; weight 9 st. 1 lb.; measures round the axillæ 30½ in.; by inspiration 31 in.; across the chest 13½ in.; across the shoulders 10¾ in. The deviation of the spine is right lateral; the fifth to the tenth dorsal vertebræ deviate to the right half-an-inch from the vertical line, and in the lumbar region there exists a compensatory curve to the left. Right shoulder half-an-inch lower than the left. Second, third, and fourth lumbar vertebræ are tender to the touch. Treatment began 1st December, 1851, and at the examination, 23rd December, she expresses herself generally much stronger, and especially in her back, and she can now walk a distance of about two miles without any fatigue, even without supporting stays, which had been left off from the commencement of the treatment. She measures round the axilla 31 in.; by inspiration 32 in.; across the chest 14⅛ in.; and across the shoulder 10½. The patient returned for Christmas to her home in the country till January 13th, when having taken a bad cold some new alarming pulmonic symptoms, also involving the left lung, had set in; the spinal irritation more intense, and the pressure on the left side of the spine producing a peculiar sensation internally. Great deal of itching pain under the left collar bone. The treatment was then resumed and continued till May, when the pain below the left collar bone was gone, and the patient was altogether stronger, and could walk great distances without fatigue. The shoulders were even. Pain in the loins disappeared. Feet warm. Sleep and appetite very much improved. Pain in right side and under the right shoulder blade still existed, although in a considerable degree diminished. The spinal deviation in itself only slightly improved, the treatment having almost all the time been directed principally against the constitutional derangement. Weight 10 stone 2 lb.; Height 5 ft. 5⅛ in. She measures round the chest 31½ in.; by inspiration 33. Thus she has increased in weight 1 stone 1 lb.; ⅛ in. in height; round the chest 1 in.; and her breathing power 2 inches.

Deviation of the spine.

Miss C——, aged 20, was advised by Professor Macdonald to try the gymnastic treatment, in the Spring, 1852. Already at the age of 11, her mother first observing one of her shoulders beginning to grow out, she was advised to wear an orthopædic support. This was continued for four years, but finding no relief or amelioration, it was left off. She used as a child to be a sleep-walker, and is still restless, talking in her sleep, and does not feel refreshed on her awakening in the morning. Four months ago she began to suffer from increased weakness in the back, as well as much pain under the right shoulder blade. There is at present a right lateral curvature, and the right hip is considerably prominent; and the left shoulder is three-quarters of an inch lower than the right. The face is very much flushed, and she suffers occasionally from headache, feels languid and weak, and the appetite is rather indifferent. The treatment began 24th May, 1852, and after a fortnight the left shoulder was not only more developed, but raised to the same level with the right. The treatment, which was afterwards more directed to efface the curvature of the spine, continued till the middle of August, when, with the exception of a hardly perceivable fullness of the right shoulder, all traces of the deviation had disappeared. She had increased $1\frac{1}{4}$ in. round the chest; at the same time her general health is so much improved, that she declares she had never before felt so strong and well. Two repeated examinations, at long intervals, have satisfied me that no relapse has afterwards taken place.

Deafness and noises in the ears.

Mr. ——, aged 31, had restless nights, felt languid, and suffered from indigestion, with aching pain in the stomach, when he consulted me at the end of July, 1852. Besides having been deaf in his right ear for more than twenty years, there has been for several years, a fœtid discharge from it. He observes that, after a cold about five weeks ago, the hearing in his left ear also began to fail. There is a

sensation of fulness, and as of bursting noises, in the head. The chest is rather narrow and contracted, but otherwise the patient is healthy; the circulation being generally good. He measures round the axillæ 35 inches, and round the mamma 34 inches, across the chest 14½ inches. The treatment was continued till September 3rd, when the patient himself stated as follows: "I feel less languid, my hearing began to improve since the first week; the left ear was quite restored at the end of the second week; the hearing of the right ear is so much improved, that I can distinguish sounds with that ear better than previously with both—as, for instance, I hear at present music, and the ticking of the clock in my house which I never heard before, and there are no more noises in the head. Since the first week there has been no pain in the stomach, and I feel altogether better in myself, and as if I had more life in me." Round the axillæ he measured 37½ inches, showing 2½ inches increase; his breathing powers are increased to 36¼ inches, shewing an increase of 1¾ inches.

Tic-doloreux.

