Opinions and new discoveries in agriculture, medicine, &c.; &c.; &c.; / by Charles Whitlaw.

Contributors

Whitlaw, Charles.
Curtis, Alva, 1797-1881.
Royal College of Surgeons of England

Publication/Creation

London : Printed for the author, 1847.

Persistent URL

https://wellcomecollection.org/works/yvu2u7y2

Provider

Royal College of Surgeons

License and attribution

This material has been provided by This material has been provided by The Royal College of Surgeons of England. The original may be consulted at The Royal College of Surgeons of England. where the originals may be consulted. This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.

wellcome collection

Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
https://wellcomecollection.org

[6.]

OPINIONS

AND

NEW DISCOVERIES

IN

AGRICULTURE, MEDICINE,

&c. &c. &c.

BY

MR. CHARLES WHITLAW.

LONDON:

PRINTED FOR THE AUTHOR,

30, ARGYLL STREET, REGENT STREET.

1847.

TO THE

VICE-PRESIDENTS, THE COMMITTEE,

AND THE SUBSCRIBERS TO THE

ASYLUM

For the Cure of Scrofula and Glandular Diseases for the Benefit of the Poor,

UPON THE MEDICAL PRINCIPLES AND UNDER THE SUPERINTENDENCE OF

CHARLES WHITLAW,

AND

TO HIS ESTEEMED DISCIPLES AND SUPPORTERS,

IN THE VARIOUS QUARTERS OF THE GLOBE,

THIS PUBLICATION

IS MOST RESPECTFULLY DEDICATED

By the Author.

PREFACE.

In his youth, the author of the following Treatise, studied Botany under one of the pupils of Linnæus, as well as the system of Horticulture and Agriculture, which was first pointed out by Sir John Sinclair, Arthur Young, Dr. Anderson, and Mr. Raney.

Dr. Anderson, whose Lectures he attended, made the most valuable experiments in the above sciences, and his Lectures on Rural Economy are full of practical knowledge, and ought to be in the hands of every agriculturist. The Author went to New York, in 1793, having his mind *well stored* with practical knowledge in the above sciences, particularly as applicable to the purposes of life, namely, food and medicine. It required but little experience to know, that a sound system of Agriculture and Horticulture was absolutely necessary to insure health of body and peace of mind, and that a bad system, not only induces premature disease and the death of a nation, but is the fruitful source of all their misery; and we require no better evidence than the actual state in which the great mass of the people are placed at this time in Great Britain and Ireland; and which is so well described by *Moses* in the twenty-eighth chapter of Deuteronomy.

The blessings and the curses are there pointed out, and we may compare them with what we *have been*, and what we are at the *present time*. Malthus and his insane followers are afraid that the people will multiply to such an extent, that the supply of

food will be inadequate to their wants; and certainly if the same policy is pursued in the management of our land, their prophecy is likely to be *too true;* for great as the destruction of the stock is, it bears no comparison with the mortality produced by it among the people, which even now is sapping the very vitals of the nation, and jeopardizing the stability of the throne.

Take the advice of one who has spent the whole of his life, in endeavouring to ameliorate the condition of men, and have courage! Everything is in our power, and let us turn to the wisdom of former ages, and observe what caused their prosperity, that we may avoid the policy which produced their overthrow.

Look at the experiments made by Sir John Sinclair and Lord Lauderdale, in the subsequent pages, and see the necessity of adopting the system recommended by them, which, if put into operation in the three kingdoms, the Malthusians will have no cause of apprehension, as we shall be in no want of better food. Take courage my countrymen, and let us put our shoulders to the wheel, and make use of the remedies which are so liberally scattered over this kingdom,—in greater abundance than are to be found in any other portion of the globe. We may triple the amount of our produce in seven years, and make this country the granary or store-house of the world; and say to the Malthusians, that the means adopted by them to keep down a surplus population, has had quite an opposite effect; which they might have known had they read their Bibles, and considered the decrees of Pharoah in his oppression of the Jews, which, instead of diminishing, only tended to increase their numbers. Let them look at Spitalfields, and all our manufacturing towns, as well as to Ireland, where bad food, poverty, and dirt, has tripled the increase of our progeny. Feed the people well, and they will never propagate too much.

Let us look at the Dutch policy, the wisest ever adopted by any nation in Europe, for producing health of body and peace of mind. They passed a law (and would that our legislators

would follow their example), that every student of divinity should attend a two years' course of natural history, and give satisfactory evidence that he understood it. God first as a God of Creation; secondly as a God of Providence; and thirdly as a God of redeeming love. If the student did not understand him in that threefold character, both in theory and practice, he was not allowed to preach. Had our bishops and ministers, of every denomination, been compelled to learn such studies in their youth, this nation would never have been brought to the verge of destruction.

It is a great and awful truth, that those who attempt to guide the public mind, ignorant of natural history, do not in reality understand the great truths contained in the sacred records, hence the various sects that are daily springing up, misleading the people, as our Lord observes:—"The leaders of this people causeth them to err, and they that are led of them are destroyed." There is the evidence of Scripture, to guard us against the rock on which all nations have split and been overthrown.

Let us at once retrace our steps, and as the general election is about taking place, require every member to pledge himself to use his utmost influence to see that the soil is properly cultivated, so as to produce sound provisions for man and beast; and those, who will not consent to do so, to reject them.

It should also to be the imperative duty of the corporation of every city and town throughout the kingdom, to condemn all animals that are diseased, and have them sent to the gas works for lighting the public streets; and also to appoint inspectors to examine the milk before it is allowed to pass into the cities for the use of the inhabitants, and that no dairies be allowed to be kept in either city or town. In Holland there is no such thing, and all the milk has to pass the ordeal of the inspectors; if it was over diluted with water, it was sent to the poor house, and if it was produced from diseased animals or poisonous plants, it was emptied into the common sewer.

The author asked the inspector why he did not give it to the hogs, "because it would poison them," was the reply. And when asked what disease he supposed would arise from the bad qualities of the milk, he said, "bilious and putrid fevers, and overflowing of the gall, like the cattle that died with what is called 'the gall sickness,' scrofula, in its most malignant form, consumption, flour albus, and all manner of nervous complaints."

When mercury was given to people who used such food, it caused insanity, and diseased the bones to such an extent that nearly half the people in Holland were made cripples for life. The courts of justice were prosecuting the doctors and apothecaries for giving mercury; when, therefore, we see the awful extent of misery produced on the inhabitants of Holland, before such salutary laws were enacted, I trust the electors of Britain will send such members to Parliament, as will use their utmost endeavours to procure for them sound provisions, which will ensure them health of body and peace of mind.

On reviewing the following pages, the author was requested by a scientific friend to give a full description of the formation of the hard pan, and the evils produced by letting the land lie in that condition under the cultivated soil in the three kingdoms. In all new countries no such thing as a hard pan exists. The land is covered with forests, and the roots sink deep into the earth, and the rain is gradually drawn up to supply the trees with moisture, or runs off by land springs and rivers, but when the hard pan is first formed, the pasture land is covered by the dung from the farm yard. It is disgusting to the animals to eat their own dung, and the dung and urine of the numerous animals, and of the insects they trample to death, the oil of which sinks down from four to six inches in depth, and forms a hard substance, with sand, gravel, or clay, perfectly impervious to the action of rain, like patent plaster, and will hold water like a dish, and when the water is evaporated, loaded with the eggs of all manner of poisonous insects, particularly spiders as they spin their webs in the air and devour each other and the insects

caught in the meshes of their webs. They are borne down to the earth by the pressure of the atmosphere at night, so that the earth is entirely covered with their webs in the morning, they are again drawn up by the heat of the sun and power of attraction, and form vast magazines of clouds, obscuring the rays of the sun, and loaded with all manner of poisonous insects; as all insects that are produced from dung and putrid earth are highly destructive to the health and lives of animals and man. It may be well remembered that in 1829, 1830, and 1831, the grain was diseased all over the three kingdoms with blasting, smut, rust, mildew, and fungus; and the inhabitants became diseased to a fearful extent. Friend Jabez Gibson came with his sister from Saffron Walden, to see if I could cure them of indigestion, in the winter of 1830, I showed him, with the help of a magnifying microscope, the vast quantities of insects falling on the earth driven by the east wind, he became alarmed and said our food would be all destroyed or poisoned by the insects. And he further remarked, that if any one could point out the cause and remedy, he would be a great benefactor to the kingdom, as they had lost millions of money by the destruction made by the insects on the fruit and grain, as also by disease and death among the inhabitants and stock. I told him to take two bushels of lime, two of coal ashes, two of salt, one of saltpetre, grind them in his drug mill, and set a man with a sheet and sow it all over the grain when six inches high; he did so on every other ridge over twenty acres of wheat, the ridges sown looked beautiful, strong and green, the others yellow, which attracted the attention of travellers, when cut the latter ridges yielded $5\frac{3}{4}$ bushels per acre more than the mildewed ridges, and was ten pounds per bushel heavier, and made the best of bread; the grass and grain over the kingdom might have been saved by the same process.

In March 1832, the heavy thunder and lightning destroyed all the insects over the kingdom, and we had the finest crops. The Author used all his endeavours to get the government to lay up in store 150,000,000 bushels, kiln dryed, under lock

and key, which could have been done from 1832 to 1836; he advised them to pursue the routine cropping and soiling system, and preserve ten million stone of beef in tin cases, had his advice been taken the Queen would have been enabled to feed her starving subjects and hungry neighbours, by opening her stores at Christmas 1846, and saved thirty millions sterling.

To conclude, they will never see a sound animal fed on permanent pasture, until the bailiffs and land stewards are compelled by parliament to plough up the hard pan and rectify the soil as herein stated.

MR. WHITLAW'S

OPINIONS AND NEW DISCOVERIES

IN

AGRICULTURE, &c.

As the Corn Laws are to be abolished, it now becomes the duty of the landlords, particularly of the County of East Lothian, where the rents are so high, to adopt the system of receiving their rent in corn, which is the best method both for landlord and tenant; if corn is cheap, the landlord as well as the tenant will effect a great saving in keeping up their establishments. It is now the duty of the landlords to give the tenants all the chance they can of keeping up the corn rent, as they will have to raise one-third more than formerly to enable them to stand their ground, which they can do by attending to the following advice respecting the raising of corn.

By adopting the routine cropping and soiling system, they can easily double the amount of their gains. When Mr. Harley, of Glasgow, was establishing his dairy system, I persuaded him to try the soiling mode on a portion of the land laid down for grazing cows; he raised more on one acre by soiling, than he could by pasturing on five; he saved all the urine for soiling and watering the field when cut, which afforded sixteen cuttings in three years, full grown; he made five pounds a year for the urine of each cow by soiling and selling it to the farmers and gardeners; besides so much increasing the bulk of his produce. The urine should be mixed with salt, lime, coal ashes, and nitre, and used immediately; it will then destroy all insects, and neutralize any bad property that may be in the dung or urine. As the carbon is rapidly extracted from the soil by strong cropping all over Great Britain, the whole of the coal ashes from steamers and factories should be saved throughout the kingdom; as when ground with salt, lime, and nitre, and applied to the dung heap, they will restore the soil to its original fertile state. Steam vessels trading to the Continent by saving their coal ashes get a shilling per bushel for them. When the carbon, hydrogen, and nitrogen are extracted from the soil, oxygen is sure to be in excess, and insectile life increases; this was the case to a fearful extent last summer; the air was so loaded with insects that the rays of the sun were partially obscured, until lightning destroyed them.

But restore the carbon, nitrogen, and hydrogen in due proportions to the soil, and insects will hardly exist. The first thing the farmer

should do, is to get a large yard for soiling, have it well paved, embedded in clay to hold the urine, with gutters round, about eight feet from the feeding stall and barns; the yard should be two feet lower at the entrance, and have two large tanks to hold about three hundred hogsheads each. A house should be built over the tanks to hold carts and farm utensils, the entrance to be between the tanks. The sheds and feeding houses should be well paved, with small gutters to let the urine run into the mains leading to the tanks; there should be three or four carts for watering the grass and grain fields, made with broad wheels, so as not to gutter the soil. The gutters should be eight feet from the front of the sheds, to allow a cart to go round the dung heap to lay on what earth and compost may be obtained from time to time, to mix with the dung; the above composition should be spread over the dung heap two or three times during the winter, that it may mix with the urine that runs to the tanks.

It would be as well to have gutters to all the sheds and barns, to carry off the rain water, so as not to dilute the water in the tanks, it should run into a pond for the ducks and geese to swim in; there should be a rain water tank to water the stock from, and for domestic purposes, as pure or filtered rain water is the best for family use. When watering the grass or grain fields, there ought to be a brush at the bottom of the cask to keep the sediment from remaining at the bottom, the driver, with the help of a cord, could keep it in a state of agitation. All the sheds, barns, and granaries, should be roomy, well ventilated, and fire proof, which would save insurance by lessening the risk.

The next thing to be considered is feeding of the stock; the boiler of the thrashing mill may be used for steaming and chaffring the straw for the milch cows and young stock in the yard during winter; as wheat, barley, oat, and rye straw are too hard for the digestion of stock, but when well steamed and a little bran or barley meal and a few handfuls of salt, and given night and morning, the farmer could raise three times the number of stock, they would be much larger, and in finer condition in spring, and double the size in two years, and the beef of a much superior quality to those that are starved in the ordinary way of feeding on hard straw. A large portion of the yard ought to be for feeding sheep when the lambing time comes on, which should be early; when the ewes are well sheltered, the lambs are much larger, and being well fed during the winter, would fetch a high price during the spring.

I am sorry to see the farmers sticking so close to turnip feeding, it makes but blubbery, insipid, ill-flavoured, lean meat at the best; a preferable substitute is to sow tares and Italian rye grass in the fall, to feed the stock in spring and summer; shelter them in the winter with rank straw. Sow tares and oats in spring and summer, and feed green; when they are in full flower mow them for hay, and salt them in the stack, steam them in winter and give them with bean or barley meal, and salt and lime water. Give steamed carrots,

beet, and turnips once a day, which will produce a larger cut of lean much more nourishing and finer flavoured, much firmer fat, and the meat not so liable to produce disease as the acrid skins of turnips and oil cake, which contribute to the disease so extensively found among stock and human beings, as well as to their diminutive size and want of physical power.

The next best grasses for steaming and feeding the stock, of which I have had great experience, are the various species of Agrostis for cows and ewes, it produces superior milk, butter, and cheese, as well as veal and lamb. I will give an example:—General Wadsworth purchased an Estate on the Gennessee river, in the West part of the State of New York; the flats on each side of the river were generally overflowed when the snow melted in spring. The General having attended my Lectures at Albany, sent for me when the floods were over, to see how he could turn to advantage his extensive flats. I made him grub up all the brush wood, and sowed the whole with Agrostis, as they were best for feeding sheep, particularly the Agrostis stolonifera and A.decumbens, all the species when made into hay, have the remarkable property of becoming, when soaked in water, like green grass, and will strike root at the joints, particularly the Agrostis decumbens, or what the Irish call the tiorin grass or butter grass; the General sent the best butter, bullocks, lambs, and calves ever seen in the market of New York. His sheep increased in great numbers. I was witness to the sale of his wool which was twenty thousand dollars a year. There is no country that can raise such quanties as may be produced in Britain and Ireland, and there is no grass can compare with theirs for steaming; it will give out more of the saccharine principle than any grass that grows.

The next discovery I shall mention is the grinding the various stones growing under the earth, and rapidly approaching to its surface. I have seen in the vicinity of Liverpool sand stones, where fifty years ago they could plough four or five inches deep, they are now at the surface and quite bare. In Rutlandshire I have seen limestone running horizontally to a great extent and rapidly approaching the surface, also schist and slate, nitrous sand stone, and every variety common to Britain, particularly the calcarious or combination of earth with lime, which might be reduced to powder and combined with the dung heap in the farm yard, or composted with pond mud and the clearing of roads and ditches, with boiling salt and water thrown on it to destroy seeds, weeds, worms, and insects. Dissolve three bushels of salt in boiling water for every twenty-six loads of compost, throw it on boiling hot, on average land thirteen loads to the acre, if the land is worn out, say twenty-six loads to the acre; the first crop will pay all expenses. The best plan is to lay on a dressing combined with stone powder every three years, and trench-plough the land eighteen to twenty-four inches every seven. If the stone powder compost is employed when you trench, or subsoil with barn yard compost, you will have a great crop; the stone

powder will facilitate the sinking of the superabundant rain, it will strengthen the straw, and prevent it being laid by the rain; the fibrous roots of the grain will sink so deep into the ground, that it causes it to stand erect when the rain ceases. But the great value of stone powder when ground fine, is, it is readily taken up by the roots of plants, and carried into the grain and increases its value both in quantity and quality. The various elementary principles of the earths which enter into the component parts of stones and rocks when ground, will, as it were, bring back the world to its original state of fertility; and even surpassing it, when the stone powders are well understood, and properly applied to the soil to raise the different grains and grasses, as they require various earths to bring them to perfection; even the various poisonous rocks and minerals can be neutralized and rendered innoxious, and made to contribute to the health of animals and man. Nearly the whole of the land in the Lothians of Scotland, is deprived of the carbon, hydrogen, and nitrogen, which dung will not restore; but the compost and stone powder before mentioned will do so most completely.

The most important discovery is to prevent rust, smut, mildew, blasting, and fungus in grain, and even destroying them altogether. Take one bushel of salt, two of coal ashes, one of nitre, and two of lime, and grind them in a drug mill; set a man with a sowing sheet in calm weather when the grain is about six inches high, sow it regularly over the field, it will form a complete protection to the grain and improve it in quantity and quality, it ought to be sown over the grass and hay fields when the liquor from the tanks has not been previously applied; by so doing you will save one-third of the crop, and in some situations one-half, where the grain is much affected by the above diseases.

