

**A memoir on mutual instruction applied to the study of the elementary principles of medicine / translated from the French of J. P. Beullac, M.D. ; with an appendix, containing a report made to the Medical Society of Emulation in Paris, on the subject of M. Beullac's Memoir; an epitome of the improved Pestalozzian System of education; - and observations from other sources, on the advantages of the system of mutual instruction.**

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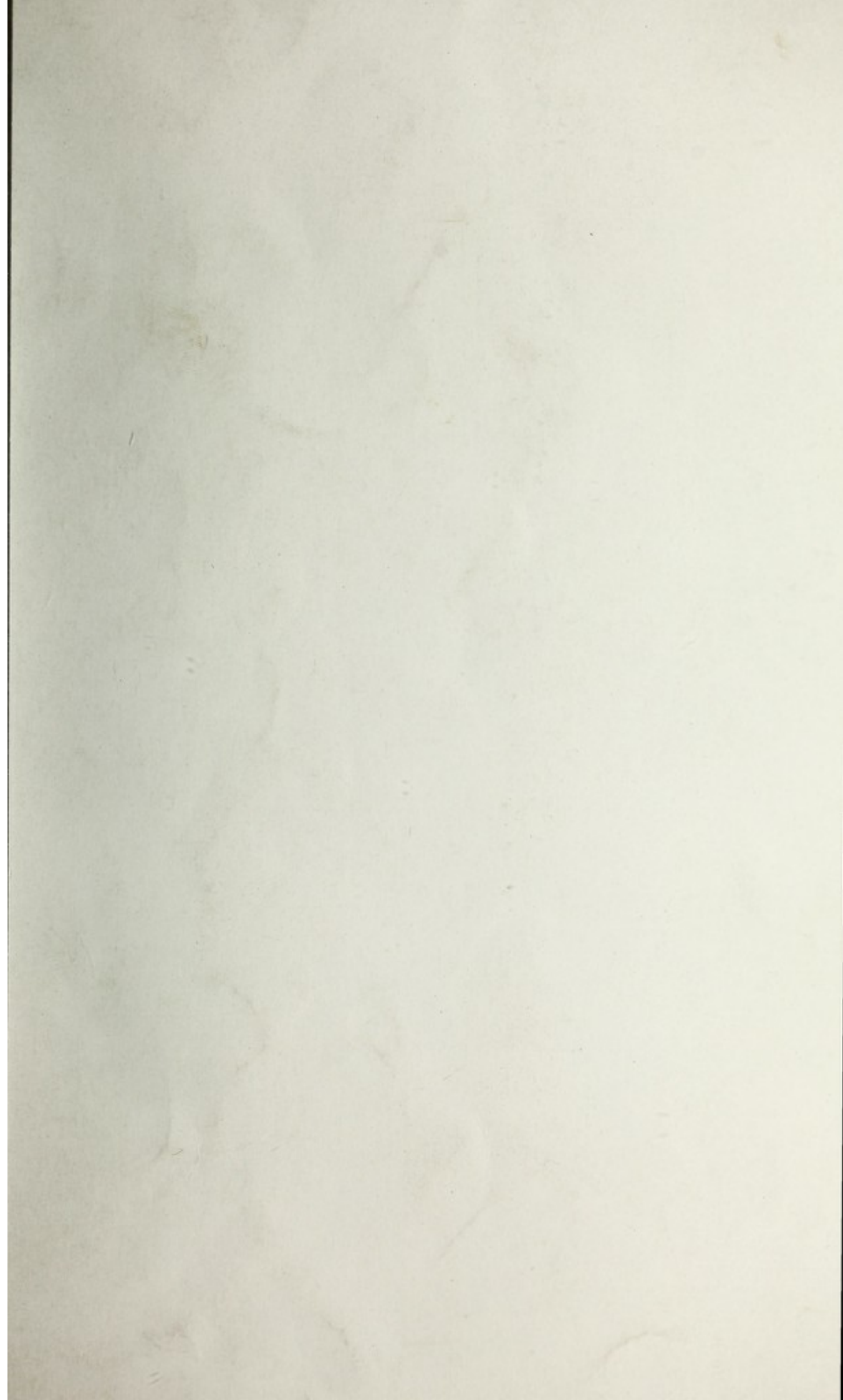
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A MEMOIR  
ON  
MUTUAL INSTRUCTION  
APPLIED  
TO THE STUDY OF  
*The Elementary Principles of Medicine.*

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TRANSLATED FROM THE FRENCH OF

J. P. BEULLAC, M.D.

OF THE FACULTY OF MEDICINE OF PARIS, ETC.

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WITH AN APPENDIX,

CONTAINING

*A Report made to the Medical Society of Emulation in Paris, on the Subject of M. Beullac's Memoir; An Epitome of the improved Pestalozzian System of Education; —and Observations from other Sources, on the Advantages of the System of Mutual Instruction.*

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LONDON:

BURGESS AND HILL, GREAT WINDMILL-STREET.

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1828.