Mr. A. S——, aged 72, suffered from most violent neuralgic pains of the right side of the face, and having been recommended by some of his friends to try the Swedish exercises, asked my advice in the beginning of September, 1852. The affection had first begun nine years ago, and after having lasted five years, it ceased of itself. In the mean time enormous quantities of medicine had been swallowed, and all the teeth in the upper jaw had been extracted. Till three months ago the patient has been comparatively well, when after considerable mental exertion, having attended as a juryman for three or four days during the intense heat of June last, the pain suddenly reappeared. The fits of pain are described as most agonizing, and seated principally above the right eye, and there is almost always a knawing shooting pain in the upper gum. During the attacks the patient cannot speak, as the slightest movement

of the lip highly increases or provokes the pain. After the paroxysms are over, there remains a pain and heaviness in the right side of the temple, extending towards the occipital region. The pain extends at present all about the ramifications of the 1st and 2nd branches of the tri-facial nerve on the right side. The slightest touch is unbearable, and especially of the nose, lips and eyelids, which makes shaving the most dreaded operation. There is a great deal of lachrymation, principally of the right eye. The attacks generally are worse at night, thus preventing the patient from sleeping often throughout the whole night. Bowels rather costive. Takes daily exercise by walking about six miles. The thoracic organs healthy, and the circulation in general good, pulse 72. October 1st, when the treatment was shortly interrupted, the patient gives the following account: "He sleeps better, and the pain comes at longer intervals. Bowels more free. The aching of the gums almost entirely disappeared." On the 20th of October the patient came again, wishing to resume the treatment, as the pain had returned most violently over the right eye, following the course of the supraorbital nerve. Much discharge of tears from the right eye; pain described as agonizing, and preventing all sleep. Bowels again sluggish and irregular. The treatment was then resumed and continued till the end of December, when all pain had ceased.

Hæmaturia.

General K., Hungarian refugee, sanguine temperament, aged 38, suffered from strangury, and the urinary secretion is often mixed with blood. He used formerly to suffer from hemorrhoids. Led a very active life during the war of independence in Hungary, but whilst a prisoner in Turkey in March 1852, he about twelve months ago was seized with a great deal of uneasiness in the perineal region, and a difficulty in making water, which was mixed with blood to a considerable degree; at the same time the bowels were very costive. This state lasted for about three months, notwith-

standing the usual medical appliances, when suddenly, after a hearty military feast, all came right as of itself. After a difficult journey and sea voyage he arrived in England about a month ago, when the same symptoms began to reappear. Since three days the bowels have not acted, the urinary secretion is scanty, and considerably mixed with blood; besides the patient suffers from violent headache and itching of the seat. There are no other morbid symptoms. The patient being of a very robust and active temperament, after a fortnight's application of the mechanical and stimulating treatment, declared himself quite well, in fact, already after the first week the urine passed without the slightest difficulty, and the bowels had become regular.

Enuresis.

Mr. M. T——, aged 17, of lymphatic-choleric temperament, had suffered, since childhood, from involuntary nocturnal micturitions. Everything had been tried in vain, from the most orthodox and heroic means of the old school, to hydropathy, homœopathy, &c. Besides occasional headaches, he is himself not aware of any complaint. He is unconscious of his mishap, nor is he awakened by the micturition, which, however, occurs every night. The tongue is coated; there is a sensation as if he wanted to draw a deep breath, when he often feels a catching pain in the left side. Great inclination to stoop. As a child, had an eruption on the skin "like the appearance of nettle-rash, with a great deal of itching," which continued more or less up to the age of fifteen. About this time he suffered from great pain and soreness after making water, and observed one day that the secretion was mixed with blood. This lasted for a week. He was treated by an eminent physician in Scotland for more than two years, but without effect on the original complaint. There is no tenderness of the spine, excepting by pressure on the upper part of the sacral bone, where there is a very tender spot, the slightest touch of which makes him wince with pain. Slight pressure above the

pubic bone produces also pain, and a sensation as if wanting to make water, and also a sudden throbbing pain in the chest below the left nipple, and a shortness of breath, which was relieved after a few minutes by a fit of yawning. The patient, who was not aware of either of the two last-mentioned symptoms, observed that he had occasional fits of short breathing, without any apparent cause, which also through yawning were dispersed. Since the beginning of the treatment, 30th May, 1853, up to June 28th, there has been only on one occasion a relapse of his complaint. This occurred in the beginning of the second week. He keeps himself more upright, is altogether of a more lively and healthy appearance. His parents wishing to ascertain whether this unexpected change, in a disease which had hitherto baffled every attempted means of cure, was attributable to the movements, proposed that the treatment should be interrupted for a journey on the continent, and expressed themselves willing to let him try it again, should any relapse occur. This has not taken place.