Sir John Sinclair took a survey of all the provisions raised in the County of East Lothian in one year (fifty years ago), and declared that if all the three kingdoms were as well cultivated as that county, they could raise a sufficient quantity of provisions, of the most healthy description, for the maintenance of one hundred million of people in affluence. I met Sir John in London, in 1835, and asked him if he was still of the same opinion that he expressed forty years ago, respecting the extraordinary quantity of provisions raised in East Lothian; he told me he was much strengthened in his opinion by the estimate of the late Lord Lauderdale, as he had taken a survey of all the provisions raised in the same County for three years, and declared that if the three kingdoms were as well cultivated as East Lothian, they could raise sufficient provisions, of the best quality, for the maintenance of one hundred and eighty millions of people. I perfectly agree with the statements of both those patriotic gentlemen.

This country might be made the granary of the world, and export from twenty to thirty millions sterling, annually; if the soil was properly prepared, it would raise provisions of the best description for

exportation, such as flour (kiln dried), oatmeal, rye, beans, vetches, barley, peas, garden and grass seeds, ales, porter, spirits, butter, cheese, and butcher's meat, salted and preserved in tin cases. The latter would prove of great service to our army, navy, and merchant service, and would be a luxury to foreigners, particularly in a hot climate, as it would be more wholesome than any meat reared in very hot countries. The sale of this article alone would be immense.

But to return to the method of dressing the land. The powdered stone should be applied to the dung heap in the yard, with the clearing of ditches, marl and lime, level the heap, and to every supposed thirty, forty, or sixty loads, put six bushels of salt mixed with boiling water, throw it regularly over the heap and it will kill every insect and worm, and destroy all sorts of seeds and weeds, so that you will reap what you sow. If you do not attend to these instructions, you will sow every kind of poisonous weed, insects and worms with the dung, which is done in nineteen farms out of twenty over the three kingdoms, which causes much of the disease at present existing among men and animals. If the present system is continued the consequences will be very alarming. During the last year the farmers in England and Wales, lost twenty-five per cent of all their stock with the murrain; I am afraid it will be even worse in the present year. However sound when they are taken from the pasture, they become diseased by eating the poisonous plants, &c. abounding on the turnpike roads through which they are driven, as the survey of the market taken by Mr. Peacock, and assisted in his enquiries by the graziers, drovers, and salesmen will prove; many of the milkmen in Edinburgh have been ruined by the loss of stock. The time has come when we seldom see a sound animal fed on pasture, or on land filled with the ranunculus, or butter cup, or what the Scotch call craw taes, and of course the butter, cheese, and milk raised on such pasture must be highly deleterious to mankind.

The Dutch get from twenty to thirty shillings per cwt. more for their butter than the best samples of English or Irish that are brought to market, and for this reason, they send boys, girls, and old women to pick out all the poisonous weeds from their clover fields, and all that injures the quality of the milk, butter, or cheese. I attended a meeting of the farmers of Garvald Kirk, they were much pleased with the discoveries I pointed out to them; they told me that if I could put a stop to the murrain, it would be the means of saving the nation. From the most extensive observations, I find it exists generally in bushy parts, cross roads, and highways, all over the three kingdoms; the water runs from the roads into the ditches filled with scorpion grass, dog's mercury, butter cups, spurge, poppy, and cicuta, all of which are destructive to the lives and livers of animals as well as mankind. The ranunculus, butter cup, or craw foot, Linnæus points out as the most destructive poison to stock.

The following is from a treatise on poisons drawn from the

mineral, vegetable, and animal kingdoms, considered in their relations, to physiology, pathology, and medical jurisprudence, by M. P. Orfila, M.D. of the faculty of Paris, professor of chemistry, and natural philosophy, and contains the most extensive and best conducted experiments ever laid before the public : generally performed on dogs, as living partly on animal and partly on vegetable food like the human species, as what will poison one will poison the other.

" First—The Euphorbia officinarum or Spurge ; he gave half an ounce of the powder to a strong dog at one o'clock, it died at three the following day. At eight o'clock in the morning he made an incision in the interior part of the thigh of another dog, and sprinkled some of the powder in the wound, the animal died at half-past eleven o'clock the same night ; many other experiments were tried, and all proved fatal. The professor observes from these experiments it results that the Euphorbia exerts a local action extremely violent, capable of producing acute inflammation.

Secondly—That its fatal effects depend rather on the sympathetic irritation of the nervous system, than on its absorption.

Thirdly—That it appears to act on the human species as on dogs."

This most destructive kind of plant grows most extensively all over the world, and particularly in grain and corn fields ; in the second crop of clover it will swell animals that partake of it to a prodigious size, and if they are not tapped, death ensues. It grows abundantly about dung heaps, and when carted out with the dung will raise an abundant crop with the grain ; and when the sheep are turned into the stubble field, it is sure to destroy the young and lambs. If the dung heaps were served as I have before recommended, it would destroy the whole of these poisonous plants ; the destruction they cause among stock is beyond calculation. The most destructive family of plants that cover the pasture fields, road sides, and ditches in Britain and Ireland, is the ranunculus, or butter cup, or craw foot, they destroy more stock and cause more misery, premature disease, and death, than all other plants put together ; the milk of cows fed on this fatal tribe of plants and given to children, sows the seeds of disease even in the cradle, and poisons the fountain of life at its source, causing scrofula, and all diseases arising from a scrofulous habit of body, and when mercury and antimony and the long gallimaufry of poisons is given, it causes the disorder to fall in every joint and bone in the body, as well as on the glands and blood vessels and the brain, causing insanity to a fearful extent among the inhabitants of this country ; which was the opinion of the late Sir Astley Cooper, who enumerates forty-six disorders arising from a scrofulous habit of body, in the index to his work on Surgery.

But one of the greatest evils affecting the inhabitants of East Lothian, as well as most parts of Scotland, in addition to the poisonous weeds and insects in the highways, cross roads, and bushy pastures, is the small lots of ground in the vicinity of towns and vil-

lages, kept by the milkmen for the supply of milk and butter; even many farmers have lots of ground along the rivers and water-courses, covered over with butter cups, scorpion grass, dog's mercury, hound's tongue, spurge, poppies, cicuta, and various other poisonous plants, and useless weeds. Their sheep and cattle become diseased with flukes, which make their milk, butter, and cheese so unhealthy and disgusting to the smell and taste. The laws laid down by Moses in the first five books of the Bible, and particularly in the twenty-eighth chapter of Deuteronomy, for the proper cultivation of the soil, are the best that were ever given to mankind; there are severe denunciations threatened for the neglect of this duty. Had the people, in the time of Moses, obeyed the laws of agriculture laid down by the servant of the Most High God, they would even now perhaps have been an independent nation. I advise my readers to study Keath, on the Prophecies, as regards the rise and fall of by-gone nations: they will perceive we are rapidly approaching that fatal rock on which they foundered. Our fields are now filled with all manner of poisonous weeds, from which we are reaping an abundant crop of those virulent diseases mentioned in the before named chapter, as well as a long catalogue of diseases not mentioned in the sacred volume; by administering mercury and antimony, scrofula is extending over Britain and Ireland, and we may expect an abundant crop of that disorder, for when mercury, antimony, and other poisons are poured into the poor patients' stomachs, it subjects them to disease of the bones, joints, and solids of the body; diseases not known to the ancients, so that our medical practitioners have entailed a fearful catalogue of them upon the present race.

I have from my youth used all the power of mind and body to discover remedies to prevent and cure these fatal diseases, and have received every assistance and support from the first medical practitioners in different parts of the globe, who did every thing in their power to recommend and assist me in my laudable researches. I will transmit their names to posterity as being great benefactors of the human race. No sooner did I point out the cause of the yellow fever and put a stop to that fatal disorder, when Dr. Tillarey, President of the Medical Society of New York, took me by the hand and gave me all the support in his power, as well as Dr. Low of Albany, and Drs. Ives and Smith, professors of Yale College, Newhaven.

I went to Jamaica when the yellow fever was raging; Dr. Brown, surgeon to the forces, gave me all the assistance in his power; I put the remedies into his hands for the cure of the disorder, and prohibited the diet that was the cause of the fever, which gave a check to that dreadful scourge. When I arrived at Havanna, Dr. Halliday having heard of my successful treatment of the yellow fever in Kingston, took me to see the bishop, sent by the Cortes of Spain,

to abolish the Inquisition, who had this dreadful disorder, and was given over by the physicians for death: the whole city was in mourning and lamentation at the idea of losing the bearer of such glad tidings. As soon as I saw him, I administered a powerful dose of my medicine and produced strong perspiration; the doctor declared to the assembled crowds in the square who were anxiously waiting the result, that I had brought the fever to a crisis, and the bishop was safe; a general burst of joy overspread the city for the recovery of so great a man, as well as the repeal of one of the most cruel acts of tyrants. I received from the inhabitants the most unbounded kindness, as the History of my Life, Travels, and Discoveries will shew when published.

I returned to New York, where I discovered from the Indians a method of curing the scrofula. In order to facilitate the, cures I invented a Vapour Bath and took out a patent for it at Washington. Dr. William Ireland, Surgeon to the Forces in the West Indies, took the deepest interest in my bath, medicines, diet, and treatment, and was joined by seven others, so called medical men; they were all summoned to appear before the Medical Society of New York, and were told that if they did not relinquish my bath and practice they would be expelled the Society, and stigmatized as quacks. The seven complied with the orders of the Society; their names are not worth recording: Dr. Ireland refused to relinquish my bath and practice, and told them he would sooner give up their friendship and throw all his medical knowledge at their feet as it was not worth retaining, for he had seen greater benefit produced in twenty-four hours on the most malignant fevers, than he had ever witnessed in a month's practice during his life, and to deny the use of such valuable remedies to his patients would be making himself the greatest scoundrel upon earth.

Previous to my leaving New York, the Committee of the Vapour Bath Company requested the seven physicians who superintended the Bath, to send in a report of their respective cases for the quarter ending 1st. October, 1825, with the number and the various diseases with which they had been afflicted.

The following is a copy of Dr. William Ireland's cases. "Out of the number of cases submitted to the bath 227 have been cured; and it is but justice to state, that in acute and chronic inflammation, more benefit has been derived from the use of the medicated vapour Bath in twenty-four hours, than I have ever witnessed in a month's most successful practice.

The following is a list of the disorders included in the above 227 cases:—Obstinate visceral obstruction; acute and chronic affections of the liver; scorbutic diseases of the skin; scabies, and old inveterate cutaneous disease; scald head; salt rheums; ring worm, &c. &c.; jaundice; lumbago; sciatica; acute and chronic rheumatism; asthmatic diseases; spitting of blood; palpitations of the heart,

attended with weak small intermitting pulse; obstinate diarrhæa; erysipelatous inflammations; opthalmia; obstinate glandular and scrofulous diseases; obstruction of urine and menses; strangury, spasmodic strictures, &c. &c.; syphilitic sore throat; eruptions of the skin; nodes, ulcers, &c. &c.; tic doloureux, and nervous irritability."

"Signed W. IRELAND, M.D."

When Mr. Ireland's report was laid before the College, of the success of the treatment of his cases, one of the doctors pronounced it to be a lie, as most of these diseases, particularly scrofula, were deemed incurable by medical men in the by-gone ages of the world; Dr. Ireland told him that he had only two courses to pursue, either to investigate the truth of the affair at the Vapour Bath Institution, or to go to Howbuck and smell powder. In order to prevent the effusion of blood, a Committee was appointed to enquire into the truth of the case, the result was the doctor's statement was proved beyond contradiction, much to the astonishment of many.

On my arrival in London, Dr. Thornton took up my Bath, and the elegant method I had taken to preserve the physical properties of the various roots and herbs, and used with such success in the cure of diseases, particularly scrofula; he also approved of my system of diet which, in his opinion, was the true method of preventing and curing disease. The doctor, as well as myself, were most enthusiastic disciples of Linnæus, as he understood the laws of nature better than any one that ever lived. Like Sir Isaac Newton, he described nature as he found it presented by the Great Creator, not as Linnæus' system, but as its Maker's system. He at once joined the Committee, and investigated all the cases that had been under my treatment; the most violent persecution was raised against him by the illiberal of the profession. My patients at Margate agreed to invite the whole of the Committee to dinner, and the ever-to-be-remembered meeting took place, when hosts of doctors attended for the purpose of opposing the Committee. During the investigation a dispute took place between the doctors and Committee in regard to the success of my practice; the former said as there were some medical men on the Committee, they were surprized they did not get up and speak, Dr. Thornton was then called on to speak. He asked his medical brethren if they wished him to speak the truth as they called upon him; the friends of the Committee and Institution immediately vociferated, speak the truth, nothing but the truth: the doctor then told them that he knew from experience that Mr. Whitlaw could do more towards curing diseases by his Medicated Vapour Bath, and Medical and Diatetic treatment than the whole College of Physicians in London, with the Pharmacopœia at their back. This speech so enraged the medical men, that they had his name erased from the list of the Members of the College of Physicians in London. The medical men in London immediately wrote to their brethren in New York to acquaint them that they had erased Dr. Thornton's name from the list of the College of Physi-

cians, adding that they intended to pursue the same course with all who in any way encouraged my practice, observing at the same time, that similar exertions on the part of the American medical practitioners, would effectually put down my Bath. Dr. Hosack pointed out to them the great advantages the opening of the canal, from Albany to the Lakes, would be to the medical profession, such a golden opportunity should not be lost, but it must be met with the united efforts of the whole medical profession to put down all manner of quacks, else they could never obtain the prize.

No sooner did the legitimate quacks of New York hear that I had taken out a patent, than their rage knew no bounds, the more particularly when they found I had been invited to breakfast with the Supreme Judges, who were much pleased with a cure I had effected on one of their body, of leprosy. They advised me to take out a patent, and carefully drew it out with the specification for me, which the doctors could not upset.

The so-called Medical Society of New York sent Dr. Hunter, one of the greatest doubters and disputers of Washington, to the Columbian Institute, they also sent a paper to the Speaker of Congress and the Senate, inviting them to attend to hear a communication read, that deeply concerned the whole of the inhabitants of the United States. The meeting, at the hour appointed, was attended to overflowing, and the doctor began to lampoon all quacks from the beginning of the world, excepting the body of which he was a member; he then began at Whitlaw and his Committee, particularly Dr. Thornton, whose name, he said, had been erased from the list of the College of Physicians, in London, because he had joined the society of quacks, whom he called the greatest impostors in the world. Even the Royal Family of England were not spared, because they extended their patronage to Mr. Whitlaw. The audience began to show great impatience, and the doctor thought it was time to stop. The Rev. Dr. Staughton was the next to speak: He observed "that he knew Mr. Whitlaw most intimately, as he had taught his Divinity class, Botany, at Washington, and he also knew they were taught by a pupil of the immortal Linnæus;" he added, as regarded the three kingdoms of nature, and his 'Genera Morborum,' wherein Linnæus displayed as much genius and ingenuity as in his greatest and most important work, 'Systema Natura,' "I have examined many systems, and in none of them do I find the same perspicuity, and natural method of classification, taking nature for his guide, and cause and effect for his basis; on this foundation he erected an hypothesis at once simple, elegant, clear, and comprehensive; embracing all and every variety of disease; tracing their origin to a rational cause, and laying down a systematic principle for their cure, founded on the immutable laws of nature. Such is the beautiful and elaborate structure raised by that great and good man, whose daring genius searched into the seeds of disease, and whose unwearied zeal ransacked the whole vegetable, mineral, and animal kingdoms, for the means of relief and cure

which his individual genius had all but completed when arrested by death."

Mr. Whitlaw followed in Linnæus' steps, and from his penetration in the study of cause and effect, succeeded in putting a stop to the yellow fever in New York, Philadelphia, and Baltimore; he also put a stop to tbe cholera morbus in Albany, after it had carried off upwards of 20,000 people in 1811 and 1812, by making the cause and his remedy known to the legislature of New York. He checked the cholera at Savanna, in the rice plantations, where a great number of the negroes fell victims to the disorder. In 1816 he instructed the planters to top dress the rice, with lime two parts, ashes two parts, salt one part, and nitre one part; grind them in a drug mill and sow them over rice fields; they have never had the disorder since. He has travelled for eighteen years from Mexico to Canada, particularly among the Indian tribes, and discovered a most perfect method of preventing and curing scrofula, and this is the man that the Medical Society of New York wish to persecute and put down, although medical men, in bygone ages, had declared that disease to be incurable. Mr. Whitlaw and his patriotic committee, with the Duke of York at their head, have declared and proved to the world that his medical and diatetic treatment is a perfect protection and specific for scrofula even in its worst form, and yet these are the men that are so traduced by the Medical Society of New York; I know a number of the Committee personally, they are the greatest patriots in London, as to the Royal Family they are noted for giving their time and talents towards relieving distress and assisting the poor and destitute."

No sooner was the Rev. Doctor's speech finished than they hissed Dr. Hunter and his friends out of the room; Mr. Elliot, by way of atonement, made a motion that Dr. Thornton be elected an honorary member of the Columbian Institute which was carried unanimously. Dr. Thornton, of Washington, also persuaded the Medical Society, by way of appeasing the indignation of the public, to elect Dr. Thornton an honorary member of the Medical Society of Columbia, for the unjust indignity shewn to him by the College of Physicians in London, which they did.

To shew the high opinion that was entertained of me, the President and his Lady joined my Botanical class, and sixty-nine of the Synod and House of Congress; it was there that the sunshine of popularity illumined my path. De Witt Clinton, Governor of New York, gave me letters to his friends in Charleston, as well as the President of the United States, Synod, and Congress, when a Botanical class of 457 pupils, and frequently double that number attended my evening lectures; I illustrated the classes and natural orders of Linnæus' system of Botany by fine paintings, the most splendid ever seen, they caused the pupils to make rapid progress in learning Botany.