MUTUAL INSTRUCTION  
APPLIED

TO THE STUDY OF  
THE ELEMENTARY PRINCIPLES OF MEDICINE

TRANSLATED FROM THE FRENCH OF  
A. P. LEBLANC, M.D.  
OF THE FACULTY OF MEDICINE OF PARIS, &c.  
WITH AN APPENDIX,  
CONTAINING

A Report made to the Medical Society of London in  
1841 on the subject of Mr. Leblanc's Manual, by  
James W. Drayton, Esq., M.D., F.R.S., &c.  
and Observations on the Manual, by the Editors.

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A MEMOIR  
ON  
MUTUAL INSTRUCTION  
APPLIED  
TO THE STUDY OF THE ELEMENTARY  
PRINCIPLES OF MEDICINE.

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THE value of Mutual Instruction is already decided : henceforth it would be superfluous to prove its excellence, and amuse ourselves by refuting its antagonists. The small number of people without energy and without genius, who wish to retrograde towards the times of ignorance, the partizans of old times, have, in this memorable strife of darkness against light, brought none but common-place arguments and declamation : we have laughed at their folly, when we believed them sincere. The nations and the governments which are convinced that instruction may be the most fruitful cause of the happiness of individuals and the prosperity of states, have hastened to favour a rising institution ; they have conferred upon its propagators distinctions and rewards, and we have seen Mutual Instruction extend with rapidity on the Continent, and carry its good effects as far as the New World. We know why some princes have banished it from their states ;—their vain pretexts have not been able to disguise



effectually the nature of their fears, and their weaknesses.

Grateful posterity already pays a tribute of praise to him who first taught nations this sure and easy manner of instructing themselves. Mutual Instruction, according to some, owes its origin to the Chevalier Paulet; according to others, to Lancaster. Chevalier Paulet lived under Louis XVI. He founded a numerous school, in which the scholars acted reciprocally as masters, instructed themselves under his eyes, and made rapid progress. He opened his school to those classes of society whose condition and poverty had till then kept them from elementary instruction, the first source of knowledge. Louis XVI. to encourage him, assigned him an annual pension of thirty-two thousand francs\* from his private purse. We should undoubtedly have seen Mutual Instruction arrive rapidly at its perfection, had not the French revolution intervened.

Our neighbours, who only took an indirect part in our political troubles, appreciated after us the advantages of this method. Lancaster appeared in London about twenty-five years ago. His school was at first but little known; but some persons of distinguished merit, having soon appreciated the ex-

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\* About one thousand three hundred and thirty-three pounds sterling.—[To those acquainted with the value of money in France, and with the scanty rewards beyond mere approbation bestowed on their men of Science, this statement must appear improbable.—Tr.]



cellence of his mode of instruction, conceived the design of extending it, and offered to defray the expenses of so useful an enterprise ; other estimable citizens joined them ; and this association becoming from day to day more numerous, forms at this time, under the special protection of the British Government, an illustrious and commendable Society, of which the benefits and reputation are widely extended. The king of England is its patron, the Dukes of Sussex and Gloucester presidents. In France it ranks amongst its patrons,—Princes, Ministers and persons of the most elevated dignity in the state.

The method of Mutual Instruction is so named, because it is founded on a reciprocity of instruction on the part of the scholars. It is a daily repetition of the things that we learn, and this repetition is purely an effort of the memory. By means of this method we are taught reading, writing, and arithmetic, with readiness and certainty. We have no doubt that in the sequel we may apply it to teaching the elements of all the sciences and all the arts. In France we already study music, drawing, &c. in this manner. I have endeavoured to apply Mutual Instruction to the study of the elementary principles of Medicine. I propose to myself in this memoir to examine on what bases I rely for the attainment of my object.

Medicine, unfortunately accessible to so many false systems, exposed to so many erroneous opi-



nions, seems to demand the most scrupulous exactness in the instruction of those who commence the study of it. Although the modern Faculties of Medicine, and particularly those of Paris, leave little to wish for, respecting their internal organization, it may nevertheless be said, that they are far from offering to the students all the advantages that may be desired. A few words will suffice to explain this assertion. Each branch of medicine is taught by an able Professor, who in general acquits himself with distinction of the task confided to his care. From the height of the professor's chair, which he has often dignified, he communicates to his auditors profound and luminous reflections; he develops the most secret folds of his science, and elevates himself to its sublimest truths;—like a superior genius, he gives illustrations that harmonize with the extent of his knowledge and the elevation of his talents: but it ought to be observed, his easy delivery and overpowering eloquence do not always produce their effects. Could the student, launched from the depth of a medical college, quitting the benches of philosophy to hear a lecture on general anatomy or physiology, at first derive any advantage from the lectures of the most celebrated professors? could he elevate himself to the height of their ideas, and follow them in their rapid course? I think not: a cold and incompetent auditor, he finds himself transplanted upon an unknown soil; he sees nearly every where strange



objects, but half intelligible to him; vague sounds strike his ears, *ennui* takes possession of his senses, and disgust defers to the next year the understanding of a course which serves as an introduction to all the others. Nevertheless time flies, and his loss is irreparable.