Rheumatic paralysis.

Mr. N——, aged 35, by birth a Russian, had suffered for two days from paralysis of the right side of the face, when he consulted me in July 1853. About six years ago he had a similar attack of rheumatic paralysis of the left facial nerve, after exposure of the head to wet and cold; and at the age of about thirteen he was for the first time similarly affected. From both his first attacks he recovered, only very slowly, and the last, which occurred whilst a medical student at Berlin, did not yield till after four months, when at last he recovered under a repeated use of galvanism. The present attack began in the evening, two days ago, when he first felt heavy and stiff in the left side of the face, and in the morning when going to shave, he observed the characteristic smoothness of the right facial aspect, when all control of motion at the same time had ceased. The right eye is constantly running, and cannot be closed. The saliva was

constantly pouring from the right corner of the mouth; the speech is much impaired; but the tongue only slightly drawn to the left; the uvula is not affected as to its direction or contractility. The conjunctivæ of both eyes were considerably injected, principally of the left eye, which was continually running; great sensitiveness to light, with a constant quivering sensation; that eye is very red and painful. Some days previous to the attack, he had pains in the right side of the chest, in drawing a deep breath, which pains moved to different parts, but disappeared when the face became paralysed. For some days the bowels have been costive, and the appetite indifferent; the tongue is very foul. The patient is very weak and thin; the complexion pale and sallow. The treatment began July 12th, and already by the 15th, slight movements were observable in the zygomatic muscles. The eye can nearly be closed, and the appearance in general is improved; the bowels act freely.

July 24th.—With the exception of a swelling on the upper lip, both sides of the face are equal; motion and contractility being quite restored, both in the orbicular muscle of the eye and the mimic muscles of the face. Appearance in general much improved.

August 10th.—Some tremulous motion of the facial muscles and of the eyelids, which remained as the last trace of the disease, had now disappeared. Thus in less than one month the paralytic affection of the facial nerve was entirely cured. I abstain from any remarks about the comparative value of the bio-mechanical means in this and similar cases. To my own knowledge this is the fifth case in which the Swedish gymnastics have proved successful in a rheumatic paralytic affection of the facial nerve, in a comparatively short time. On account of the feebleness of the constitution, and the limited development of the thoracic cavity, a general roborative treatment was continued for a short time afterwards. There has been no relapse since.

Contracted chest and pulmonary congestion.

Mr. A—, in the 17th year of his age, has been from early

childhood delicate, irritable, nervous, and fidgetty: subject to catarrh in winter and spring, especially since 1850.

Had some years ago an attack of pleurisy, with subsequent effusion. He was taken to Malvern, and derived great benefit from the water-treatment. He subsequently had whooping-cough, and was taken abroad.

He commenced the treatment by exercises on the 18th of October, 1853. He had then a severe cold in the head, with running of tears from his eyes; his circulation was very languid, and his hands and feet were very cold. He suffered from heartburn. There was dullness on percussion of the upper part of the left lung, which was not permeable to air. The right lung was sound; the heart, weak and atrophic, was easily affronted and set palpitating.

He had, from childhood, a left inguinal hernia, for which he wore a truss. The abdominal parietes were much relaxed, but there was no hernial protrusion.

He stooped much, and his muscular system was very feeble.

After five weeks of treatment his customary catarrh entirely ceased; his circulation and his general appearance were much improved. The abdominal walls had become much stronger, and he was advised to discontinue wearing the truss; and there has been no hernial protrusion to this time.

He continued the treatment till April, 1854, when he had grown an inch, had increased six pounds in weight, and two and a half inches round the chest. His health has continued good from that time, and he has been able to pursue his education with unabated vigour.

Paralysis.

Mr. E—, 32 years old, lived *fast* for many years, and has paid the penalty by having had to submit himself to violent medical treatment; thirteen years ago he was savagely mercurialised. From that time has been very sensitive to all changes in the weather. Eight years ago he had a paralytic seizure, in his sleep, and he woke with the loss of his left arm and leg. For some time before he had suffered from

violent headaches, which came on in severe paroxysms, and were mitigated by pressure with the hand.