The physiology of Botany, as applicable to the purposes of life,

food, and medicine is the most important study that can occupy the mind of man, as far as his temporal benefit is concerned.

When I went to New York and took the Report of the Committee, published in 1824, the physicians declared it a perfect humbug on poor Johnny Bull. My friends finding I intended to set up the Bath in Charleston, wrote to the doctors to give me all the assistance in their power. The forty-three pulmonic cases were examined by twenty-five doctors, who declared if I could cure one or two, they would give me credit for curing consumption, as they considered it beyond the power of art or nature; I, however, cured the whole. It is but justice to observe that the cases were cured in 1826, and when I went out in 1843, to America, notwithstanding all these pulmonic cases were deemed incurable, yet were they found not only alive, but in the possession of excellent health, and a number blessed with numerous and healthy families; one of the best proofs of the superiority of my system of medical treatment that can be given.

The diseases on which the Medicated Vapour Bath has been administered are as follows :—

Influenza and Cold	211	Hæmorrhoids	4
Rheumatisms	156	Giddiness, or Vertigo	3
Cutaneous Diseases	55	Bilious Colic	3
Pulmonic ditto	43	Inflammation of the Eyes	3
Dropsies	19	Scurvy	3
Diseased Liver	15	Chronic Diarrhœa	2
Asthma	13	Burns and Scalds	3
Debility	13	Pimpled Face	2
Scrofula	13	Pain in the Stomach	2
Fever and Ague	12	Dysentery	2
Sore Throat	11	Cholera Morbus	2
Bilious Fever	9	Fits	2
Suppressio Mensium	8	Stricture of the Urethra	2
Gout	7	Hysterics	2
Old Ulcers	7	Stiff Neck	2
Swelled Face	7	Sore Lips	2
Tooth Ache	7	Sciatica	2
Leucorrhœa	6	Diseased Spine	2
Inflammation, Tumours and Biles	6	Ear Ache	2
Palsy	6	Gravel	1
Country Fever	5	Nettle Rash	1
St. Vitus' Dance	5	Organic Affections of the Heart	1
St. Anthony's Fire	5	Pleurisy	1
Dyspepsia, or Indigestion	4	Jaundice	1
Spitting Blood	4	Total of Fifty Diseases	681
Syphilis	4		

Recapitulation.—Cured 468—relieved 186—no relief 27.—Total 681.

Mr. Dickinson, M.P. for Somersetshire, was induced to read my translation of "Linnæus' Materia Medica," which he did with the greatest interest, he carefully perused it three times, and pronounced

it as his firm conviction that the Linnæan Materia Medica was the best foundation for medical science to build upon, and that I had brought that science to such perfection, far beyond the comprehension of mankind, by the invention of the Medicated Vapour Bath, and the valuable herbs prepared to act on the different organs of the body, as well as the various medications which I made use of for the cure of diseases submitted to my care; the bath being so constructed that it could throw off the caloric, by a great heat from the water, which is the most noxious substance held in suspension and solution by the water, and when it passes off by the safety valve for half an hour, the steam or gas of the water passes into the medication, and through the metal plate into the tent in which the patient is sitting; when the room is heated to the temperature of 72 degrees, the steam or gas is invisible, so that you may read a newspaper without its being wetted; the vapour being loaded with bland oils, it re-animates the whole frame, relieves, and lubricates the vital organs when parched by the fever. The noxious properties thrown on the corium, or third skin, which ramifies over the whole body, are so loaded with the acid, acrid substances, by the fever exerting the whole of the vital organs to a preternatural action; the second skin, or mucous coat, becomes so loaded with bile, that the patient appears as yellow as an orange; the epidermis, first skin or retina, is so blocked up with scarf-skin which will not give way, which causes the fever to rage to a fearful extent: the physicians then administer powerful doses of mercury, antimony, and other deadly poisons, in order to produce a crisis or strong perspiration, the fever still goes on from seven to fourteen or twenty-one days, which they call critical periods; if nature does not overcome the noxious substances that have been poured into the patient's stomach, it is sure to be overthrown, and is so frequently the case, that Old Time had resigned his scythe and darts to the doctors, as they manage things better than him. How different is Mr. Whitlaw's system; with bland oils, sudorific medicines, medication and the bath, he can produce a crisis in half an hour, in all incipient cases of fever, and even when it has reached an alarming height it is always subdued in from twenty-four to forty-eight hours; up to this time he had not lost one case of fever in thirty-five years.

Mr. Dickinson also pronounced my medical treatment to surpass any that was ever practised by mankind, as I have totally excluded the use of mercury, antimony, and all mineral substances, as being wholly inimical to nature; also the narcotic, acrid, and corrosive vegetable poisons, as the smallest quantity taken as medicine, destroys health, and a large quantity brings on premature disease and death; he also stated that I had been enabled by the discovery of the Vapour Bath and treatment, to dispense with blood letting in any case whatever, considering that any quantity of blood is so much of the vital principle of life, which is stated in Mr. Whitlaw's writings. I have carefully read his observations and defence of the aphorisms and medical principles of Linnæus, he having had numerous opportuni-

ties of judging whether they were correct; he ventures to assert they are the only guide to man in the proper selection of his food and medicine; what a noble defence of the Linnæan system, by an unsophisticated child of nature;—every attack made by Dr. Cullen, a classical, logical, sophistical, chicaner, has been refuted by nature's own son, and how easy it was for him who understood the incontrovertible truths established throughout the laws of nature; when mankind depart from these truths, they stray in endless error, which has been the cause of the fall of all nations that have passed away.

In New York and Philadelphia, Dr. Ireland assured the medical men, that he knew most of the Vapour Bath Committee, and they were the greatest philanthropists in London, and would never allow their names to be published unless they had ample proof of the benefits derived from the treatment of Mr. Whitlaw, particularly Mr. Fox, surgeon, and Dr. Thornton. The medical men observed, that if their Report was true, the age of miraculous wonders had commenced again.

Mr. Fox was called before the College of Surgeons, because he had sent his son to Mr. Whitlaw to be cured: and after the first medical practitioners had tried unsuccessfully for seven years, Dr. Thornton recommended his being placed under my care, he was totally blind, with numerous scars over his body; he is now perfectly cured, and has remained well ever since. Mr. Fox wrote to the surgical inquisition, saying "that the man who would propose to have his name erased from the College list, must walk with him to Chalk Farm;" but as none of the inquisitors were anxious to smell powder, they let the matter drop. Mr. Moore, surgeon, was also sent for to appear before them, for the purpose of being expelled from the College list, he having tried his own skill, as well as that of numbers of the first members of the profession, for fifteen years, upon himself without benefit; when he put himself under Mr. Whitlaw's care, his legs were denuded of skin from the knees to the soles of the feet; a perfect cure was effected in about eight weeks. He drew off his stockings and put his legs on the table, saying "before he would answer a word, they must point out any law, human or divine, that sayeth when a man is sick he shall not be cured." They looked like Peter Pindar's parboiled owls, staring at one another, and as none of the inquisitors were in a hurry to point out such law, Mr. Moore resumed his stockings and shoes and left the room, leaving them to nurse their spleen at leisure.

I had an introduction to Dr. James Hamilton, one of the oldest and most respectable physicians in London; he was much prejudiced against me by his medical brethren, but a short conversation with him soon convinced him that I was quite a different person to what his medical brethren represented me to be; he had a most severe quarrel with them for the unwarranted abuse they were heaping upon me, and promised to assist me in my laudable undertakings, and expressed a wish to see some of my worst patients. The Earl

of Stamford and Warrington, sent his factor's daughter to me, she was one of the worst cases of Leprosy I ever saw; she had been to Paris, and various places on the Continent, seeking relief without finding any. I took her to the doctor, he observed, "Dear Sir, you surely do not expect to cure that case; I have been in the four quarters of the globe, and have seen the numerous outcasts at the various lazarettos, but never knew a case of malignant leprosy cured; I have been over two of the Hospitals in London for forty years, and never saw a case cured yet; indeed he did not know of a case of cure since our Lord and his Apostles were on earth." "Dear Sir," said I, "you must have a beggarly view of our Lord's mission to earth, if you suppose that he came to cure a parcel of unbelieving Jews, and carry back all his blessings to Heaven with him. In his ever blessed charge to his disciples to go into all the world, to preach the Gospel, heal the sick, cleanse the leper, cast out devils, and lo I am with you until the end of the world. Why did he give this solemn charge, unless he also gave the power to fulfil it? Since my discovery of the Vapour Bath, there has not been a case of cutaneous disease but may be cured by the bath, with proper medication, medicine, and diet."

The first bath this patient took, she sloughed off four quarts of scales. I took her to Bayswater, and made a perfect cure in nine months, I then took her to the doctor, the dear old man literally cried with joy, he carefully examined the whole body, to see if she really was cleansed, and not a spot was to be seen upon her. The Earl of Stamford had all the medical men who had attended her in London, called to see her; they acknowledged she was well for the present, but said the disease would return in a twelvemonth. At the Earl's request, she came two years afterwards, and they were again summoned to see her, and not a spot was to be seen on her body. They were reluctantly compelled to acknowledge she was cured.

I had seven cases of officers, who had ruptured the blood vessels of their lungs at Waterloo, all of which Dr. Hamilton saw perfectly cured. Major Kennedy, of the Artillery, had his blood vessels ruptured from the strong firing of the cannon; General Fisher sent him in his carriage to my bath, the doctor was in the house when he arrived, in stepping out of the carriage his lungs gave way, and he bled a full quart. I observed to the doctor, that if he was not put into the bath he would bleed to death; the doctor gave the basin to my nephew to hold, and led me into the bath room and told me he was afraid the Major would bleed to death. I told him there was no fear, I told him what I wished to be put in, and gave him the medication. He requested me to leave the house, and he would take the responsibility on himself, as the patient had lost so much blood he was afraid of his death, and if he happened to die in the house he said the doctors would destroy me; I complied with his request and left the house, and returned again in an hour and found the patient taking his coffee; I having learnt from the American

Indians that sugar, cream, and demulcent boiled together, was the best substitute to supply the loss of blood. I gave it him during the winter, and the bath occasionally to keep the pores of the skin open; at the end of six months the doctor found that I had case-hardened the major's lungs completely by the medication, and there was not the least fear of the hœmorrhage returning.

Dr. Hamilton then began to ask some of the members of the Hunterian Society what was the best remedy for hemorrhage of the lungs; he told them the Vapour Bath was, in his opinion, the remedy for all disorders; he took the chair at a meeting of the Society and asked them the same question, and observed that some of them thought the Vapour Bath was the best. The members were only joking with the doctor when they told him so, and that if a person was put into a bath at 104 degrees he would most certainly bleed to death; on asking the Society if that was their opinion, they said they were unanimous. He replied every cobbler to his last, and that they knew nothing about it; he described the cases of Major Kennedy, and the others, all of them had been saved by the bath; those cases, with the numerous others that the doctor witnessed at my house, and the Institution for the poor, convinced him that my new system of medical treatment would sooner or later supplant the present practice which s acknowledged to be inefficient to cure the great mass of disease ithat is overwhelming the country, particularly scrofula, consumption, bronchitis, and glandular diseases; he sent me all the cases he could, particularly bronchitis, consumption, fluor albus, clorosis, and cutaneous diseases.

The Governors of St. Pancras Workhouse had ten cases of cancer, in its occult state, sent to me; the tumours were quickly dispersed and the patients restored to health; they wished to have the bath introduced into St. Pancras Hospital, Mr. Dilone, the surgeon, also wished it, but the physicians opposed it, and brought the matter before the College of Surgeons, Abernethy was in the chair, and a most tremendous opposition was set up against me; the chairman swore at them, and said if they could not cure the people, he ought to be obliged to me for doing so for them; a druggist then got up and said, once convince the English people that they could have all their disorders cured by the Vapour Bath, and a few bundles of herbs, and down goes all your colleges, and all the knowledge you possess; it would be poor pickings for the doctors and apothecaries, they would look like church rats, and nothing could save their profession but the most determined opposition, and moved that any member aiding or countenancing the Whitlaw practice should have his name erased from the college list and be stigmatized as a quack, which motion was carried by a great majority, one hundred voting in favour of Whitlaw's bath and remedies being introduced into the present medical practice. In an article which appeared in the Lancet, ascribing the opposition of the medical men to pecuniary motives, the writer said, these gentlemen know very well that if the Vapour Bath

were generally in a course of application, nine-tenths of the medical men might be beneficially dispensed with: this notice increased the rage of the doctors beyond conception; they sent a letter to Dr. Hamilton, telling him that if he did not withdraw his patronage from Whitlaw's practice, his name should be erased from the College list; numbers of the Society teased the good old patriot almost to death, but he stood firm as a rock, and told them that if they carried their threat into effect, he would lay the whole affair before the House of Commons. So far from intimidating him, it only increased his energy; he sent me all the incurable cases he could find, particularly bronchitis, and left his dying charge to me, to bring the matter before the House of Commons, declaring he had never seen a case cured by any one but me, and that I had not failed to cure all that he had sent.

A Committee was formed, with one Rainey at their head, to hunt me down, they were determined to lie me down, and advised their brethren in America to do the same. Drs. Ireland and Comstock, of Virginia, wrote letters to the Vapour Bath Committee, stating they were likely to succeed, if the Committee did not take active measures to prevent it, which they did completely, by detecting some of the first of the faculty, and exposing them publicly for stating untruths by accusing me of killing my patients; even their wives, daughters, and sisters were detected in the same way. The doctors made the whole affair known to the College, stating they had exposed them in the public reading rooms. Abernethy, who was in the chair, told them that it served them right, for becoming public liars; and observed he had not been at a public rout for a twelvemonth, without seeing the ladies and the doctors having a battle about Whitlaw, and the doctors always came off second best; he told them that by pursuing such ungodly practices they were sure to bring disgrace on the medical profession, he observed that he had grown old in the profession and in practice, and would advise them when Whitlaw and his practice were spoken of, if they did not wish to befriend him, they should keep their mouths close, as a close mouth catches no flies. I got a respite for a time, and my patronage and practice was much enlarged by their opposition.

Having been laid up with mortification of the legs, which continued until this time, April 1847, for two years, a number of the illiberal of the profession have done all they could to lie my valuable practice down during my absence, when I was suffering the most extreme torture, being given over for death by thirteen of the first medical practitioners in London;—being seventy-six years of age, they said there was no hope. I threw myself on the bath, and the valuable herbs which the Almighty had so profusely put into my power, and I made a perfect cure of myself, and have cured several others since, of most desperate cases of mortification.

During the whole of my medical and botanical practice I have acted strictly in accordance with the Linnæan system; and a

number of Members of Parliament and others, wished me to publish my new medical discoveries, and translate "Linnæus' Materia Medica" from Latin into English. The extraordinary success I had met with in England from 1821 to 1829, had never been surpassed by any medical systen ever promulgated by mankind, I finished the translation in 1829; when some of the Members of Parliament solicited Dr. Adam Neale, Physician to the Forces during the Peninsula war, and also to His R. H. the Duke of Kent, to go to Holland, Sweden, Denmark, Russia, Prussia, and Germany, to search into the practice of the Linnæan system, and to give his opinion as to whether Linnæus was borne out in the views he took, particularly that of animate contagion. On his return from those countries, he was highly enraptured with the views of Linnæus, not only as one of the best naturalists, as his "Three Kingdoms of Nature" will abundantly prove, but one of the best physicians that ever lived; he wrote a work to establish the truth of the Linnæan doctrine of animate contagions, called "Researches to Establish the Truth of the Linnæan Doctrine of Animate Contagions, with the Origin, Causes, Mode of Diffusion, and Cure of Epidemic Diseases," a work of very great merit. I shall here introduce his preface, to convince the public of the truth of the Linnæan, as well as my new medical discoveries, in accordance with the Linnæan doctrine. The medical men of London were much displeased with his work, and raised a considerable opposition against him for the view he took of their practice.

"Between the sciences of medicine and of astronomy, this analogy exists, that both are essentially founded on accurate observations: in both, all calculations as to the future, can only be formed from a knowledge of the past: and in both, the more minute and circumstantial our knowledge of foregone facts, the more likely we are to arrive at true and just conclusions.

"In one circumstance alone does medicine appear to possess an advantage, namely, that in the inspection of the bodies which are the subjects of its contemplations, we can subject them better to the operation of our visual senses, by the aid of the microscope, than astronomers, whose objects being placed at such immense distances, can only be observed through the medium of a telescope.

"But in astronomy, on the other hand, its cultivators possess many great and striking advantages over physicians, not only from the certainty they are capable of attaining from the due employment of the exact sciences, but also from the determined periods of the revolutions of the heavenly bodies, which are not to be influenced by the numerous accidents ever occurring in the minor affairs of this earth.

"In medicine, also, it must be borne in mind, that although there is no lack of observations, yet so loosely and inaccurately has the greater portion of these been made, so completely have they been intermingled and overwhelmed by masses of most illogical and unphilosophical reasonings, so much have they been scattered through

a vast variety of ponderous and unreadable volumes, that, even with the greatest inclination to arrive at truth, its attainment is, in many cases, most difficult, nay I would add—nearly impossible.

"Besides, medical writers often have been men not of the most extensive views, and remained but too contented with merely skimming over the surfaces of events, and amassing fortunes, rather than bent on extending the limits of their science: and even when more happily constituted, their daily attention has been necessarily so engrossed in the minute, and often painful practice of their profession, that but few, comparatively speaking, of the more generous, or better qualified have left behind them writings, which can be made useful to the future advancement of medicine. True it is that amongst the great numbers who have written upon our art, there have been several of clear and powerful intellects, but most of these, having taken up some early bias or set out in an erroneous direction, have generally become imbued with some fanciful, but splendid theory, and passed their lives in the pursuit of unreal visions.