If the student who pursues the study of the medical sciences with the advantages of primary instruction, and the capacity that always supposes the knowledge of the art of speaking and thinking well,—If, I say, this student cannot conquer his distaste for the scarcely intelligible details of anatomy, at first sight dry and irksome, and of physiology, at first obscure and incomprehensible,—what will be the fate of an unfortunate young man, who, unable to aspire to the rank of doctor, goes out for the first time from his paternal roof, without any preceding disposition than an excessive desire to instruct himself? Doubtless his better resolutions will vanish:—what can they do against *ennui*, or rather against the absolute want of comprehension and aptitude for the work which is proposed to him? If all those who have been victims to this want of connection between their capacity and the object of their study, could make known the difficulties which have fettered them, I should want no other proofs of that which I advance. I have seen students follow confusedly all the courses of lectures, lose themselves with the multitude in a large amphitheatre, where the continual murmur prevents the voice of the



demonstrator being distinctly heard. On the other hand, even allowing that a constant and luminous order presides at the lectures, how can the memory be equal to retaining all these minute details? Thus, the professor has scarcely ceased to speak, ere there no longer remains a trace of a fugitive impression in the mind of the student.

The first elements of medicine become, with the aid of Mutual Education, a more easy study, in which we are instructed with infinitely more quickness than in the public courses. The student exercises himself, besides, in speaking before his fellow-students, his self-love is excited, and the weakest augments his progress in repeating the lessons of the laborious student.

Here, as elsewhere, success is not equivocal; and I can prove the truth of what I advance, by the verification of facts, by the experience of three years, and the example of a small number of pupils, whose indefatigable application has favoured my intentions, and realized my promises and my hopes. Scarcely known when I opened my elementary course of medical studies, I was obliged to limit myself to a small audience. Our zeal and our punctuality have never been relaxed; and we receive at this time a very flattering recompense for it, when we see our establishment open again a fourth year under the most favourable auspices: let us confide sufficiently in the excellence of our cause, and the wisdom of our intentions, for seeing the number and emula-



tion arising from these new ideas soon increase. Then let our celebrated Faculty deign to favour a rising institution, where the student is prepared to follow with success its excellent courses.

How and in what manner can mutual education be applied to the study of the elementary principles of Medicine?

The sciences in general offer to our mind two very distinct parts to be studied : the one reposes on the description of objects and facts, the other is only occupied with the phænomena which result from it ;—the first is an effort of memory, the second appertains to reasoning. Medicine presents this fundamental distinction in a very decided manner. Each branch of which it is composed has its material view, which is descriptive, and its systematic view. The student during his first years ought to confine himself to the study of descriptions, to enrich his memory with positive facts, and to exercise himself in manual anatomy. From thence going into the most elevated courses of the sciences, he will be able to comprehend, follow, and judge of them. Let us take for an example of what I advance, the examination of the different parts which constitute the whole of our art,—and we shall find wherewith to exercise the memory before the judgement.

In what does the study of Anatomy consist? In the distinction of systems and their apparatus; in the examination and complete description of organs, their exterior conformation, intimate struc-



ture and relations. What do we perceive in this part that does not appertain to the memory? This faculty of our understanding is the storehouse wherein is treasured up all the knowledge acquired by the senses. In anatomy we need only see and touch. Some object that Mutual Instruction is only addressed to the memory. This reproach sufficiently justifies its application to the first branch of medicine. Positive Physiology is unfortunately all anatomical. Thus judicious men have united, under the name of Zoonomy, these two sciences that we have wished to separate. Physiology embraces the mechanism of the functions consigned to each organ. The explanation of this mechanism becomes easy, as soon as the knowledge of the conformation of the organs, their structure, and connection, is acquired. To say that the stomach is the principal organ of digestion; that in which the aliments, carried into its interior, after having freed the isthmus of the throat, through the canal of the œsophagus, undergo a first change which reduces them to a homogeneous paste, of the nature of chyme; &c.:—to say that the lymphatic vessels suck up the chyle; that the thoracic duct pours it into the left subclavian vein; and that this fluid restorer mixed with the blood, carries through all the body principles homogeneous to the substance of each organ, principles of assimilation and of life;—this does not at all explain the phænomena of digestion and nutrition. This operation is of a nature quite



descriptive; and the memory can without trouble associate with its anatomical facts, a course easy to seize without the assistance of a great effort of the understanding.

How are diseases to be studied, if not by enriching the memory with descriptions? It is not by theories that one could recognise them; but in well following the example of the celebrated sage of Cos, who has transmitted to us histories recorded at the bedside of the patients. The names of diseases serve to make us understood; it is to facilitate our study of them, that they have been classed: but nature has never been subjected to this scholastic order. Diseases develop themselves indistinctly, and occupy this or that organ. Each of them is a very exact collection or relation of the different symptoms which characterize them in particular. By the assistance of general pathology, each descriptive table becomes more regular; the mind finds itself enlightened in this impenetrable chaos, by the aid of nomenclatures and classifications. Diseases written with order and method in our elementary works, are studied with more facility; and by means of the memory, the student soon makes himself master of the objects which strike his senses. What view more easy to seize than the assemblage of symptoms which denote gastric obstruction? Shall I cite an example of external disease? Here the phænomena almost always accompany the cause which gives rise to them:—a wound, a fracture, a luxation, &c. only happens