He commenced my treatment in January, 1855. He had then partial paralysis of both the lower extremities; he could walk with the aid of a stick, but his feet dragged, and were both turned inward as he walked. He often fell, as he could not avoid the smallest impediment in his path, being unable to lift the feet from the ground.

In attempting to stand the body was bent forward; the knees failed almost immediately; in sitting he had to be propt up, otherwise he would fall either forward or to the left.

The left side much weaker than the right. He had no controul over the left foot; and suffered from violent and involuntary spasms and twitchings of the left leg.

The abdominal muscles were paralysed, and he had no controul over the sphincters of the bladder and rectum. The abdomen was large and flabby.

Appetite and sleep were good. Strabismus, with iritis and conjunctivitis of right eye.

On the 17th of February, after about a month's treatment, he could keep himself much more erect; he could stand upright, and keep his legs and back perfectly straight. He could then rise from his seat without the spasmodic twitches of the left side, which had previously distressed him. He could in some measure turn the left foot outwards. The condition of the right eye was much improved.

He was under medical treatment at the same time he was under mine; after awhile he could walk about the streets of London for hours. But he discontinued the treatment by exercises, not cured, though much relieved, for there was still some dragging of the left leg and foot. I believe he might have been permanently and completely cured.

Cerebral congestion, chorea, and mental derangement.

Miss W—, æt. 26, was healthy till last year. Two years ago, after the death of her parents, she exchanged a country life for that of London, being obliged to maintain herself.

In August, 1855, she became very restless at night, and altered in her manners and temper. She would sing idly, and turn every thing that came in her way topsy-turvy. Involuntary movements of the right arm and hand then occurred, and at last complete chorea.

This train of symptoms was referred to a sudden fright, during the catamenial period, which was suppressed.

She became worse and worse, and was sent to St. Thomas's Hospital. There she became very violent, and was subjected to the restraint of a straight jacket. She was blistered, cupped, leeched, and so forth. After six weeks she was dismissed from the hospital as a fit inmate for a lunatic asylum.

I was consulted about her case in November, 1855. It was then necessary she should be closely watched night and day, as she shewed a strong disposition to make away with herself. She was calm when I saw her, but moody. On being asked if she was in pain, she said that the forehead and top of the head were generally very painful. The whole head was hot to the touch, and her face was much flushed; while the lower extremities, from knees to toes, were of an icy coldness. She complained also of sleeplessness. Her hands, especially the right, were in constant motion; but she had perfect controul over the left arm.

The nervo-muscular power in general, but especially that of the hands, was much below par. She could only raise the dynamometer to 10. At times she was much excited, talked incoherently, and whenever she had an opportunity would turn up-side down every thing that came in her way. The period had not been re-established since the commencement of her illness.

After a fortnight of my treatment her nights were calmer; she was less flushed, and more natural in her manner and conduct; so much so, that she could be allowed to be with other patients. The improvement in her health steadily advanced till the 22nd of March, 1856, when she was entirely cured.

The catamenial period was fully re-established; she was two inches wider round the chest; and she could raise the

dynamometer to 25. She is at present with a family in the country, quite well, and quite willing as well as able to perform the duties she has undertaken.

Chronic rheumatism.

Mr. B.——, though only 21 years old, had had two severe attacks of rheumatic fever, of which the last occurred two months ago. Besides the usual symptoms of pain, stiffness and swelling, there had been much effusion in the joints. As a child he was very delicate, having grown very fast, and as his lungs were thought to be affected after an attack of severe pleurisy, he was sent to Madeira three years ago. He consulted me in January, 1856; he felt still very weak after his last attack, principally in the legs and arms, and though all swelling had subsided, still a fixed pain remains in the supra-scapular fossa, most on the right side, as well as at the insertion of the deltoid muscles on the same side. The wrist was also stiff, and pained him much when any attempt to move it was made. Bowels want occasional assistance, and when he attempts to run he feels a kind of "hot and sharp pain" in the middle of the chest, and gets directly out of breath. The stethoscopic examination does not, however, detect any abnormity of the heart, which only is weak. All secretions normal. The patient is of very slender make, stooping, and narrow-chested. On the second examination, three weeks from the beginning of the treatment, general improvement had commenced, and though the right shoulder and arm were still stiff, he felt an unusual vigour throughout the whole frame. Three months' treatment had entirely eradicated every trace of the rheumatism, and his musculo-nervous force was multiplied, along with which improvement his thorax had increased 1½ in. in circumference.

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