"Of great physicians, also, by far the majority have been men living and practising their art in crowded cities, or holding professional chairs in the Universities in similar localities, and from those very circumstances having had but little leisure or attachment for the study of natural history. How few, therefore, of such men as Hippocrates, Galen, Linnæus, Darwin, Ramazzini, Mason Good, T. Forster, Sims, and a few more, can we enumerate, who have been not only accomplished physicians and writers, but excellent naturalists and philosophers:—and whose works will always continue to enlighten future ages.

"On the whole then I fear that it must be admitted, that even at the present day, medicine may be considered in its infancy, and that it will probably require a series of ages before it can be pronounced to have attained its manhood.

"It is therefore from a full conviction of the necessity of recalling the attention of philosophers towards the discovery of some better foundation for good practice, that I have thus presumed to point out the slippery, sandy, and unsound nature of the present basis of medical reasonings.

"Having no motive but that of benefitting mankind by aiding in the promulgation of useful truths, I have ventured to come forward as an advocate for that of the Linnæan doctrine of animate contagions, believing that it is founded on facts, and in the everlasting nature of things, and that by its development alone, physicians will be at length directed to the true method of curing diseases.

"In conclusion I may add, that having passed much of my life amongst large masses of men, and having had opportunities of witnessing many of their severest maladies and sufferings, I have ventured into the *arena*, in the absence of better qualified, or more willing observers, to bear testimony to the universality of the Linnæan doctrine; in the hope too, that if the following researches should serve

no better purpose, they may at least awaken in those who are interested in such enquiries,—and who I would ask are not interested in the truths of medical science?

"The field of inquiry itself is ample, and as the attainment of some firm foundation in medicine must eventually contribute mainly to the happiness and well-being of society, it presents one of the fairest scopes for the honest ambition of men of generous and humane minds: and to such I commend the further prosecution of the task, fully convinced myself that its success must be certain and imperishable, and that sooner or later, truth must and shall prevail, even in medical science."—*Dr. Adam Neale.*

On my arrival from America, in 1819, I had a letter to Mr. Colquhoun, police magistrate, of London, from his agent in New York. I delivered the letter, and he was then writing his work on the different grades of Society, Trades, and Professions, in England and Wales; and having noticed the arguments that were taking place among the doctors, concerning the fearful increase of scrofula and glandular disease, fluor albus, and chlorosis, he wrote to the clergymen of England and Wales, and requested them to assemble the doctors of their parishes, to ascertain how many per hundred were afflicted with the above diseases for forty years prior to 1813. The result of their enquiries was, there were at that time not more than one in a hundred affected with the above disorders, but in 1813 there were ten or eleven per hundred. He invited Dr. Bailey, and fifteen of the first medical men in London to dine with him, and showed them the work he was about to publish; after carefully perusing it, they begged him not to publish a line of it, as the disorders would not give way to the skill of the first medical practitioners, and were deemed incurable; they said if the work was published, it would show to foreigners the great weakness that was coming over England, and alarm the nation.

I have paid great attention to the different authors who have written on the subject, and to keep within bounds, I consider that there are at the present time, at least sixty in the one hundred of the whole British population affected with these diseases. I will here quote Mason Good, on the Study of Medicine. In Vol. II. page 799, he observes, "It is very singular, that of this class of medicines, the only one which Dr. Cullen has thought it worth while to notice, are bark and colt's foot; of the first of these, he speaks very doubtfully, while he seems to depend more on the second than on any other remedy whatever. This opinion he expresses in his Practice of Physic, published 1783, but in his Materia Medica, published six years afterwards, he gives it the same high character, and tells us that he was induced to try it in scrofulous cases upon the testimony and recommendation of Fuller; he employed both an expressed juice of the fresh leaves and a decoction of the dry, but preferred the former, of which he gave 'some ounces every day,' and affirms, that 'in several instances it has occasioned the healing

up of scrofulous sores.' He admits, however, that neither of them were, in some trials, sufficiently effectual.

"The metallic salts have been more generally used, and have at least acquired a higher reputation, though, with the exception of calomel, I do not know any of them that can appeal to any decided testimonies in proof of their success; and even calomel may perhaps be regarded rather as an alterant or mild stimulant than as a tonic. Salivation has always done harm; and on this account, also, mercury in every form must be given in minute doses. Combined with some preparations of antimony, and particularly with the precipitated sulphuret, as in Plummer's pills, it is said to have been chiefly serviceable; but in my own practice I have not found this medicine of any manifest service in the present disease. The acids have also been tried, but are of little or no avail. They who regard the scrofulous taint as consisting in an acid acrimony, are apt to lay hold of this fact in support of their hypothesis. A better reason for their inefficacy is perhaps to be found in their sedative property, which we had occasion to notice at some length when treating of phthisis. Upon the whole, however, the tonic class of medicines has thus far proved considerably less decisive and important in the treatment of scrofula than we might fairly have conjectured. Yet a tonic regimen of sea air, sea bathing, liberal exercise, and a diet somewhat generous, is of the highest consequence in promoting improvement, and ought by no means to be dispensed with. The infirmary at Margate is on this account a noble institution, and cannot be too liberally supported. Of the specific benefit of narcotics, such as hemlock, henbane, foxglove, asclepias, vincetoxicum, and many others, I have yet to be persuaded. They may possibly be of some use in quieting the irritation occasionally produced by congestion and mechanical pressure, where the tumours are peculiarly indurated and large; and in such cases may assist in softening and diminishing them: and they may perhaps operate in the same way where, in the later and more malignant stages of the disease, the secretion is become virulent, the open ulcers irritable, and a foundation is hereby laid for hectic fever. But I can conscientiously say with Dr. Cullen, that they have often disappointed me, and have not seemed to dispose scrofulous ulcers to heal."

Mason Good, in the 4th vol., page 226, on the diseases of the bones, observes, "that rickets, or diseases of the bones, were never known from the foundation of the world to the middle of the seventeenth century. Most writers who have written on scrofula and diseases of the bones have ascribed these disorders to acid or acid acrimony. For medical men to pretend to give mercury to a stomach loaded with acid or acrimony, or both, shows that they are quite ignorant of what they ought to be thoroughly acquainted with, viz. chemistry; for, to give a dose of calomel upon an acid or acrid stomach, will convert it into corrosive sublimate of mercury, which, when given as a medicine, will produce disease of the bones, glands, blood-vessels,

and every organ of the body. It has been said by some medical men that three-fourths of the inhabitants of Great Britain have their bones more or less diseased by the administration of mercury, antimony, and other corrosive poisons."

In order to show the effect it has on the bones of animals, it causes varicose veins and diseases of the bones, and other organs of the animal's body, particularly the horns. When I visited Dartmoor prison in 1809. I was quite pleased to see the French prisoners making use of the bones of the animals they had used as food, by converting them into spoons, and a variety of useful table furniture; they looked as *handsome* as if they were made of ivory, so sound were the bones of animals in those days: but it would puzzle all the manufacturers of Great Britain to make any thing from the blue and rotten bones of animals now-a-days, which clearly points out that a large portion of oxalic acid has entered into the bones of the animals, causing them to turn blue when cooked. I observed the same thing in America fifty years since; the animals' bones were all sound at that time, but not since the English butchers introduced the ranunculaceous plants in 1792 and 1793, and cultivated them on their feeding grounds in the vicinity of New York, Philadelphia, and other cities. The Ranunculaceæ are the most acid and poisonous plants in the world; they corrode the points of the absorbents in both the stomach and intestines of healthy men and animals. The absorbents are sharp, like needles: their function is to absorb the nutritious portion of the food; but when the points are destroyed by the acridity of the Ranunculus, Euphorbia, and other deleterious plants, or by mercury, the gross and oleaginous portions of the food are also taken up and carried into the circulation, loading the bodies of animals with superfluous and acrid fat, and inducing the same condition in human beings that consume the products of domestic animals, such as milk, butter, cheese, butchers' meat, &c. Another powerful cause of disease in animals, and which renders their products unfit for human consumption, is the "Fasciola," gourd-worm, or Fluke of Linnæus, Genus Hepatica. The body is ovate, sharp before, with a white line down the middle, and a spot in the centre; it inhabits the livers of sheep, and is often vomited by them into brooks where the cattle water; it is generally found fixed by a pore at the extremity, and another in the middle of the abdomen: it is the direct cause of many diseases from which sheep suffer, especially dropsy and the rot. The body of this parasitic animal is about an inch long, broader on their fore part, and terminated by a tube, the back marked by a series of about eight longitudinal lines. They are found in shoals in the livers of sheep: they consume most of the blood in its passage through the liver, which becomes decomposed in their stomachs, and from the loss of its alkaline and other properties, unfit for support of vital and healthy organism. The oily portion is voided as excrement from their bodies, on which the cattle are dependant for nourishment, and by which means they become overloaded with acrid, corrosive, and

unhealthy fat, and but little solid flesh. The blood of animals thus affected is so poor that it will scarcely stain linen, and the gravy of the meat, when roasted, is like dirty water.

I have detected the ova and young fluke in the adipose tissue, particularly in the suprarenal capsules, and the fatty parts of the gluteal regions, likewise in subcutaneous tissue. Butter is likewise deteriorated by this same cause, and its horriby nauseous smell, when kept, is dependant on it, as it consists essentially of the excrement of the fluke. Persons consuming animal products necessarily take the seed of the fluke into their systems, particularly females after the age of thirty, when it may be detected in various parts of the body, especially the breast. That most fatal disease, cancer, is produced by the presence of this animal; and although all medical men who have written on the subject deem it perfectly incurable, I firmly assert that I have been successful in numerous cases of incipient and occult cancer: and however positively they deny the cause of the disease to be this animalculæ, a simple proof may be had by procuring and burning some of the animals, when the most nauseous smell will be eliminated, corresponding to the odour given off by this disease, only much more powerful and unbearable. If mercury has been given there is no hope, as the bones and other parts of the body are sure to be diseased by it.

In consumptive cases my treatment has been equally successful. I have cured every case that has applied in the incipient stage, before ulceration had commenced; and four out of every five since I began practice in London in 1819, and have found, when the stock has been much affected, which is particularly so in wet seasons, rendering all diseases more prevalent, particularly cancer, cows and goats, fed on tares and oats, sown on land well limed and salted, also bran, barley meal, and salt, mixed with flower and chaff, and mashed with lime water, become free of these animalculæ and the diseases produced by them. Persons under my care, fed from the products of these animals, soon became convalescent.*

I have hitherto done all in my power to get the Corporation of this great city to submit a farm to my cultivation, when I could prove that more than double the usual produce could be raised, of the best and most healthy description; and I should be enabled to restore the broken constitutions of scrofulous patients in one third the time ever before done. Indeed, if I could get the country to lay down a legitimate mode of cultivation, it would not only double the produce, but would preserve the health of children free from disease, except from congenital animalculæ and accident, and restore them to an antediluvian state. If the government would give me one of the crown farms near the Queen and the Prince, I would soon set an example to show how they could preserve all their subjects from pre-

---

* See Report of Medicated Vapour Bath Committee.

mature destruction, which is sure to follow, if the present indifferent agricultural policy is persevered in.

If I can prevent and cure scrofula, every sensible man in the kingdom will admit me to be one of the greatest benefactors of the British nation. If the inhabitants of the city of Edinburgh, Glasgow, Dublin, Belfast, and other cities, will give me the opportunity of farming, to raise proper food for invalids, I am willing, while life and health remain, to do all I can for the rising generation and the future race. It is not remuneration which I am looking for, but the benefit of my fellow-creatures.

In 1835, when Sir John Sinclair was in London, he was anxious that I should visit Holland, for the purpose of making a survey of the agriculture and horticulture of that most interesting country. He furnished me with letters of introduction from the Dutch Ambassador to the Secretary of State, also from Lord Palmerston to Mr. Jerningham, Chargé d'Affaires, from Mr. Rothschild to Mr. Sickles, banker of Amsterdam; also to the agricultural and horticultural societies. I received the most marked attention from all to whom I was introduced. Sir John told me, that all the works and travels written on Holland were generally the productions of either officers, merchants, or idlers, who knew nothing whatever of agriculture, and invariably gave a most inverted description of its actual state.

On my arrival at Rotterdam, I had a letter to Mr. Marshall, stationer and bookseller, through whom I got introduced to some of the best families in the place, which proved of the greatest service to me. At this period, a severe persecution of the resident medical men, on account of their inordinate administration of mercury, was going on. Children had been the greatest sufferers; and it was proved beyond doubt, that one-fifth of the whole population could refer the severe diseases under which they were labouring to this most deleterious remedy—a medicine, the effects of which are more destructive of the human frame than all the maladies to which man is prone.

Mr. Marshall accompanied me through a street about a mile in length; but one medical man could be found in all that distance. We asked him if he had any mercury or antimony for sale. He told us that he had a plenty for English or French, but none for Dutch. I asked him the reason why not for Dutch. He said he would not sell a single grain for six hundred guilders; for if it became known, he should not only be fined, but confined and drummed out of the country, to the tune of the rogue's march. I told him it was a hard restriction. He considered that they deserved it, as the medical men had, by the indiscriminate use of mercury and antimony, diseased the bones of more than half the inhabitants, especially amongst the children. He inquired the effects produced on the natives of England. I told him, that full two-thirds of the population were diseased in their osseous, glandular, vascular, and nervous systems, especially in Brunners and Peyees glands of the large and small intestines; that this was evidently the effect of the careless adminjstration of mineral

preparations, and acrid and corrosive vegetables, and likewise by the consumption of butchers' meat, and the products of animals fed on pastures abounding with poisonous plants, especially the Ranunculaceæ; that numerous cases of insanity were attributable to the same cause, and that fluor albus had also become excessively common, evidently referable to the same exciting means, a disease which was sowing everywhere the seed of a scrofula amongst children, and rendering them, in comparison with their ancestors, an imbecile and degenerate race.

My remarks caused a deep sensation in all who heard me. I received most numerous invitations from the highest class of persons residing in the city. From 1700 to 1725, the Dutch were the most diseased nation in Europe. The Fasciola, or fluke, had been introduced into the country, with the Trichosanthes, or snake-gourd, about a century prior, and had multiplied to such an extent, that in 1714 they lost every sheep in North Holland, and two hundred thousand cows. It is reported to cause gall-sickness, by which the cattle were carried off, and likewise induced icterus, sciarhus, fluor albus, chlorosis, remittent, nervous and putrid fevers, to a fearful extent. In 1725 the sea burst the dykes, and inundated the whole of North Holland, by which numbers of the inhabitants and stock were destroyed. At the time, this was considered a most severe calamity, but ultimately proved the greatest blessing, as the sea-water destroyed not only the fluke, but every poisonous vegetable cumbering the land. The government had the dykes repaired and the salt water pumped out, and it was then they thought proper to adopt the important improvements of Linnæus. It was enacted that no milk should be offered for sale in any of the towns or cities, until permitted by appointed inspectors; these were most competent judges, and they at once knew if it was produced from diseased animals, and particularly those affected with the disorder occasioned by flukes, butter flower, or Euphorbia; when it was discovered to be bad it was thrown into the gutter. I asked the inspector why he did not give it to the hogs? he replied, "because he knew it would poison them;" when it was fouud to be diluted with water, it was seized and sent to the poor-house. If any person was detected in passing milk into the market that had not been examined by the inspector, they were taken to a post at the end of the market, and received twenty-five lashes for breaking the law.

All cattle before they are slaughtered, are examined by two members of the Butchers' Club, and two Inspectors appointed by the Corporation. When an animal is much diseased, they send a constable with the owner to see it sold to the Gas Company to illuminate the city; they will not allow them to make sausage meat of the diseased carcases as they do in London; if this method were adopted in our metropolis, there would be seven or eight out of every ten that would be pronounced unfit for use, and we should not have such stuff as is now sold for milk.

I had an introduction to a farmer, at Gouda, whose father was one of the persons employed by Linnæus in conducting the various experiments at Hartykamp; they tried upwards of four hundred species of grasses, clovers, and various other plants, to see which would produce the best butter, cheese, and milk, also to ascertain the soil best adapted for the growth of the different plants; they formed a garden seven miles from Amsterdam, to which people resorted in the afternoon and took Tea, with the milk, butter, cheese, &c. produced there. The plants that the cattle were fed on, and the various qualities of clover combined, produced butter of the finest and most delicious quality; the different species of Agrostis combined, proved, next to clover, the best food for producing rich butter. It would be too tedious to enumerate the various qualities of milk, butter, and cheese produced from the combinations of the different grasses, but it clearly demonstrated the truth of the divine charge given by Moses to the Jews, "Thou shalt not sow thy vineyard with divers seeds, lest the fruit of thy seed, which thou hast sown, and the fruit of thy vineyard be defiled." The whole of Linnæus' experiments gave proof of the divine command, as any genera of plants, when the species are combined and used as food, will give better milk, butter, cheese, and butchers' meat, than any single species: see my work on the Prohibitions of the Mosaic Law, page 33.