after the action of a cutting instrument, a blow strongly applied upon the fractured limb, or a fall made in an awkward position. This is a brief view of the reasons which authorize me to believe that the pupil may be accustomed to study a disease, as we study an organ, and the mechanism of the function that it performs. It is nevertheless understood that this by no means excludes the study at the bedside of the patient, nor the philosophic doubt employed by Descartes as supreme regulator. If our business at present is to pass in review the different means which compose the subject of Hygiène, to describe the different substances of which the *Materia Medica* treats,—we shall always find under our eyes some objects to describe, appreciable by their physical qualities. The practice of operations and accouchements demands rather an experienced hand, than an effort of intelligence; and this truth is too simple for us to doubt for an instant, of the facility with which we may study with success by the method of Mutual Instruction. After this short recital, I believe it may be conceived, how in studying them, the elements of medical science may be subjected to the rules of this new method. It remains for me to indicate the mode of proceeding.

The process is generally known; only each science in particular must be submitted to some modifications. This is the course which I have constantly followed with success in my elementary course of medical studies.



The first care is to construct the lesson. It ought to be prepared beforehand, and analysed after a formulary table, applicable to the study of an organ, of a function, of a disease, and to the manual of an operation. This analytical table ought to be varied according to the part on which it treats. The professor alone has the charge of constructing this lesson, and may allow himself some explanations when he judges them necessary. The monitor-general repeats the lecture which he has just heard, leaving out the explanations. The professor corrects him if he happens to commit any mistake. In his turn he becomes judge of the particular monitor placed at the head of each series.

The particular monitors are each at the head of the class which they represent. They repeat the lecture, and are, as I have just said, corrected by the general monitor.

The series form an equal distribution of the pupils, and are separated one from the other. Each of these last repeats a part of the lecture; they are corrected by the particular monitor of the series to which they appertain. In case the monitor-general should neglect to correct the monitors, and the monitors the scholars, the professor should remedy it immediately, without disturbing the order of the instructions. The scholars solve once a month, or oftener, a written and a verbal question, both drawn by lot; the answers are judged by themselves, under the direction of the professor.



## MEDICAL SOCIETY OF EMULATION.

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*Extract from the Report of Messrs. HIPP, CLOQUET,  
and BRICHETEAU.*

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You have charged us—M. Hipp. Cloquet and myself,—to give you an account of a Memoir that M. Beullac has read to you, on *Mutual Instruction applied to the Study of the Elementary Principles of Medicine*. The first part of this memoir offers a sort of historical praise of Mutual Instruction, which has at length come off conqueror in this strife with the partizans of darkness, who have made a holy league to protect ignorance. There is doubtless no one amongst you, Gentlemen, who does not know pretty nearly what is contained in this first portion: the author in producing it, has only the merit of being the historian of an important and useful discovery.

In the second part of his memoir, M. Beullac endeavours to demonstrate, that all the facts which form the basis of the sciences depend principally on the memory; that these facts, to be conveniently retained and again presented to the mind as often



as necessary, ought to be incessantly recalled; and that under this point of view there is no method more efficacious than that of Mutual Instruction. Whatever is material and descriptive does not in fact appear well fixed in the memory, until after having been forgotten and recalled a great number of times; and relative to anatomy, which is especially a descriptive science, the author might have leaned upon the opinion of the late M. Sabatier, who said that it must be forgotten six times before it could be well known.

M. Beullac afterwards passes in review the principal branches of which medicine is composed, in each of which he distinguishes a descriptive and material part, and a systematic part; the first alone appeared to him to be the province of Mutual Instruction, its study becoming fruitful by the daily repetitions inherent to this method of instruction.

The author thinks that this kind of mnemonic mechanism, to which the student is daily subjected, because he is daily interrogated by his monitors, affords the means of conquering idleness and of subjecting students to the yoke of an exact and permanent labour. He takes occasion to draw a picture, unhappily very true, of the difficulties and uncertainties into which a young student finds himself plunged, who wanders without guide in the numerous amphitheatres of the capital: he shows the danger of that incertitude which leads to incurable idleness, if he have not a decided desire to improve



himself, or plunges him into the confusion and disorder of numerous objects, which he studies with much ardour, but without effect.

The method of Mutual Instruction employed for the first periods of medical studies, seems to us, as to M. Beullac, to unite the advantage of continually recalling the young student to his studies, and circumscribing them within a certain number of objects, which do not go beyond his comprehension and actual attainments. This method will have the certain result of rendering more durable and familiar to his mind, the exact and complete descriptions which he will find necessary in the practice of his art.

In a word, the course of M. Beullac is simple and easy; it has already been useful to many students who commenced the vast studies of the medical sciences; they commonly make rapid progress in the study of the objects which occupy them, when they are docile and attentive to the instructions of the professor. We think that the students ought not to disdain this mode of elementary instruction, where the form, rather scholastic, is more than compensated by the readiness and facility of instruction which it offers.