When I went to the Hague, the President of the Agricultural Society met me in his carriage, and gave me the most cordial reception; he took me over a large portion of the country. I soon found that this industrious nation had to contend more against the interior than the exterior waters, the Rhine is so dispensed by its various branches, and so absorbed by this level country, that it has been found necessary to cut a large canal to the sea to give it egress, solely for the purpose of facilitating the process of draining the land of the superabundant water. The pastures are generally intersected by canals, which are a convenient means of transport, and by the use of windmills, serve either for draining or irrigation; I need not state the great advantages of these canals; when the tide is ebbing, they send a number of boats to the sea beach and load them with sand, which is carefully laid away for the purpose of littering the cows in the winter, and is mixed with the dung, and when used for raising the grain, it strengthens the straw and keeps it from being laid by the wind or wet weather, and improves the quantity and quality of it, and proves the correctness of the experiments I made at New York. I have found that the various grasses that are coated with silex or sand, make the best butter, particularly when steamed, and will keep very well. This hint ought to be taken by the inhabitants of Great Britain and Ireland, as the sea sand will prevent the accumulation of flukes, which is the reason the Dutch butter keeps so well. The observations I made at the Hague, are amusing as well as instructive; a lady sent me an invitation to take tea with her, at the house of an English clergyman, she was one of the most beautiful

and accomplished women I ever saw; she had been at the Court, to hear the trials of the doctors for administering mercury and antimony to their patients, and amused me with the drollery of the lawyers when pleading against the medical men; the suit was first commenced by the ladies and was at that time carried on with great vigour. This lady was very anxious to hear my opinion of the agriculture of Holland, as she had seen a letter written by Sir John Sinclair, to the President of the Agricultural Society of Holland, recommending me as the first agriculturist of the age, and had she not been engaged by pressing business, she would have accompanied me to hear my observations on that most interesting country. I was equally anxious for her presence, as she seemed proficient in all the European languages, and was excessively desirous of becoming acquainted with agriculture and horticulture, as she considered them to be the main pillars of the state. I felt exceedingly curious to ascertain who my fair proselyte was; she proved to be connected with the British Embassy, which greatly delighted me, as I never met with one more apt and competent for the detection of government intrigues.

After this I proceeded to Leyden, here I had an opportunity of seeing the Botanical Gardens, and how great was my delight on witnessing the statue raised in commemoration of my master Linnæus, he who had been the means under Providence of unveiling the beauties of nature, of classifying and reducing to man's mean comprehension, the perfection of the great Author's works, and of showing their adaptation to his every-day necessities. Through him we are provided with a source of amusement and employment, of emolument and thought; for when

> "Presented to the cultured taste,
> No rock is barren, and no wild is waste."

So simple, so plain, and yet so perfect are the laws laid down by him, that it requires no brilliancy of imagination, no intuitive understanding to comprehend them. In all her works nature is simplicity herself, and as such read by him.

Linnæus' classification of the three kingdoms of nature, especially the vegetable, has drawn on him deservedly the warmest eulogiums. He takes the sexual system as a guide, and divides all plants into classes, orders, genera, and species, but he shines the most conspicuously in his classification of their physical characters as adapted to the uses of man, for food, medicine, and the arts. He also pointed out the marks by which we may discriminate the edible from the poisonous, those best suited for the feeding of domestic animals, the most approved mode of their cultivation, and how they may be the most economically turned to account for the increase of animal products. In his classification of his other two kingdoms, the animal and mineral, he was equally happy, in short, as the master of his subjects, his parallel never existed. His three kingdoms of nature have been a key-stone to all the civilized world, and frequently his works, and those of his faithful followers, have been copied by the

great-little men of our day, and presented to the public as original productions, without giving him or his numerous faithful and persevering pupils the slightest credit. Those receiving instructions from him travelled in all parts of the globe, and it was a common practice for them to send him new specimens to describe by name. He sat like Adam, alone, the rightful namer of every thing new in this, his peculiar sphere of science.

When I stood before the bust of my great and much-respected master, and contemplated the many obligations under which I lay to him,—first, in opening my eyes to the goodness of that Supreme Being who had created all things, and secondly, in affording me a source of recreation on whatever waste I should be cast, how could I but feel the greatest gratitude almost amounting to veneration towards him? he had been to me a friend, a teacher, and a guide, and I could sympathize with him in his persecutions from the world. With difficulty could I leave the spot, and as I lingered and plucked the leaves of trees planted by himself, my thoughts would frequently revert to former days, when he taught me to turn from the idle follies of this world, and worship my Creator in his works.

How I grieved when his sufferings before his death were told me, and that he had not known of my discovery of the Medicated Vapour Bath, which would have restored him, and shown that minerals, as well as narcotic, acrid, and corrosive vegetables could be dispensed with in the treatment of disease; this have I proved to demonstration, and have been the means of saving thousands from the unrelenting fangs of death. How sincerely ought I to thank God for giving me strength to bear up against the many persecutions I have suffered, both in this country and America, in endeavouring to promulgate, by practice, the views of my great instructor for ameliorating the position of my fellow-creatures and lessening their sufferings.

I was sorry to find during my stay at Leyden, that the French at the time of their invasion of Holland, had tried to suppress the sexual system and classification of Linnæus; all the medical men, however, persevered in following it as the natural guide to the characters of plants, whether nutritious or poisonous. Jussieu's system of natural orders, jumbles them so completely together, that it is almost impossible for even a good botanist to detect deleterious from edible plants. If I could have remained in Holland longer, no doubt, with the assistance of practical men, I should have been enabled to remove the innovation entirely.

We now began to translate the Reports of the Committee, and observed the cures we had performed, powerfully strengthened the views taken by Linnæus. The natural orders of Jussieu had been tried, and found quite insufficient as a guide to man. During the most active part of Linnæus' career, the French botanists were constantly teazing him with letters condemnatory of his arrangement, and, most singularly, they were troubled with a peculiar kind of obliviousness regarding the postage, not only to his great annoy-

ance, but pecuniary loss, and more especially as at that time his circumstances were far from affluent; not satisfied with this, they lampooned him to such an extent, that he at length was compelled to retaliate in their own coin. He caused to be published a caricature,—a bear, representing himself, held the principal place in the design, walking through a verdant and blooming forest, surrounded by innumerable monkeys, emblematical of his French opponents, teazing him as he proceeded, these diminutive creatures he was scattering on either side with his unwieldly paws. This was forwarded to Paris as his last communication with them, which so enraged them, that their exertions became doubly strenuous to annoy him, but it was too late, Linnæus had been a great benefactor of mankind, and had become too firmly respected by a thinking community, to be affected in the least by the offended pride and effervescence of trivial individuals. My informant related the above in so facetious a manner, that is excited my risibility in no small measure, and I left the gardens, though with pain, yet highly gratified. I often wish most heartily I could again make a tour through Holland and Belgium, to spend another hour in the much-revered spot, and once more see the prototype of the true master of nature; as a philosopher and philanthropist he truly deserves the admiration and esteem of all mankind.

At Leyden, I received the kindest attention, unfortunately most of the professors were absent, to whom I had letters of introduction, which I regretted greatly, as they were the most learned men in Holland. From thence I went to Amsterdam, and having delivered my introductions, was well received, especially by Mr. Sickles, to whom I was introduced by Mr. Rothschild, he treated me most hospitably, and at once introduced me to the police magistrate and Mr. Rumman, King's Advocate, who also treated me with the same kindness; he gave me an abstract of all the laws passed in relation to food, from 1700 to the present time, by Holland and all the other governments of Europe. He had the greatest reverence for the views of Linnæus on the subjects which gave rise to the present law, confirmed by the government, compelling every student of divinity to attend a year's course of natural history, and then pass an examination before a competent and properly appointed board, that they should be acquainted with it as showing the creative powers of God and his providential care of his children; before this was achieved they were not allowed to hold clerical orders, natural history being necessary to the right understanding of the Scriptures.

This law was so well received, that those clergymen who were unacquainted with the subject, applied themselves to its study with the most indefatigable perseverence, so as to be able to teach their congregations its great importance in estimating the beneficence of an Almighty Being, by leading them from the admiration of his works to the worship of himself; they showed them how it tended to prosperity and health; and established classes at which those wishing to

acquire a knowledge of agriculture used to meet once a week; they took in foreign publications on the subject in hopes of adding to their already improved knowledge, being desirous, if possible, of ameliorating the condition of the people. I attended a general meeting, and received some very valuable hints; their specimens of bread and butter were the best I ever tasted. Since that law passed, the Dutch have prospered more rapidly than any other country in Europe. I may just mention an observation made by James E. Smith, President of the Linnæan Society in London. in speaking of the great advantages derived from the labours of Linnæus, and his introduction of various fruits and vegetables into Sweden, notwithstanding its extremely northern position, "That their tables furnished a repast superior to those of any other European country." He moreover remarked that from the study of Linnæus' "Three Kingdoms of Nature," there was not a publication emanated from the press of Sweden, that was not evidently the effusion of a well regulated mind, this could not be said of any other state or kingdom in Europe. Britain and Ireland are fast approaching ruin, for want of scientific men to manage their affairs.

I must crave pardon for stating here a few striking and simple truths. The sheep have been suffering for a number of years from foot-rot, scab, staggers, dropsy, fluke, consumption, ulceration in the stomach and bowels, and diarrhœa; and, to complete the sad catalogue of disease, murrain. In 1845, we lost one-fifth of the stock in England and Wales, and nineteen out of every twenty milch cow were diseased when they came to market. One milkman alone, at Islington, lost six hundred cows; and many milkmen in London a proportionate number. I went to the Eingburgh market last year, and found full three-fourths of the butchers' meat diseased; I related the circumstance to some of the farmers in East Lothian; many of the bailiffs and stewards would not believe what I asserted, others took my part; they, however, sent my friend Mr. Peacock, who was accompanied by a number of unbelievers, to take a survey of the market, the state of which is here related :—

"*A Statement of the Health of Stock killed at Edinburgh and Neighbourhood to the* 22*nd of July*, 1846.

"Mr. Gray, flesher, Mussleburgh, declares, that three-fourths of the old sheep killed by him are diseased with flukes in their livers, and have the foot-rot, independent of murrain, which has been very bad for a month back, He last killed thirty young sheep, and not one of them had a sound liver.

"Mr. Dudgeon, flesher, at Mussleburgh, makes the same declaration. Also Mr. Wright, of Edinburgh, flesher, states that fully three quarters of the old sheep are diseased with flukes and foot-rot; and that a few weeks ago nearly all the cattle were affected with murrain: that numbers of the cattle have flukes in their livers.

"Mr. Bell, flesher, of Glasgow, says, that three-fourths of all the sheep he kills are diseased with flukes, foot-rot, and murrain; and at present, fully three-parts of the cattle are diseased with the same.

"Mr. Chisholm, flesher, Edinburgh, says, of late he has not observed any disease among the sheep he has killed, being all wethers; but he admits there are a great many flukes in their livers. It may be here added, that the above-named wethers were from the highlands of Scotland.

"Attested by GEORGE PEACOCK, Farmer,
Popple, East Lothian."

Professor Johnson delivered a lecture on the subject, which was published in the "Scotsman," January 30th, 1847; it was a perfect libel on the Dutch agriculturists. He stated that if a comparison of the returns of the quantity of milk yielded by the cows of France, Belgium, and the Netherlands was made, it would be found that those of England and Scotland yielded more than double that of the whole together, and also that the agriculture of Holland was at the lowest ebb; by this means he endeavoured to flatter his hearers, and carry away the eclât of a deluded audience. In 1829, 1830, and 1831, we had the benefit of the professor's lectures in England; at this period the grain was much affected by mildew, rust, smut, blasting, and yet he never told us how to remove the cause of these diseases, although he undertook to direct the public mind from 1832 to 1836, when there was a superabundance of grain, then he ought to have stimulated the governments to lay up a store of at least one hundred and fifty million bushels of grain, properly kiln-dried, to meet the crisis even then evidently pending. He should also have pointed out the various causes of the diseases above mentioned, and the best method of preventing them, which might have been readily done by a professor who thoroughly understood the subject. He ought to have told us that there were plenty of materials for rectifying the soil of Britain and Ireland, and pointed out what they were, and how they should be used. This was clearly known to Sir John Sinclair, Lord Lauderdale, and other patriots.

In 1837, I perceived that the potatoes and butchers' meat were becoming diseased, of which I thought it my duty to inform the Agricultural Society. I was asked the reason of this state of things, and what I would recommend as a preventive to it. I stated, that a hard pan had formed over the greatest part of the surface of the three kingdoms, that the ploughing was not sufficiently deep to break up the subsoil; that it was perfectly impervious to rain; and when the potatoes were planted, in the event of a fall of rain, especially in cold weather, the sets were sure to become diseased: that the grazing pasture was a perfect putrid mass, covered with all manner of poisonous weeds and insects, and that it would be impossible to raise a sound animal on English permanent pasture. That the time would soon come when there would not be a particle of healthy butchers'

meat, nor a potatoe fit to be consumed, unless the hard pan was broken up, and plenty of lime and salt applied, to neutralize the corrupt soil. The professor and his adherents, the bailiffs and stewards, became so enraged at my assertions, that they caused the greatest confusion to prevent my being heard.

In 1843, amongst the prizes offered by the Agricultural Society, was one for the best sample of butter from England or Wales. This commodity came pouring in from every direction; but when the day of inspection arrived, it stank so badly that the butter-merchants would not purchase it at any price, so it was disposed of for waste grease, at twopence per pound. Alas! what will posterity think of the attainments of the professor and his colleagues, who, after raising the expectations of the country, failed to raise a pound of good butter. The professor next proceeded to Scotland, for the purpose of teaching the poor ignorant inhabitants something of agriculture, upon sound, or unsound, chemical principles. Which was it? Let us see what he did teach them. He travelled over a great part of the cultivated lands of the highlands, where the hard pan was formed, and covered with all kinds of poisonous weeds and insects. He did not tell them that there had not been a sound sheep reared and sent to the markets of Edinburgh and Glasgow for fifteen or twenty years: nor did he inform them that the stones were rapidly absorbing the richest properties of the earth, which increase their bulk, so that in a few years they will be all at the surface of the earth. I would strongly recommend the professor and his friends to study "Keith on the Prophecies," and Mr. Mitchell's "Report on the Farming of Holland," in the Quarterly Journal of Agriculture, No. 13, page 17. There it will be seen that the Dutch obtained three shillings and eightpence per pound Dutch, or seventeen and a-half ounces English, whilst the English prize butter only produced twopence.

Notwithstanding the learned professor thought Dutch agriculture was in a low state, I will leave his admiring friends to form their views of his veracity. In 1735, when I visited Holland, they had by far the finest milch cows I ever saw. The professor was warm in his praise of the guano, by which we have imported such quantities of animalculæ, and when sown in the spring has produced a most extensive crop of poisonous insects. In the storm that was experienced in England and Scotland in July, the air was loaded with foreign insects, that partially obscured the rays of the sun, and they fell to the earth like hail. At that time the potatoe crop was very fine indeed, and were in full apple. We had been using them for ten days: they were mealy to the centre. Well, the professor's cargo of insects began upon them, and made great destruction. There was a yellow one, with crustaclous wings, the under one being yellow; it had six legs, the hind ones longer and larger than the others: the eyes were black; it both flew and jumped, and was the most active insect I ever saw. When it lighted on the stalks and vines of the potatoe, it pierced them very rapidly with its sting. I

did not succeed in catching any of them, although I offered rewards to boys in the neighbourhood. There were some of a blue, black, and green colour, belonging to the same family. I had seen the black species in New York in 1811, committing great ravages on the rye, which was the cause of the cholera morbus. When this disorder was raging, I went to Edinburgh, Glasgow, Greenock, and Dundee, to endeavour to discover the cause of it. I went to Apothecaries' Hall, and stated that I had come for the purpose of finding out the origin of this dreadful scourge. A number of doctors came in at the time for medicine, and some of them asserted that half the inhabitants were bed-ridden with scarlet fever, influenza, erisipelas, and cutaneous diseases. I went to Mr. Watson, the butcher, and soon found out the cause.

A bailiff had undertaken to send a large supply of fat sheep to London, and had imported a quantity of butter-cup, and other poisonous seeds, from Mark Lane, which, when raised and eaten by the cattle, diseased them to a great extent, and filled them with acid and acrid fat. These seeds were sown most extensively on the feeding grounds along the banks of a rivulet, which was filled with flukes. He brought some of the finest five-year-old sheep which were killed, some of them before the flukes were put to the feeding-ground, and were pronounced by the butchers to be the finest and most sound animals ever seen, particularly those from the mountains. When the sheep were put on the feeding-grounds abounding in these poisonous plants, they were attacked with violent thirst, and went to the rivulet and drank abundantly. There were quantities of flukes and tinea, that cause the staggers in sheep, and feed on their livers. When I inspected them, they were swollen to an alarming size. Those that were living when the day of shipment came, were found unfit to be sent to London, being in too diseased a state. Upwards of two hundred of them had been killed to regale the inhabitants of Dundee, which brought on the awful disorders above-mentioned. The sheep from the mountains were not in the habit of eating such poisonous food: just so with the Welsh sheep, when brought from the mountains and sent to Romney Marsh to feed, which destroys whole flocks.

Orfila, in his work on morbid poisons, when pointing out the deleterious properties of the Ranunculaceæ, observes, "It is well known that whole flocks have perished from grazing in the spring in pastures where the plant was common; that the different species of Ranunculaceæ and their extracts produce a severe inflammation of the texture to which they are applied; that death results from the sympathy existing between the part affected and the nervous system." We cannot wonder at the rapidly increasing ratio of insanity amongst human beings, when we witness the consumption of food, the product of animals fed on the most pernicious of the vegetable kingdom, if not so much so to animals themselves, yet to man destructive not only of the nervous system, but vitality. A gentleman of the

name of Blackwall introduced a white-faced brainless sheep, creatures incapable of choosing their proper food; they therefore fed indiscriminately on all kinds that came in their way, and, amongst other things, on wild poisonous plants, which bloated them up to a prodigious size, at least a hundred weight in a year. This highly-gifted bailiff was not sufficiently observant to notice that they are enormous eaters, so much so, that they consume treble as much as the black-faced highland or Welch breed. And what is the consequence? The digestion of the matter taken is not half perfected; and on making an analysis of their excrement, it was found to contain thirty-five per cent. of sugar and gluten: whereas, in that of the black-faced animal, these nutritive principles could scarcely be detected. The life of this breed is of short duration; in the course of two years most of them die of consumption. Then what must be the state of persons fed on the carcases of these horribly-diseased animals? It produces diseases analogous to those from which the animal suffers, only greatly aggravated, and putting on numerous modifications. It embitters their days, and carries them to an unexpected and untimely grave. Seven-tenths of the population are victims to its direful, sweeping effects. Scrofula, chlorosis, gleet, mania, and consumption, haunt them as their shadow. How truly might we say, "That in the midst of life we are in death;" when we not only live surrounded by the foul pestilences of an overcrowded city, but are victualled with disease itself. Look at the devastated state of this country! Look at her sister island, Ireland! Famine and death walking over the land, indiscriminate in their choice of victims, unsatiated with their exterminating glut. To what are they to look for relief? Not to the beggarly pittance of a monetary gift, but something permanent—something that will raise them far above the grovelling beings they now are, scarcely removed from a slothful reptile—feeding and sleeping till nature calls for more support. Oh! where is now the poetry of the Emerald Isle, her happy, blytheful sons, her daughters' merry laugh, her verdant green, her fruitfulness? The picture darkens! Now in their place are death and famine! And why is this? The patriarch of the soil has fled, and left his sons to perish—without aid, without advice: the scourge of heaven has followed, and chaos reigns! Take, therefore, the talent from the slothful servant, and give it to the good and faithful.