The memoir of M. Beullac, containing a new application to the study of medicine, of a method become celebrated by the attacks of its enemies and by the active defence of its numerous partizans,—we propose to you, Gentlemen, to place this memoir



at the disposal of your Commission of Works, in the persuasion that the subscribers to your Bulletin will recognize a new proof of your zeal to communicate to them whatever may be useful, curious, and interesting in the progress and ameliorations of which Medical Education is susceptible.

HIPP. CLOQUET, and BRICHETEAU (Reporter).

Certified conformably to the report preserved in the archives of the Medical Society of Emulation.

Secretary-General,

L. R. VILLERME'.

Paris, 16th October, 1822.



## APPENDIX.

*An Epitome (from the American Journal of Science and Arts) of the Improved Pestalozzian System of Education, as practised by William Phiquepal and Madame Fretageot, formerly in Paris, and now in Philadelphia: communicated at the request of the Editor.* By WILLIAM MACLURE, Esq.

THE great and fundamental principle is,—never to attempt to teach children what they do not comprehend; and to teach them in the exact ratio of their understanding it, without omitting one link in the chain of ratiocination, proceeding always from the known to the unknown, from the most easy to the most difficult, practising the most extensive and accurate use of all the senses, exercising, improving, and perfecting all the mental and corporeal faculties by quickening combination, accelerating and carefully arranging comparison, judiciously and impartially making deduction; summing up the results free from prejudices, and cautiously avoiding the delusions of imagination, the constant source of ignorance and error.

The means of effectuating the above are, first, A careful examination and inspection of the objects themselves, or of tangible and visible instruments, calculated to demonstrate their properties and bring



them within the reach of the senses. If these cannot be obtained, then accurate designs or representations, and books and descriptions, although imperfect substitutes, are employed : but these are not to be resorted to, until every possible means of acquiring the first two has failed.

They learn mechanism by the machines or exact models of them ; arithmetic, by an instrument they call the arithmometer ; geometry, by an instrument called the trigonometer, and another called the mathemometer, by which the most useful propositions of Euclid are reduced to the comprehension of a child of five or six years old ; mathematics, by the help of the last-mentioned instruments ; and all the mathematical forms in substance, by solid figures. Natural history in all its branches is learned by examining the objects in substance, or accurate representations of them, in designs or prints ; anatomy, by skeletons, preparations, and wax figures ; geography, by globes and maps, most of the last of their own construction ; and *hygiène*, or the preservation of health, by their own experience, in attending to the consequences of all the natural functions. They are taught the elements of writing and designing, by the freedom of hand acquired by a constant practice in forming all kinds of figures, with a slate and pencil put into their hands, when they first enter the school, on which they draw right lines, dividing them into equal parts, thereby obtaining an accuracy of the eye, which, joined to the constant



exercise of judging of the distances of objects and their height, gives them a perfect idea of space, and practises them in a rapid and correct *coup d'œil*, so necessary in the useful arts and manufactures, and on which the accurate knowledge of the properties of every species of matter depends. They learn music by the distinct difference of sounds, through the medium of an organ constructed for the purpose, and a sonometer; and first, learn sounds before they are taught the signs of those sounds; gymnastics, or the exercise of all muscular motions, they acquire by the practice of all kinds of movements, always preferring those that may lead to utility, such as marching, climbing, the manual exercise, &c. &c. They are taught the greatest part of those branches at the same time, never fatiguing the mind with more than an hour's attention to the same thing, changing the study, and rendering it a play by variety. The pupils learn as many modern languages as there are languages spoken by the boys of different nations at school, each instructing the others in the vocabulary of his language, while he acquires the words corresponding in the language of those he converses with, until he has a complete vocabulary in his head, when he begins translating his own language into the foreign; and the master, when he corrects his translation, gives him the rules of grammar by which he is guided in the correction; by which means the pupil learns the practice and theory of grammar at the same time: and while



the rule is imprinted on his memory, he has a tolerable idea of the reason and utility of the rule confirmed by the example in his translation and supported by the explanation of the master, which avoids the dry, disagreeable and disgusting study of the theory of grammar, than which nothing can be more tiresome, irksome, and unpleasant to the learner, or more difficult for the schoolmaster to command attention to ; and often renders correction and punishment necessary, to force the pupils to choose the lesser evil.

Education ought to be the apprenticeship of life ; and children ought to be taught what imperious necessity may force them to practise when men, always preferring the useful to the ornamental ; preparing them to withstand the reverses of fortune, leaving the choice of their amusement and pastime, until their pecuniary independence shall permit them to make a choice of their pleasure.

To court pleasure and avoid pain, includes the greatest part of the motives of human actions ; to accomplish which, children ought to be taught to avoid remorse, fear, misery, and *ennui*. To prevent the first, act always honestly and uprightly ; do as you would wish to be done by : secondly, retain all your instinctive courage, and view every thing as it really exists : thirdly, allow a moderate indulgence of the natural appetites, and enjoin a total prohibition against acquiring any artificial tastes or



appetites ; observe frugality, and the strictest œconomy in the smallest expenditure, recollecting the old proverb, “ Take care of the pence, the pounds will take care of themselves :” fourthly, obtain a knowledge of the objects of nature and art, and an early habit of receiving pleasure from the examination of them.