A want of knowledge of agriculture, horticulture, and the proper principles of medicine, has converted this once healthy and happy nation into a huge hospital. Misery and disease may be seen stalking through every street; and those who should advertise the remedy, and render every facility for its attainment, indifferently look at what is going on around them, and attribute everything to the unpropitious seasons. Are they not aware that climate, and even seasons, are greatly under the control of man. Let them compare the climate of the States, before such extensive clearings took place,

with that of the present day. A person uninitiated would hold it as incredible, until proved, on scientific principles, to arise from natural causes. What can we expect from remaining in this state of lethargy but the denunciation, the vengeance of an offended Deity. In the old world everything became corrupt in the sight of God, every law of nature became perverted, and, in his anger, he swept all from the surface of the earth, for he saw that "The wickedness of man was great, and that every imagination of the thoughts of his heart was only evil continually."

If we take a survey of the downfall of nations, there is not one instance where it cannot be attributed to the government subsiding into a state of indolent indifference, and the people becoming the votaries of luxury. A want of energy of both body and mind supervenes, institutions are neglected, every one is master, and no one fit to rule, until a crisis arrives, when a slight and last effort is made but to see themselves become dependant on some superior nation. Before such be our case, let us put forth every energy we possess; let us look into our institutions, examine if proper persons have the management of them: but, above all, let us try to sweep disease and famine from our blessed land, for from these arise every imbecility which renders us unfit for duties to which we are called. In every action let us follow the divine law, and take nature as our guide. Are not the works of God better for imitation than those of man? In one we have perfection, in the other imperfection. Nothing is created without an end; from the minutest animalculæ to the antediluvian Dinotherium. There is a connexion between all created things—

> "Nothing is foreign; parts relate to whole:
> One all-extending, all-preserving soul
> Connects each being, greatest with the least:
> Made beast in aid of man, and man of beast;
> All served and serving, nothing stands alone,—
> The chain holds on, and where it ends unknown."

I observed the murrain beginning to affect the stock in 1827, which was the first time I noticed it; and finding that all the naturalists and philosophers belonging to all the nations that have passed away, from the Egyptians to the present time, have failed to discover the cause, and therefore were unable to point out the means of prevention and cure;—believing, as I now do, that no calamity occurs, the cause of which cannot be discovered, and for which the Almighty has not only provided a preventive but a cure, (if he only open the eyes of man to behold the wonders of his law,) I set myself, in good earnest, to search out the cause or causes that had proved the overthrow of nations.

Various persons supposed the disease to be produced by different animalculæ in the air; so I got Mr. Dolland to make me a most powerful solar microscope, and various other glasses, which cost upwards of one hundred pounds, and tried every means, at home and

abroad, without coming to any satisfactory result. In 1843, a communication appeared in the papers, of rewards being offered by the legislature of the States of Ohio, Kentucky, Indiana, and Ilinois, which would be presented to any one who could discover the cause of this horrible disorder. I went to New York in 1843, when the disease was raging to a fearful extent. I drank some milk, and caught the affection. I took the most active measures to prevent its effects, Of all others, the Vapour Bath proved the most successful. I went to the milkman, to see if I could ascertain its origin. When he turned out the cows, I followed them, to see what they eat, and at once felt convinced that I had discovered the cause. I went to various places where the disease was raging, and found that I was correct. I proposed going to Cincinnati, in hopes of obtaining the prize. I took a Vapour Bath with me, and everything necessasy to put a stop to this horrible order. An English gentleman accompanied me, whose travelling expenses I took upon myself: he had lost eighty-six thousand pounds by the United States' bank. We called at the bank, as we passed through Philadelphia; and as I had lost fifty thousand dollars by the same concern, we tried all in our power to get a sight of the account books, which was actually refused, leaving but little hopes of our ever getting even a dividend. The "New York Herald," previously to this, had given sufficient information that they were bamboozleing the public out of their money.

We started for Cincinnati, and after sailing down the Ohio river, we saw but two wild ducks. Forty years before, the whole of that interesting country literally swarmed with game; but the murrain had made it still as death. The various passengers which we took in on the way afforded me much valuable information respecting the devastation the murrain had made in the country. The pheasants, which used to be innumerable, had eaten of the dead carcases of the stock that lay scattered over the woods, and the brooks and rivers, which never failed to destroy them. The barn-door fowls, especially turkeys, geese, and ducks are also sure to be killed by such food.

On our arrival at Cincinnati, we wrote to the four governors of the State, telling them that I had discovered the cause and cure of the murrain, and therefore claimed the prize. No notice being taken of the application, it was repeated several times, but only producing the same result. An honest Scotchman, knowing our situation, told us that if we had even a thousand letters of introduction, it would have no more effect than the fifty we had already produced, as the directors of the matter had their own relations to look to, who expected to gain the reward.

I prepared to return. Every scheme that could possibly be devised was planned to get the knowledge from me: but I was in no humour to gratify their curiosity, as I had lost seventy thousand dollars by the United States' Bank and the Baltimore coupens. Dewit Clinton, Governor of the State of New York, knowing the great benefits

I had conferred upon New York, Vermont, Albany, Maryland, Pensylvania, Baltimore, Agunta, and the rice plantations, by stopping the progress of the cholera and yellow fever, and discovering the cure for the bite of serpents and mad dogs, observed, at the St. Andrew's Society dinner, when called on for his toast, "That it was his practice to drink the health of the greatest benefactor of his country. Since Mr. Whitlaw had put a stop to the yellow fever, he had conferred the greatest benefits on the inhabitants of the United States. He found, also, by reading the Report of the London Committee, that Mr. Whitlaw had also been a blessing to his native country by the cure of scrofula, that scourge to the human race, hitherto considered incurable. This had been proved a correct statement by Dr. Ireland, and others of that city. Mr. Whitlaw had, by his lectures on botany, proved to a demonstration, that all minerals, acrid and corrosive vegetables, could be dispensed with in the cure of disease. That gentleman had, by his lectures on agriculture and horticulture, improved the produce of the United States, and, by these means, the comforts and luxuries of life. He considered that, next to General Washington, Mr. Whitlaw was the greatest benefactor to that country. He, therefore, would propose the health of Mr. Whitlaw."

When I put a stop to the cholera morbus at Albany, Dewit Clinton told me that I was intitled to a great reward, but at that time being pressed for money, in consequence of being at war with England, he advised me to wait until the peace, when my claims on their gratitude would be suitably acknowledged. In the mean time I resolved to do all I could to prevent that awful scourge from accruing again, by giving the farmers information how to prevent it. By my Lectures at that time I had obtained a considerable sum of money, which I laid out in the United States' Bank and Baltimore Coupons, to the amount of seventy thousand dollars.

I then travelled to the West Indies and Spanish Main, and was everywhere received as a benefactor to the human race. On my return, for the money invested, I was put off with fair promises. I do not appeal as a beggar, I only ask for my own hard-earned property, and as one who in his day has done much for the health and happiness of their country, next to Washington, I trust my appeal will not be made in vain.

I can safely appeal to the philanthropic inhabitants of New York, who have paid all their debts, and shown themselves grateful for favours received, as well as the other States, and hope they will see that I am paid the whole or part of the money that the Legislatures and the Bank of the United States are indebted to me.

OBSERVATIONS

On the Cultivation, &c, of the Potatoe.

In my observations and travels in America, and the West Indies, my attention was particularly directed to the cultivating, preserving, and cooking of the potatoe, so as to deprive it of its acrimonious properties, for which I received a medal from the Society of Arts in London in 1814; since which time I have paid great attention to, and carefully watched, the cultivation, disease, and decay of this valuable article of food,

The genus Solamun is a very poisonous one, but like other narcotics, when properly cultivated and preserved, and cooked, makes the best of food, when the narcotic principle is evaporated; cooking the potatoe in the sea water deprives it of this principle and is the best method, as the poison is completely evaporated and the skins become black. The next best method of cooking them is roasting; the potatoe should be chipped or scraped, to allow the narcotic and dangerous property to evolve more effectually: the common method of dressing them is that of boiling, in this case also they should be chipped or scraped, and a handful of salt thrown in, if they are mealy, add a little cold water to check the boiling, or the outside will be cooked and the inside remain hard.

The water in which potatoes are boiled, should always be thrown away; I have known cooks put it into the swill-tub and poison the hogs: I have seen after the dung has been removed from a farmyard, potatoe stalks covered over at the bottom, a heavy rain falling at the time soaked the stalks, and a sow with a fine litter of pigs who drank of this water were all killed. Farmers should burn all such poisonous stalks, as they canker the soil, and frequently when other potatoes are planted, both the potatoes and the soil become diseased.

The Irish have been acquainted with this fact for many years, they plant their potatoes in beds like asparagus, across the bed, and two spades depth on each side; with this earth the potatoes are covered, and it answers two purposes, that of allowing the water to sink, and of freshening them with new earth. Lime and salt should be liberally applied to the soil, it should also be trenched from eighteen inches to two feet in depth, to allow the water to sink and run off: by drains, land-springs, and rivers there will be less rain, and the finest potatoes are produced in their vicinity. Any sort of manure is bad for potatoes unless composted with lime, particularly pigs' dung and street manure.

In 1826, a very hot season, the potatoes in the neigbourhood of Dublin were planted with street manure and the produce of common sewers; this method brought on typus fever to a dreadful extent; sixty thousand cases passed the hospitals besides those in private habitations. (See the Report to the House of Commons.)

Peat earth, when combined with sand, loam, and lime, is excellent for rearing potatoes; they should also be planted in new earth, and gravel, chalky, marl, slate, and mountain soils, as they are then very mealy and wholesome. If grown in a clay soil, they are liable to produce typus fever; but when grown on proper soils they are really valuable, not only in their natural state, but for the starch that may be extracted from them, and is a good substitute for that made from the various grains.

To obtain this flour, the potatoes should be first macerated, then soaked in water until the liquor is tasteless; when sufficiently dry, sift then in order to separate the gluten from the starch, it will be found perfectly wholesome, and as well adapted for pastry as wheaten flour; it resembles arrow root, and is frequently sold for that article; it is well adapted for gruel and other purposes to which arrow root is applied, and when boiled in milk, makes a light and wholesome food for invalids.

In the process of boiling the potatoes, as the poisonous or nightshade quality is so blended with the starch and gluten, it is necessary to pour off the water and hang the pot over the fire to allow it to escape. When boiled, the starch and gluten cannot be separated by any chemical process, so as to produce the flour and gluten afterwards.

In France there are large factories for making this flour, which is readily bought by the people for the above named purposes. The American Indians, from whose county the potatoe first came, never use them unless prepared as above.

If the potatoe was grown on low grounds in the torrid zone, and eaten as it is in England and Ireland, it would prove a most virulent poison; even in the Southern States of America, the heat of the weather causes them to become green, and, when put into the mouth, taste like verdigris, and blisters the skin, which proves the plant to be of the class of narcotics, and acrid, and corrosive poisons.

There are other poisonous plants widely diffused over the globe, which, when deprived of their acrimony, make the best of food, such as the Jatropha, Manihot, or Cassava; the juice of which is the most deadly poison, it sits lightly on the stomach, and is well adapted for persons suffering from indigestion. The Maranta, Arundinasea, or Arrow Root, when deprived of its acrimony, is excellent food. There are no less than one hundred and forty of the Salaneæ described, exclusively of those recently introduced from South America, New Holland, and other places; some of the species have been highly important in human economy, as the potatoe, (Solanum Tuberosum),

introduced into Europe from the mountaneous parts of Peru, in 1590, according to Bankin.

The Solanum, Melongeno, or Egg Plant is cultivated in Asia, Africa, and the warmer parts of America and Europe. The Solanum, Anguivi, of Madagascar, is also an excellent fruit. The Solanum Cabrian of Peru is a fruit like an orange, and used as a substitute for soap in washing and shaving, and leaves a softness, and freshness, even superior to soap; in fact, the economical uses of this important family of plants are but little known.

The Pseuda Capsicum of Madeira, familiar to all, which is cultivated for the beauty of its fruits resembling scarlet cheries.

The Solanum Lycopersicum, Tomatoe or Love Apple, indeed the whole tribe may be considered as Love Apples, as they have been the cause of the lower orders propogating to such an extent that it must alarm every thinking man.

It will be proper to examine into the effects of the Solanaceous tribe on the human race, physically, mentally, and morally. Although they have been introduced upwards of two hundred and fifty-six years, their cultivation, preservation, and the expulsion of the beforementioned acrid qualities have been but little understood; hence the destructive effects upon the constitution of mankind.

The Egg Plant, or Mad Apple, as well as the Tomatoe, is much used in Turkey, Spain, and Portugal, principally for soups and sauces, and is accounted very nutritious, and is eagerly sought after by the votaries of Venus; but mark its effect upon the Turkish Empire, once so powerful, but now the inhabitants are reduced to the most degraded state. The Spaniards, once upwards of twenty-five millions of people, the terror of Europe, are now reduced to ten millions. Rome is worse. Portugal also has rapidly declined. The use of Mad and Love Apples, has reduced them from their former state of grandeur to their present degraded position.

I will now take a view of the effects of the potatoe upon the inhabitants of this kingdom. When it was first introduced into Britain and Ireland, the condition of the soil and climate were much better adapted for the culture of it than it is at present; a large portion of the country being covered with forests, the roots of the trees penetrating deep into the earth, and being blown about by the wind, caused the rain to sink into the ground, and run off by land-springs and rivers, which relieved the land of the superabundant moisture, which relief is necessary for the culture of the potatoe.

In Peru it seldom rains, and the sun is sometimes invisible for nine months in the year, dews supply the place of rain; the potatoe requires heat, but little moisture: hence a dry soil is necessary for its proper cultivation.

In the Island of Thanet, the farmers cart sea weed and mud from the harbours, which mixed with clay, the cleanings of ditches, and sea water, has produced the finest potatoes and other vegetables in

the world; the whole Island is chalk and flint; when the former is burned and deprived of its carbonate acid, and mixed with compost, it neutralizes the poisonous properties of the Solanaceous and unbeliferous plants. The acrimony contained in carrots, parsnips, turnips, cabbages, and all the Brassicaceœ, is carried off by using this compost to the soil. Every farmer in the kingdom can imitate this compost by the use of salt and lime. Peas and beans raised on this soil are delicious, and all fruits and vegetables are improved by it; if this system of dressing the land had been adopted throughout the kingdom, such disasters as I am about to relate would never have happened.

In the county of East Lothian, where I was born, the clergy would not allow any to marry under twenty-five years of age; and such was the state of morality, that for sixty-five years prior to 1790, there were but five cases of bastardy in the parish of Gifford, out of a population of 2,000. The young folks regarded each other as brother and sister, and any transgression of the laws of morality was visited with excommunication and the contempt of the whole community. There were even rules in their benevolent societies, excluding all such as unworthy to become or continue to be members. Had government and the clergy encouraged such policy, the results now would be far different. Great praise is due to "The Times" proprietors, for sending a commissioner to inquire into and report the state of affairs in Ireland, of both Protestants and Catholics. The majority of the latter exist almost entirely on what Cobbett calls "Ireland's lazy root," and live in filth, misery, and idleness, always ready to launch out into any murderous crusade, not only against those who differ with them in religion, but also their own partizans, friends as well as foes.

In the United States, murders are as frequent as in Ireland, and without the law being able to bring them to punishment. They have quarrelled with the government of the State of New York about paying their rents and debts, and when the sheriff attempts to levy on their goods, they shoot him as they would a dog.

I will give an account of an occurrence that took place at New York, of which I was an eye-witness. A large vessel, with about five hundred Irish on board, sailed for New York in the month of July. They arrived in Long Island Sound short of provisions. When the paddies got near the land, they wanted to go on shore. The quarantine laws were strictly enforced, and the captain told them of the risk both he and they run if they violated them. They cared not a fig for the law, and attempted to seize the boat, determined to go on shore. The captain and officers being armed, shot two of them, which quieted the rest for the day. On the following morning the vessel was anchored at Hellgate Ferry, and when they were hauled alongside the quay, all went on shore. It was a very hot day in the month of August. The Irish who worked for me, on a very fine estate there, treated them to some rum, and went with them into the

city, to a street inhabited by Irish, abounding in grog-shops, where they again began drinking. One of the magistrates told them they had brought themselves into a terrible situation by rebelling against the captain, and violating the quarantine laws. One of them immediately roared out, "Patrick, it was your fault." "You are a liar," replied the other, dealing the accuser a tremendous blow on the face with his fist. The whole body of them then commenced in true Irish style—men and women, the latter with their hands full of hair, torn away in the affray, and shrieking most dreadfully. The blows were dealt so effectually, and being mad with drink, that in a very short time nearly all of them were rolling in the streets. Some of the townspeople informed the corporation, who were then sitting, the state of affairs. Many of the members proceeded immediately to the scene of action, and I believe such a sight had seldom been seen by them before. It was nothing but a mass of people lying on the ground, with scratched faces and bloody noses, vomiting and tearing the clothes off each other. Many of their countrymen were running about with bottles and glasses, treating them to liquor, and stimulating them to re-commence the affray, by pointing some out to others as the cause of the mischief. The battle began afresh, and continued until they were all prostrated on the ground again, when the mayor arrived with the police, and had some conveyed to the hospitals, some to the poor-house, and some were taken home by their friends. Those who worked for me returned on the following day, with broken faces.