Hume’s definition of man,—that he is a bundle of habits, is as true as laconic, and points out the advantages that instructors of youth might derive from that propensity, namely, that of acting from habit. By constantly and habitually associating pleasurable sensations with all the useful and necessary operations of life, we thus turn the common occupations, which the wants of men require, into amusements, and form the life of man into an agreeable pastime. If we examine how the trifling diversions of hunting, fishing, gaming, &c. &c. become pleasures, we shall find the cause to exist in habit, and frequent use, which might be more easily attached to some useful employment, the advantages of which would be permanent and lasting, and not finishing when the action was performed, or productive only of remorse and repentance, like nine-tenths of the fashionable amusements. Upon this great and powerful lever of the mind, which has as yet been employed only by crafty politicians, and by that portion of ecclesiastics who have abused religion for their selfish and antisocial purposes, vo-



lumes might be written to explain its beneficent connexion with all the ramifications of society ;—but this digression would take us too far from our present purpose.

Two of the best gifts of Nature to man are health and time ; and perhaps the total neglect and abuse of both may be the cause of most of his miseries and misfortunes, both moral and physical : to rectify which, as far as precept, example, and experience can do it, ought to be one of the principal objects of instruction. This is to be effected by adopting the most effectual means of preserving the one, and making the best possible use of the other, before it is too late ; for unfortunately the youth of all countries have squandered the greatest part of both before they have learned their value.

The immense advantage of the energy and exertion springing from free will, over the cramped and snail-paced progress produced by coercion and force, in the government of men, as well as of the animal creation, must be evident to the most superficial observer ; but in no case does the evil so materially injure and destroy the best and most valuable interests of society, as in the coercion and punishment of children during their education.

This is the source from which spring all the violent malignant passions of anger, revenge, hatred, &c. ; this is the destroyer and exterminator of all their amiable and benevolent sentiments : it is the corruptor of the heart ; it stupifies the head, and



suppresses all talent and genius ; breaks down the spirit of natural independence, and fits men for slaves, by exaggerating their propensity to crime, and annihilating all the fine feelings that lead to great and benevolent actions. All these fatal consequences are avoided, by the nature of the system not requiring any such barbarous means of execution, and rendering the substitution of reason in place of coercion, both easy and agreeable to master and pupil ; their natural curiosity is encouraged and excited when the gratification of it is a pleasure both to the instructor and learner. Never being forced to do any thing they do not like, all their actions are bottomed on free will, and united with agreeable sensations. Their most complicated studies are but an amusement, which increases with the difficulties they encounter ; and this concatenation of pleasurable ideas with moral study never ceases, and is the cause of their being at school during their whole lives ; and the progress of their knowledge and improvement finishes only in the grave.

The boys learn at least one mechanical art ; for instance, to set types and print ; and for this purpose there is a printing press in each school, by the aid of which are published all their elementary books, all of which are constructed upon the contrary principles from those of the old school ; viz. taking the most direct and easiest road to arrive at the end proposed, in place of the circuitous meta-



physical method adopted by the old system, as if teachers were afraid of giving knowledge too cheap. By setting types they practise accurate spelling, and become familiar with the construction of all the languages which they print, and they can earn their bread in case of necessity. It is also a great source of economy to the school, and answers all the purposes of a recreation from more difficult studies.

The immense advantages of the system are more evident when applied to the great bulk of mankind; namely, the productive, labouring, and useful classes. Those who from conquest, force, fraud, or the industry of their ancestors, are left with a sufficient revenue to live without labour, may remain in a state of ignorance. Perhaps this may be the fact without injuring materially the state of civilization in the mass of society, as the ignorance of the class spoken of facilitates and accelerates the division of property, a state of things so necessary to general happiness, and to the elevation of mankind to the highest condition of moral and physical perfection. The pupils are capable of obtaining an accuracy of sight, which they acquire by a constant practice of measuring distance and dimensions, which gives them when they leave the school, an experience equal to the acquirements of many years instruction of an artizan, as they can at a glance, decide whether a horse-shoe, a nail, a board, or any other piece of iron, wood, &c. will answer the purpose for which it is intended, without the trouble of trying.



They learn natural philosophy by the most improved and simple instruments ; chemistry by the latest and most accurate experiments, never departing from the golden rule of proceeding from the most simple to the more compound, from the easiest to the more difficult, from the known to the unknown, and preferring the useful to the ornamental, making at the same time the application of all to the necessary arts and occupations, that their utility may not be lost sight of for a moment.

One of the advantages attached to the system is the facility of forming professors. The popish attribute of infallibility being exploded, the master loses none of his influence with his pupils by acknowledging that he is ignorant of the subject in question, but will learn it along with them, according to system, in accomplishing which, he has only to keep one lesson before the class ; and the boys have a better chance to learn that particular science or art well, than if the master had been an old professor ; for by learning it himself so recently, he is instructed in all the difficult places, and is more capable of teaching the children how to get over them ; an advantage which the Lancasterian or monitorial system has over the old method.

Lithography being the best, cheapest, and easiest mode of making accurate representations of every thing, and this system requiring so great a number of exact representations,—as they are in all possible cases substituted for books or descriptions,—the



pupils are all taught how to design on the stone or cartoons, and how to make the proper ink and pencils, as well as all the manipulation of printing and working the press, &c. &c.

The advantages of calculating in the common way of reckoning by cyphers is the smallest part of the great and beneficial mental improvement gained by the calculation on memory, without the aid of any artificial figures; as it exercises, improves and accelerates the combinations, and renders comparison easy and accurate; while it accustoms the young mind to rapid deductions, facilitates the drawing of just and accurate consequences, and lays the foundation for a quick, impartial and logical judgment, in deciding on all questions of intricacy and difficulty, by furnishing to the mind the necessary elements to unravel the most complicated subjects.

The public are now generally informed that the Pestalozzian system of education has been introduced into this country by the public spirit and liberality of Mr. Maclure.

The following facts in relation to the actual state of the schools at Philadelphia were communicated by him in answer to the inquiries of the Editor.

*Extract of a Letter dated Philadelphia, Aug. 19, 1825.*

Madame Fretageot's school has been established here four years next October, has thirty-two pupils, as many as she can take, and several are waiting



for vacancies; she has already completed the education of some, whose parents thought them sufficiently instructed in all necessary and useful information.

Mr. Phiquepal began his school a few months ago, has eighteen pupils, and will very soon have as many as he wishes to take. As the method requires more constant attention on the part of the instructor than that of the old schools, particularly at first; as the greatest part of the scholars have been treated differently by previous education, and have got habits that must be changed before they can be effectually benefited by the system;—it would be necessary, to reap the full advantage of the method, that the children should be sent before they were at any school, except being taught by the mother, who would be aided much by a small book published by Pestalozzi, called *The Mother's Manual*. I have always thought that children cannot be put too soon to school, and the present practice commencing in many countries of Europe seems to sanction it.

I have seen nothing printed about the system except Neef's Sketch, which is all sold, and scarcely a copy is to be obtained in this country, although eighteen volumes have been printed at Stuttgard, in Germany, on the Pestalozzian method, which sold so well, that the printer gave Pestalozzi 60,000 francs for his share of the profits. The above epitome is too short; but I like short books



with only the outlines; they afford room for reflection, to fill up the vacuum, and stimulate thought, which fixes the subject more firmly in the memory, besides flattering self-love, (one of the strongest passions,) by authorizing the reader to consider himself as author of all he reads or finds out by his own reflections. The fault I find with a great many books, is that mania of making things too plain, leaving nothing to cogitation, and treating too contemptuously the intellectual faculties of the reader.

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*Dr. Spurzheim's Opinions of the Advantages of the Method of Mutual Instruction\*.*

Speaking of the method of Mutual Instruction, Dr. Spurzheim observes :

“It is inconceivable how its advantages can be contested. I rather excuse those who contend for the beneficial effects of ignorance, or those who

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\* A View of the Elementary Principles of Education, founded on the Study of the Nature of Man.—By J. G. Spurzheim, M.D. &c. &c. Edinburgh, 1821.

The work from which these extracts are made, is well deserving the attention both of teachers and students.



object, that it is a means of teaching in too short a time,—than those who acknowledge the benefit of general information, and yet hesitate to employ this method. Its superiority is too evident to be long impeded by its novelty.

“It is my decided opinion, that this method ought to be used in all branches of knowledge which may be acquired by the influence of teachers, or which may be taught. Even those who are destined to improve arts and sciences will gain by it. The reason of this is very simple, and founded on the influence of exercise; while at the same time this method has the additional recommendation of being the least expensive mode of instruction.

“Let us examine any branch of education whatever, and we shall find that the advantages of this method are always the same. We may take a mathematical problem for the sake of example. Suppose the rules to have been taught, and they are to be applied. Those scholars who possess mathematical talents in a high degree, will soon finish their problem, and will be obliged to wait in irksome idleness till many others, who cannot follow so quickly, have done. If the former, only, are called for by the master to resolve the problem, the others hear it, but it is not attended with the same advantage to them as if they were called to work for themselves. If, on the contrary, the scholars with little mechanical genius, be chiefly examined, those who excel in that talent will lose their time, and



neglect what they know; while their attention would be excited if they were employed in teaching their condisciples. It is the same with spelling, writing, drawing, dancing, learning history, geography, languages,—in short, with every branch of knowledge that is taught.

“The practice of the common method can be excused only by the supposition that all pupils are endowed with the same degree of abilities. As, however, daily experience shows the contrary, it ought no longer to be tolerated, if the object be to take the greatest possible advantage of the period of education. The new method is particularly useful in schools where all classes of children are collected together in the same room, and where, in the common method of teaching, while one class is examined the others are doing nothing. Children are in general required to learn by themselves, but few only are capable of this exertion. According to the new method, all classes go on at the same time, and the same subject is repeated till every child knows it.

“In colleges, where each class is separated, the necessity of the new method is less felt; yet, the above-mentioned reasons induce me to think, that it should be employed in all large classes, where the pupils, on account of their different degrees of capacities, naturally form themselves into several subdivisions.