I met a highly respectable Quaker, who had seen the wreck of the fight: he exclaimed, "Friend Whitlaw, it makes my heart ache to see this fine country brought to ruin, as it soon must be, as those fellows, the steerage passengers, will get the upper hand of us; and they are, for the most part, the scum of Europe, and headed by their priests and infidels: and woe be to the country where they bear rule."

I will now endeavour to give the true reason of the miserable and debilitated state of these people. What a difference between the Protestants and the potatoe-eating Catholics! How very superior the former. They are, in every respect, the best subjects in her Majesty's dominions.

The typhus fever, a disorder brought on by the use of the beforementioned poisonous substance, is a species of continued fever, characterized by great debility, a tendency in the fluids to putrefaction, and all other ordinary symptoms of fever. It is readily distinguished from the inflammatory by the smallness of the pulse, and the sudden and great debility which takes place on its first attack; and in its more advanced state by the petechiæ, or purple spots, which come out on various parts of the body, and the fœtid stools which are discharged. It may be distinguished from a nervous fever by the great violence of all its symptoms on its first coming on.

On the first appearance of the disease the person is seized with

languor, dejection of spirits, amazing depression, loss of muscular strength, universal uneasiness and soreness, pains in the head, back, extremities, and rigors; the eyes appear full, heavy, and yellowish, and often inflamed; the temporal arteries throb violently; the tongue is dry and parched; respiration is commonly laborious, and interrupted with deep sighing; the breath is hot and offensive; the urine crude and pale; the body costive, and the pulse unusually quick, hard, and small, and sometimes fluttering and unequal; sometimes a great heat, load, and pain are felt at the pit of the stomach, and a vomiting of bilious matter ensues. As the disease advances, the pulse increases in frequency, beating often from 100 to 130 per minute; there is great debility, heat, and dryness in the skin; oppression at the breast, with anxiety, sighing, and moaning; the thirst is greatly increased; the tongue, mouth, lips, and teeth are covered with a brown or black tenacious fir; the speech is inarticulate and scarcely intelligible; the patient mutters much, and delirium ensues. As the fever increases in violence, symptoms of putrefaction show themselves; the breath becomes highly offensive; the urine deposits a black and fœtid sediment; the stools are dark, offensive, and pass off insensibly; hemorrhage takes place from the gums, mouth, nostrils, and parts of the body; the livid spots, or petechiæ, appear on its surface; the pulse intermits and sinks; the extremities grow cold, hiccups ensue, and death at last closes the scene.

The appearances usually perceived on dissection, are inflammation of the brain and viscera, and more particularly of the stomach and intestines, which are sometimes found in a gangrenous state: in the muscular fibres there appears a strong tendency to gangrene.

This awful disorder, so destructive in Ireland, is chiefly caused by living upon potatoes, which, like the mad apple and tomatoe, from its severe action on the brain, causes the consumer to pursue unlawful excesses, to the ruin of his constitution. I have known many of the youth of America, who were fond of these plants, in the hot weather pursue sexual intercourse until the faculties of the mind were prodigiously impaired; the sight became so weak that recognition failed, as well as the taste and smell, attended with extreme debility: the nervous, typhus, and putrid fevers followed in their train, and on dissection the appearances were as before described.

The prevalence of insanity in Ireland, indeed, to take the disorder in its strictest application, (four-fifths of them ought to be put into straight jackets,) must be attributed to the same cause. The character of the Irish generally is of a degraded nature; and yet these are the men for whom Mr. O'Connell so loudly calls for repeal, and to be entitled to give votes for members of Parliament. I think, with the knowledge I have of their character, I would as soon give the privilege of voting to the inmates of the various lunatic asylums as to them. I have frequently seen the most disgraceful scenes at the elections in America caused by the Irish; the atmosphere, even at a distance from the polling place, was tainted by them; and the

drunken wretches were dragged up to vote by the basest of mankind. I entertained great hopes that Father Mathew would have produced a permanent reform amongst them; but I am sorry to find many of them have already broken their solemn pledges, as they do their thumb-oaths taken in a court of justice.

The acrimony and narcotic contained in the solanaceous tribe create an unconquerable desire for ardent spirits in this country.

I will here give a short description of the Scotch about sixty years ago. In the agricultural districts, the unmarried men worked on the farm, lodged and boarded in the house; their food was of the most wholesome and strengthening description, with wages from £14 to £20. a-year, hence the robust and powerful men produced in that time: the married men had each a can, a sufficient quantity of barley and oatmeal, as well as flour and peas, with which they could supply a family of six or eight persons. The hind was allowed £6. or £8. a-year, and to keep six sheep, the wool of which was manufactured into clothes for the family; they also had a piece of land which was manured with the dung from their cows and pigs, and they grew what they pleased upon it; they sometimes grew flax, which the mothers and daughters converted into sheets and shirts; the good dame always provided a stock of blankets and sheets as a dowry for the daughter when she married, and frequently enough to last for life; the sale of their butter brought in a considerable sum of money; the young children in spring were set to weed the grain.

For the supply of the cow, they cut grass from the headlands, hedges, and banks of ditches, which produced an abundant supply of milk for the family, as well as a sufficiency for the pig. The ewes were milked after lambing, and when the produce was mixed with the milk of the cow, made excellent cheese: three ewes were usually fattened for winter, killed and salted, and made excellent soup, the fat of the sheep was melted down and made into a large cake, which when properly salted, served for frying herrings, and making brose when the cow was dry. Every cottage had a garden, from which could be raised more vegetables than the family required, as well as supplying the pig, and the cow when she calved in spring.

The children, as I before mentioned, were set to weed the grain, and as they grew up, to hoe turnips, and hay-making, and to take part in the labours of the harvest, they could earn from £7. to £12. each, according to their age, per year. At this period the Scotch peasantry were a most happy and contented people. I cannot do better than refer my readers for a description of their rural happiness and innocent amusements, to the poems of Burns, particularly the "Twa Dogs," and the "Cotter's Saturday Night."

A woeful change has taken place since they have become potatoe eaters, and whisky drinkers, and if this sort of diet is not speedily changed, they will soon become as bad as the Irish. For the extreme misery of the potatoe eaters in Edinburgh, Glasgow, and other

towns, see the Report of the Commissioners, medical men, and philanthropists, a more awful description could not have been given. We shrink with horror when we hear of the Chinese putting their children to death, or the Hindoos making eunuchs of them. The American Indian women, when they are too prolific, take a certain drink which prevents procreation, and as they say, prevents also the trouble of bringing up the children, two most rational modes of checking excessive population, and far better than sacrificing them to Moloch, or crushing them beneath the wheels of Juggernaut, burning widows on the funeral pile, or drowing them in the river.

The system of feeding the people on such food as the potatoe, is the most dangerous ever adopted, and poisoning them with mercury, antimony, and all kinds of mineral and vegetable, acrid, and corrosive poisons, diseasing their bones, and every joint in their bodies, making life burdensome, and keeping them in continual torture, increased by every change of the weather. The Catholics should dispense with purgatory, as any one who suffers from this system of the poison-mongers has torture enough in this life.

The north of Ireland, Scotland, and England are now suffering from the system of allowing the land to remain in a state of permanent pasturage until the soil has become corrupt, and covered with poisonous weeds and insects, which destroy the stock as well as the people; the earth being in so bad a state, becomes covered with mosses and fungi, and the potatoe vines surrounded by insects: when the juice begins to exude, the seeds of these mosses and fungus are blown about by the wind, and adhere to the juice, and strike their roots into the stems and leaves, making them curl up, what the farmers term being effected with the curl.

In order to prevent the disease affecting the potatoe, I may observe, when land has laid in a permanent pasture until a hardpan is formed, when they break the soil up, they do not go through the hardpan, and when potatoes are planted on it, and rain falls shortly after, it is sure to disease them, particularly if the weather is cold. The land should be trench-ploughed or done with spades, from fourteen to eighteen inches deep, that the water may penetrate, and then lay on from eighty to one hundred bushels of lime to the acre, and make the following compost:—take two thirds fresh cow dung, one third lime, and a little salt, put them into a tub and stir them about with a stick, endeavour to make as much of the morter adhere as possible; take a shovel with holes in the bottom, and lift the sets out of the tub, the superabundant mortar will run through, then lay them on a floor or in the sun to dry before planting; the lime will destroy the seeds and eggs that are deposited in them, and prevent the worms and insects attacking them in their young state, this method will insure the finest crop of potatoes.

Had my advice been taken in 1837, when the distress first took place, it would have done much good. I stated my views that when grain was in pleny and cheap, the government ought to have laid up

150,000,000 bushels in store, which might easily have been done, from 1832 to 1836, and had the routine cropping and soiling system, which I then recommended, been adopted, there would be at least ten million stone of meat more in the country than there is at the present time; the routine cropping is the only plan that will bring back the land of this country to a healthy state, as it is well known that nine-tenths of the stock in England and Wales are more or less diseased, in consequence of the bad agricultural policy that has been pursued for so many years; we have lost twenty-five per cent. of all our stock by the murrain.

In April, 1846, having been laid up for twelve months with mortification in the right leg, (it commenced in the left) which was deemed incurable by thirteen of the first medical practitioners in London: I went to Garvald Kirk, East Lothian, in order to recruit my health, and with my own bath and medical treatment made a perfect cure of myself. I arrived in East Lothian the latter end of April, during very hot weather, a thunder and lightning storm came came on, which destroyed nearly all the insects common to this country, such as plant lice, spiders, flies, caterpillers, and musquitoe gnats; the crops after this storm were the finest I ever saw, particularly the potatoe. The storm that visited London in July was felt in Scotland about a week after, the clouds were loaded with foreign insects, no doubt brought into this country with the guano; the previous mild winter had caused them to hatch in such numbers, that when drawn up into the air by the power of attraction, they completely obscured the sun's rays, and produced a darkness never before witnessed. It rained caterpillars and short white snails, which attacked the young clover in the fields, and destroyed the crop. There was an insect with yellow crustatious wings, the under ones were clear, and the muscles yellow; it had six legs, the hinder ones longest; large black eyes, and was armed with a sting, with which it wounded the leaves and vines of the potatoe, upon which it appeared chiefly to feed. Had they attacked the grain generally, famine would have been the inevitable consequence. The poison injected into the vines and leaves of the potatoe descended into the bulb in a few days. Had the vines been cut, the crop would have been saved. A niece of mine preserved those in her garden, by watering them with soap-suds and soda. The farmers cannot expect to raise good potatoes, unless they break up the hard pan on the land, and dress with lime and salt, as before stated.

I here insert the letter of the Police Advocate of Amsterdam, believing his opinion must have great weight with the government of this country:—

"Amsterdam."

"Dear Sir,

"My protracted silence is far from being the consequence of my

having forgotten your desire and my promise, but is, on the contrary, owing to my wish of communicating some particulars worthy of your notice. I hope the present communication may by you be deemed not wholly undeserving of your attention, while at the same time I request you will be pleased to regard the matter more than the manner, as my numerous occupations and my want of practice in English composition will plead for any deficiency of style. I shall not confine my observations to Holland, but rather extend them to the European continent.

"Richter has written an excellent work, entitled 'De Cura Magistratus Circa Valetudinen Civium.' He speaks of an epidemical disease in France, after a similar sickness had prevailed among the sheep, which afflicted all who had eaten of the mutton. Behrens, another writer, mentions a case of the death of a whole family, who had drunk the milk of a cow bit by a mad dog. The 'Gazette Littéraire' of Berlin, of the year 1765, Number 84, relates the death of some persons with all the symptoms of being poisoned, by eating the meat of cattle which had died of disease. Similar accounts are found in the 'Histoire de l'Académie Royale des Sciences' of the year 1707, p. 29; 'Paulets des Maladies Epizootiques,' p. 151; 'Mémoires de la Société Royale de Mèdicine,' year 1776, p. 110; 'Instructions et avis aux Habitans des Provinces Méndionales de la France, sur la maladie putride et pert; lentielles qui dé troit le betail, public par ordre du Roi.'

"It is not my intention to go back to Hippocrates (Epidem. 6, Sed. 5, Text 34), who asserts, that the milk of a woman who had eaten of the wild cucumber plant, or even of a goat in the same case, is highly dangerous; nor to Galen, who relates that numbers of persons were affected with convulsions after having eaten of fowls which had fed on poisonous herbs: but numerous examples are extant of the milk having become poisonous after the cattle had eaten of the Gratiola or Tithymalus. Yet as I do not feel myself inclined to swerve any longer from my own circle, I shall leave this question to your own investigation, and barely confine myself to give you some account of the divers laws given in this respect, without binding myself to any geographical or chronological order, but noting them as they offer themselves in the books I now have time to consult.

"A Prussian ordinance of the 13th April, 1760, prohibits the killing of diseased cattle without examination of the local authorities. Similar prohibitions exist in Hanover of the 30th September, 1716; in Anstria of 1753; in Saxony of the same year. The old Hanoverian law enacted: Quicunque carnifex excesferit ex eo, quod rendiderit carnes non legales, primo dabit civitati duas marcas bremenses argenti et carebit civitate per dimidium annum; *i. e.* if a butcher shall commit a misdemeauour by selling illegal meat, he shall forfeit two Bremen marks of silver, and be deprived of his citizenship for half a year. The 'Code de Police es France,' tom. 1, tit. iv., p. 108, contains a legislative regulation with regard to pork; and there are decrees of the Parliament of 23rd January, 1602, and 2nd July, 1607,

in this respect. In Brunswick there is a prohibition against feeding of pigs with human excrements.

"There is a very remarkable ordinance of Brunswick Lunenburg, containing in the first place, provisions concerning the milk of diseased cattle, and next, prohibiting any cattle to be slaughtered until an examination of health have taken place by two members of the municipality, assisted by two seniors of the butchers' corporation. This ordidance is of the 31st March, 1732. The instructions for the examination of the cattle are very ample, and concern the eyes, the motion, the rumination, the temperature of horns, ears, mouth, and nose, the existence of any cutaneous disease, &c. A similar inspection is ordered after the cattle is slaughtered. Precautions worthy of imitation in times of disease.

"You may find, also, measures of precaution ordained with regard to poultry, in the 'Code de Police,' T. I. p. 106. By an ordinance of the Parisian police of the 20th April, 1742, all those who keep cows, goats, or asses for the milk, are prohibited from feeding them on unwholesome food, and a fine of two hundred livres is forfeited by the transgression. By the above-mentioned ordinance of Brunswick Lunenburg, it is forbidden to sell the milk of cows once diseased until they have been inspected, and until their complete recovery has been ascertained. The same ordinance mentions as a criterion of unwholesome milk, the yellowish red of the colour. In Frankfort, the importation of milk from places where distempers prevailed among the cattle, was declared a crime, liable to corporal punishment.

"With respect to corn, it has been ascertained, that its growing together with Raphanum raphanistum, Bromus secalinus, and Lollium temulentum, has produced the most serious consequences. Galen's assertion is confirmed by the experience of Linnæus. The Royal Academy of Sciences of Paris published a report on this subject in 1676, and several leislative measures were taken to prevent the dangers which might thence result.

"The States of Holland and West Frisia published a statute on the 12th April, 1732, in many respects similar to the Brunswick Lnuenburg ordinance. The same States prohibited the importation of cattle without a certificate of health. They likewise declared the mere fact of selling diseased cattle, or offering the same for sale in a public market, a criminal deed, liable to bodily punishment. The municipal government of Rotterdam ordered the most rigorous inspection of all cattle before being slaughtered. Similar precautions were taken by the municipality of other cities of Holland.

"I have here only offered you a very rough sketch of divers legislative measures on that subject, which has been so incontrovertibly established by your philanthropic efforts. I have now only to add my apology, for not having the leisure of furnishing you with any thing more perfect.

"Believe me, dear Sir, with unfeigned esteem,

"Yours very devotedly,

"To Mr. C. Whitlaw." "W. RUMANN."

LECTURES ON MEDICAL SCIENCE,

Delivered to the Students of the Botanico-Medical College of Ohio,

By A. CURTIS, M.D.

PROFESSOR OF THE THEORY AND PRACTICE OF MEDICINE, ETC.

[The Lectures of my highly respected friend, Dr. Curtis, are too valuable not to be more extensively known, and I venture to reprint them for the information of the English Public.]

INTRODUCTORY LECTURE.

GENTLEMEN,

Presenting myself before you as an advocate of Medical Reform, it is manifestly my duty, first, to prove that Medicine, as it is generally taught, understood, and practised, is not what it should be. The evidences on which I may safely rest this proposition, are the concurrent declarations of the most enlightened professors and practitioners of medicine in modern times, and the innumerable failures of the practice, daily witnessed by us all, in cases in which we ought to expect success.

The denunciations of Medical Theories and Practices, by professors and practitioners, are both general and particular. Permit me to present to you a few examples of each class.

1. GENERAL DENUNCIATIONS OF MEDICINE.

SYDENHAM.—"Physic," says Sydenham, "has ever been pestered with hypotheses, the multitude and precariousness whereof, have only served to render the art uncertain, fluctuating, fallacious, mysterious, and in a manner unintelligible." * * "Certain it is, that not a single medicine has been discovered by their assistance, since their introduction into physic above two hundred years ago, nor have they let the least light into the affair of administering medicines properly in particular circumstances; but rather served to bewilder us, to perplex practice, and create disputes that are never to be decided without recourse to experience, the true test of opinion in physic."—Preface, page 5.