“The superiority of the new method ought to de-



termine the directors of instruction to make a new classification in colleges, according to the subjects to be taught. There should be one professor for each branch.

“ The professor of each might put all the classes of his branch into action at the same time, in the same manner as is done in the schools for children : Monitors might take his place in the inferior classes. In this way, the pupils would make more progress than they commonly do. It is not necessary to state how many professors might be instituted, for there might be as many branches as are found to be requisite. The principal object I here contend for is, that the better students should instruct the inferior ones, when the masters are not sufficient for the purpose. Emulation would induce the monitors to employ their leisure moments in learning new subjects. Moreover, the time which the masters give to explanation is short ; that employed by the scholars in learning, occupying a greater portion. This portion of time will be filled up to more advantage by the method of Mutual Instruction, than if every one is left to himself alone ; and those who instruct others will in this way derive even the greatest advantage. This method, being new, will meet with adversaries ; but whoever will set an example of using it in the higher branches of knowledge, will find its superiority the same as it is already ascertained to be in teaching the first elements of education. The fundamental principle implied



in the method of Mutual Instruction, is one and the same for whatever is taught to many pupils at once. At colleges, those who are very zealous form private classes for repetition among themselves, and others who have means, pay repeaters. The advantage of repetition, then, being evident, it ought to be more generally practised than it is in public instruction. The oftener the pupils are examined, the more they will learn. The usefulness of frequent examination and repetition is explained by the laws of exercise."

Dr. S. further states that the mistakes committed in Professional education are very great. It is a lamentable truth that few persons stand in the situation for which Nature more particularly fitted them.

"If every one were employed according to his natural gifts, a double advantage would result : arts and sciences would be cultivated with more success, and many persons would be better pleased with their station in life.

"The second error of professional education is, that we are plagued with a great deal of useless knowledge, while the most important objects are overlooked.

"The third error of professional as well as of general education, consists in the method of teaching. It is high time to change a proceeding founded on the erroneous idea that words excite or convey notions. Children learn languages without ideas,



and natural history by mere descriptions: and those who teach them in this manner, if they think at all about the matter, must proceed on the belief that every word communicated necessarily excites, in the mind of the pupil, the idea which they mean it to convey. This, however, is an extravagant error; for words can excite only ideas already acquired; and if no previous ideas have been formed, they are mere unmeaning sounds. In the same way, in the study of medicine, we are frequently told a great deal about various diseases; of external appearances, of different conditions of the pulse, of skin, &c., before we see such things in nature. The result is, that the time and labour we spend in acquiring such theoretical knowledge are, in a great measure, lost. Let us first see Nature, and then hear her descriptions. A medical student who has never seen a patient, but studied the theory of diseases, will be as little acquainted with them as with minerals of which he has only read the descriptions.

“Thus, in the study of Medicine, it is not only wrong to compel the students, as is the case at certain Universities, to learn the auxiliary sciences in detail, such as Mineralogy, Botany, Zoology and Chemistry, since a perfect and practical knowledge of each of these branches would require several years; but it is also a great error to begin with theoretical lectures.

“Moreover, the individual branches of education



are too much separated. The instruction begins commonly with anatomy, without the pupil being taught to think of the use of any particular part. At certain Universities, they spend the greater part of the time in studying Osteology and Myology (the knowledge of the bones and muscles); they must learn the name of each bony ridge and edge; but may hurry over, and be satisfied, if they please, with very superficial notions of the viscera and nerves, which certainly are more important to medical men than those of the bones. Operative surgeons alone stand in need of a very exact knowledge of the bones and blood-vessels.

“Physiology and Anatomy ought never to be separated from each other: we learn the structure with more ease and pleasure when at the same time we are taught its uses. In the same way we ought to begin with the more necessary functions, and go on to those of less importance. When well acquainted with Anatomy and Physiology, medical students ought to see patients and the different morbid symptoms; they should learn to distinguish diseases, to become attentive to modifications according to age, temperament, climate, season, and manner of living, and to learn the mode of treatment in a practical way:—then the pupils will feel an interest in studying the *Materia Medica*, or the substances used out of the three kingdoms of Nature, and also the chemical preparations and doses.

It is very obvious that all professional education



is defective; and that it will not be well regulated before human nature is better understood, and the primitive faculties of the mind, and the conditions of their manifestations, more perfectly known. We shall then no longer be obliged to learn merely for the school, or, as we commonly say, for the examinations. We shall then acquire only practical knowledge, and no one will find it necessary to begin his own plan of useful learning when he has finished his studies at the University. Indeed, nothing can be more tedious for students, than to attend *ex-officio* lectures of mere theoretical schoolmen.

“Here we might with propriety consider the qualifications of teachers, which are certainly of great importance. But it is not my intention to speak of them at present. Pupils are well aware that great abuses are committed in this respect; that it is not always the most worthy who fills the chair. I merely notice, that there is a difference between the possessing of knowledge and the capacity of communicating it to others; and that some persons of more knowledge are sometimes less skilful in teaching, than others of less information,—in the same way as the best students of theoretical knowledge have not always the best practical skill.”

THE END.