"Our misfortune proceeds from our having long since forsook our skilful guide, *Hippocrates*, and the ancient method of cure founded upon the knowledge of conjunct causes that plainly appear, insomuch that the art which is this day practised, being invented by superficial reasoners, is rather the art of *talking* than *healing*."—*Ib.* page 14.

Dr. Brown, who studied under the famous Dr. William Cullen of Edinburgh, lived in his family and lectured on his system, (a system that has had as many advocates and practitioners as any other of modern times,) says, in his preface to his own works, "The author of this work has spent more than twenty years in learning, scrutinizing, and teaching every part of medicine. The first five years passed away in hearing others, in studying what I had heard, implicitly believing it, and entering upon the possession as a rich inheritance. The next five, I was employed in explaining and refining the several particulars, and bestowing on them a nicer polish. During the five succeeding years, nothing having prospered according to my satisfaction, I grew indifferent to the subject; and with many eminent men, and even the very vulgar, began to deplore the healing art, as altogether uncertain and incomprehensible. All this time passed away without the acquisition of any advantage, and without that which, of all things, is the most agreeable to the mind, *the light of truth;* and so great and precious a portion of the short and perishable life of man was totally lost! Here I was, at this period, in the situation of a traveller in an unknown country, who, after losing every trace of his way, wanders in the shades of night."

I would here remark, once for all, that I do not always agree with the authors in all the sentiments quoted. I receive no man's mere opinions as infallibly true, till I have demonstrated them by evidences that will not admit of a doubt. For example, I cannot admit with Dr. Brown, that he "had spent all that time without the acquisition of any advantage." He had discovered many a valuable fact for future use. If he had not learned, directly, what medicine was, he had discovered, indirectly, what it was not; and thus narrowed the limits of his fruitless researches, as well as stored up experience as the foundation of his future medical philosophy. I shall hereafter have occasion to show that such conclusions are very injurious to the mind that draws them.

Dr. J. Abercrombie, Fellow of the Royal Society of England, of the Royal College of Physicians in Edinburgh, and First Physician to His Majesty in Scotland, says, "There has been much difference of opinion among philosophers, in regard to the place which medicine is entitled to hold among the physical sciences; for, while one has maintained that it 'rests upon an eternal basis, and has within it the power of rising to perfection,' another has distinctly asserted that 'almost the only resource of medicine is the art of conjecturing.'"

D'Alembert.—"The following apologue," says D'Alembert, "made by a physician, a man of wit and philosophy, represents very well the state of that science." 'Nature is fighting with disease; a blind man armed with a club, that is, a physician comes to settle the difference. He first tries to make peace. When he cannot accomplish this, he lifts his club and strikes at random. If he strikes the disease, he kills the disease; if he strikes nature, he kills nature.'" "An eminent physician," says the same writer, "renouncing a prac-

tice which he had exercised for thirty years, said, 'I am weary of guessing.'" Dr. Abercrombie continues—

"The uncertainty of medicine which is thus a theme for the philosopher and the humourist, is deeply felt by the practical physician in the daily exercise of his art."—Intel. Pow., page 293.

Gregory.—"All the vagaries of Medical Theory," says Dr. Gregory, of London, "like the absurdities once advanced to explain the nature of gravitation, from Hippocrates to Broussais, have been believed to be sufficient to explain the phenomena, [of disease,] yet they have all proved unsatisfactory."—Practice, page 31.

"The science of medicine has been cultivated," continues Gregory, "more than two thousand years. The most devoted industry and the greatest talents have been exercised upon it: and, though there have been great improvements, and there is much to be remembered, yet, upon no subject have the wild spirit and the eccentric dispositions of the imagination been more widely displayed. * * Men of extensive fame, glory in pretending to see deeper into the recesses of nature than nature herself ever intended; they invent hypothesis, they build theories, and distort facts to suit their ærial creations. The celebrity of many of the most prominent characters of the last century, will, ere long, be discovered only in the libraries of the curious, and recollected only by the learned."—Page 29.

I must here add that Dr. Gregory's statements respecting medical theories, are endorsed by his American editors, Professor Potter, of the University of Maryland, and S. Calhoun, M.D., Professor in Jefferson Medical College, Pennsylvania. They are therefore sanctioned by the famous school of Baltimore, which disputes with the Pennsylvanian, for the honor of being ranked the first in the United States.

Dr. James Graham, the celebrated Medico-Electrician of London, says of medicine, "It hath been very rich in theory, but poor, very poor in the practical application of it. Indeed, the tinsel glitter of finespun theory, or favorite hypothesis, which prevails wherever medicine hath been taught, so dazzles, flatters, and charms human vanity and folly, that, so far from contributing to the certain and speedy cure of diseases, it hath, in every age, proved the bane and disgrace of the healing art."—Page 15.

Dr. T. J. Todd says, "Medicine has never yet known the fertilizing influence of the inductive Logic."

Hannemann.—In Germany, the most intelligent and experienced physicians have been long convinced that the administration of heroic medicines, is not the true divine art of preventing and curing disease; and their late writers, among whom Hannemann stands pre-eminent, have undertaken to reform the old practice, so far as to administer with a cowardly, instead of a heroic hand, the ten millionth part of a grain of poison, instead of two hundred and fifty grains.

Lieutaud.—Of the Parisian School, in the last century, Dr. Joseph Lieutaud, Physician to Louis the 16th, &c., said, in his

Synopsis of Medicine, page 1, that, in what had been written before his day, he found it "difficult to disengage certainty from uncertainty, and to seperate the useful from the trivial. Hence many of no mean rank have doubted whether it would not be *better to give up the undertaking*, and confine themselves to new observations, out of which, when well investigated and arranged, there might be produced a *sounder theory*. I will leave this to the more learned, and only candidly and briefly publish what I have collected from a practice of thirty years."

For such opinions and actions, Professor Potter, in his translation, if memory serves me, says, "I am not worthy to hold a candle to him." But even this synopsis did not answer, and many new theories have lately been formed in that school, among which one of the latest and most celebrated, is that of M. Broussais. But even of this, which condemned all its predecessors, as others had done before it, Professor G. S. Pattison, of the Jefferson Medical College of Philadelphia, says, "This fact," [that M. Andral can believe in somnambulism, which at one time could see only the state of the internal organs of the body; at another only that of the fluids,] is worthy of being noticed; it teaches us that the mind which is credulous enough to give credit to *animal magnetism*, will believe any absurdity, even the greatest of all absurdities, the "PHYSIOLOGICAL SYSTEM" of M. Broussais. The student whose mind becomes infatuated by being taught to believe in the specious but most fallacious doctrines of Broussais, on entering on his profession, becomes a most dangerous character; and, unless he is induced to pause and discard his system, after the sacrifice of a few victims at its shrine, *the desolation he will produce*, in the district in which he practises, will be incalculable."

"It may be said, 'Surely a few leeches and a little gum water will kill nobody.' Let the physician never forget that it is his duty to cure his patients, and that, should he lose them by the employment of trifling and inert remedies, when they might have been saved by an energetic and vigorous system of treatment, he becomes really and truly their destroyer." [No, Dr. Pattison, not so bad as that.] "We do hope and trust," says this Editor, "that the intelligent practitioners of this country, whose extensive practical knowledge of their profession, must have convinced them that the diseases of the United States are generally of the most acute character, and such as require for their cure, the most vigorous treatment, *will exert themselves to put down* the "PHYSIOLOGICAL SYSTEM" of M. Broussais, which we are sorry to find, is attempted to be inculcated and made fashionable, by the publication of that author and by teaching his doctrines."—Reg. & Lib., vol. 1, page 7.

I cannot forbear remarking here, that, under my own observation, those practitioners who followed, during the prevalence of the Asiatic Cholera in 1832, the "vigorous treatment" indicated in the famous letter of instructions from the pen of the same Dr. Pattison, "produced a desolation" not indeed "incalculable," for it was easily em-

bodied in the single word "universal," while the more cautious practitioners who did little or nothing—a practice more nearly alied to that of Hannemann and Broussais, lost but very few.

Dr. Benjamin Waterhouse, of the Harvard University at Cambridge, near Boston, Massachusetts, who was one of the three professors first appointed in the Medical Department of that Institution, after lecturing in it for twenty years, retired, saying of all he had been so long and so zealously teaching "I am sick of learned quackery."

Dr, James Thacher, author of the "American New Dispensatory," of "The American Modern Practice," "The Biography of American Medical Men," &c., says, "The melancholy triumph of disease over its victims, and the numerous reproachful examples of medical impotency, clearly evince that the combined stock of ancient and modern learning is greatly insufficient to perfect our science. * * Far, indeed, beneath the standard of perfection, it is still fraught with deficiencies, and altogether inadequate to our desires."—Mod. Practice, page 8.

Dr. Jacob Bigelow, Professor in Harvard University, says, in his Annual Address before the Medical Society in 1835, "The premature death of medical men, brings with it the humiliating conclusion that while the other sciences have been carried forward within our own time, and almost under our own eyes, to a degree of unprecedented advancement, medicine in regard to some of its professed and important objects, (the cure of disease,) is still an *inefectual speculation*."

Dr. Samuel L. Mitchell, late Professor in the Medical College in New York City, in his Preface to "Darwin's Zoonomia," says, "After the different projects for methodizing this department of knowledge, (medicine,) which have successively been offered to the public with so little advancement to true science, the friends of medical improvement, will joyfully accept of something that promises to lead them from arbitrary system to natural method."—Page 29.

Of this "natural method," according to Dr. Mitchell, the late learned Dr. Mason Good, Professor, &c., in London, says:

"How deeply is it to be regretted that so much genius and learning, so much valuable time and labor, and, above all, such lofty hopes and predictions, should have been productive of so small a result." While Darwin expresses the hope that he has laid the foundation of Medical Science on a basis "which shall stand unimpaired, like the Newtonian Philosophy, a rock amid the waste of ages," Dr. Good declares—Nosology, page 29.

"No generous spirit can read this passage without a sigh; nor probably without exclaiming in the words of Pope—

'Oh, blindness to the future—kindly given.'"

And I have somewhere read a statement of a late learned Professor,

that the learned, ingenious and voluminous works of this same Dr. Good, is worthy of a condemnation as severe as that above bestowed on Dr. Darwin.

Dr. Eberle says, (Prac. Med., Preface, page 6,) "It is now generally and very justly believed that the artificial, classic, ordinal and specific distinctions of nosology, [the forte of Dr. Good,] have an unfavorable influence on the progress of comprehensive and philosophical views in pathology!" Thus the whole foundation of that immense work, 'The Studies of Medicine,' is pronounced not only useless, but pernicious!

Dr. Rush says, in his lectures in the University of Pennsylvania, "I am insensibly led to make an apology for the instability of the theories and practices of physic. Those physicians generally become the most eminent, who soonest *emancipate* themselves from the tyranny of the schools of physic. Our want of success is owing to the following causes; 1st. Our ignorance of the disease. 2d. Our ignorance of a suitable remedy."—Page 79.

Dr. Chapman, Professor of the Institutes and Practice of Physic in the University of Pennsylvania, remarks: "Consulting the records of our science, we cannot help being disgusted with the multitude of hypothesis obtruded upon us at different times. No where is the imagination displayed to greater extent; and, perhaps so ample an exhibition of human invention might gratify our vanity, if it were not more than counterbalanced by the humiliating view of so much absurdity, contradiction and falsehood."—Therapeutics, vol. 1, page 47.

"To harmonize the contrarieties of medical doctrines, is, indeed, a task as impracticable as to arrange the fleeting vapors around us, or to reconcile the fixed and repulsive antipathies of nature."—Ib., page 23.

"As it is we are plunged into a Dedalian labyrinth almost without a clue. Dark and perplexed, our devious career, to borrow the fine illustration of a favorite writer, resembles the blind gropings of Homer's Cyclops round his cave."

"Not the slightest of the causes which have conspired to retard the progress of physic, is the eagerness for rash and indiscreet generalization, by which, at all times, it has been distinguished. But if ever we are to strip our art of its "glorious uncertainties," [I should say more properly, "its inglorious certainties,"] and bring into the practice of it something of exactness, it will be by pursuing a *very different course*. To effect so important a *revolution*, we must studiously examine the phenomena of disease, and, with an attention no less unbiased, observe the operation of medicines. Thus, *perhaps*, we *shall ultimately learn* to discriminate accurately the diversified shades of morbid action, and to apply to each its appropriate remedies."—Ther., vol. 1, page 49.

"Availing ourselves of the privileges we possess, and animated by

the noblest impulses, let us cordially co-operate to give to medicine a new direction, and attempt those great improvements, which it imperiously demands."—Ther., vol. 1, page 51.

I perfectly agree with Professor Chapman, in the above statements, respecting what is taught in the schools for Medical Science, and will most cordially co-operate with him in effecnting "so important a revolution" as "to bring into the practice, something of exactness."

Professor Jackson, of the University of Pennsylvania, tells us, in the preface to his "Principles of Medicine," (page 1,) that "the discovery of new facts, has shed a light which has changed the whole aspect of Medical Science, and the works which have served as guides, are impaired in importance and value; they lead astray from the direction in which the science progresses, and new ones are demanded, to supply the position in which they become faulty."

"The want of a treatise on the Practice of Medicine, in the room of those usually placed in the hands of students and young practitioners, had long been felt." * * "At first I contemplated merely a practical book, compiled in the usual manner, founded on the experience of preceding writers, compared with, and corrected and extended by my own. I had made a considerable progress in this method, when I was arrested by the conviction that it was essentially defective; that it did not meet the spirit of the age; that it did not answer the purposes of a rational instruction; that it did not supply the deficiency I had felt to exist in the commencement of my profession; that it had been followed in a servile spirit, from the remotest eras of the science, and is, most probably, the cause that, after so long a period after its cultivation, its practice still continues of uncertain and doubtful application."

He therefore strikes out an entirely new path, and writes a large book which is no sooner out of the press than Dr. J. V. C. Smith, of the Boston Medical and Surgical Journal, pounces upon it with severity almost equal to that of Dr. Pattison upon Broussais. So they go.

Dr. John Eberle, Professor successively in Philadelphia, N. York, Cincinnati, and Lexington, Ky.; says, of the fashionable theories of medicine, "The judicious and unprejudiced physician will neither condemn nor adopt unreservedly any of the leading doctrines advanced in modern times."—Pref. to Prac., page 1.

That is, not a tyro, mark it, but "the judicious and unprejudiced physician," the man who is best instructed in them, and the most capable of distinguishing between truth and falsehood, even such a man is not certain whether, not a few wild notions of some idle theorist, but "the leading doctrines," the fundamental principles of modern medicine, are right or wrong! Shade of Dr. Eberle! you surely will not haunt me for trying to determine this unsettled question!

Dr. L. M. Whiting, in a Dissertation at an annual commence-

ment in Pittsfield, Mass., said: "The very principles upon which most of what are called the theories involving medical questions, have been based, were never *established.* They are and always were false, and consequently, the superstructures built upon them were as 'the baseless fabric of a vision'—transient in their existence—passing away upon the introduction of new doctrines and hypothesis, like the dew before the morning sun." B. M. and S. Jour., vol. 14, page 183; and,

"Because *all systems* which have hitherto been promulgated, have been false, and consequently transient, it by no means follows that *there may not be* found one which will stand a tower of strength, unharmed by the rude shock of opposition's bursting wave, through all succeeding time: and such a theory, it is conceived, may and will be formed of disease."—Ib. page 186.

"Speculation has been the garb in which medicine has been arrayed, from the remote period when it was rocked in the cradle of its infancy, by the Egyptian priesthood, down to the present day; its texture varying, to be sure, according to the power and skill of the manufacturer, from the delicate, fine-spun, gossamer-like web of Darwin, to the more gross, uneven and unwieldy fabric of Hunter; its hue also changing by being dipped in different dyes as often as it has become soiled by time and exposure. And what has been the consequence? System after system has arisen, flourished, fallen and been forgotten, in rapid and melancholy succession, until the whole field is strewed with the disjointed materials in perfect chaos—and, amongst the rubbish, the philosophic mind may search for ages, without being able to glean from it hadly *one solitary well established fact.*"

"If this be a true statement of the case, (and let him who doubts take up the history of medicine;) if that enormous mass of matter which has been time out of mind accumulating, and which has been christened Medical *Science,* is, in fact nothing but hypothesis piled on hypothesis; who is there among us that would not exult in seeing it swept away at once by the besom of destruction?"—Ib. page 187, 8.

For these sweeping denunciations of all the labour of his predecessors, Dr. Smith of the Journal, pronounces Dr. Whiting an "original thinker," and his dissertation an "effort to diffuse light in regions of darkness." I shall hereafter show that I do not agree with Dr. Whiting that, in all these labours "the philosophic mind may search for ages without being able to glean from it hardly one solitary well established fact." I believe they have disclosed facts enough, if well understood, to establish the science of medicine on an immovable basis, and I am very far from desiring that all these facts should be "swept away at once by the besom of destruction." They have established many an important fact that I hope will never be forgotten. They have proved incontestibly that a "physician should be nature's servant;" that "bleeding tends directly to subdue nature's efforts;"

that "all poisons suddenly and rapidly extinguish a great proportion of the vitality of the system;" that whatever be the quantity, use, or manner of application, all the influence they inherently possess is injurious, and that they are not fatal in every instance of their use, only because nature overpowers them—in short, they have tried, and proved false and mischievous, so many errors and combinations of errors in theory and practice, that he would now come at the truth, if he do no more than merely avoid the repetition of their fruitless and ruinous experiments, will so far diminish the chances of error, that any new plan he may propose must opproximate near, very near to the right. I might fill a folio of a thousand pages with similar "besom"-like denunciations of medicine as taught in the schools; but your countenances have long since cried—"it is enough."

Bear with me, however, while I present the view of the subject proposed by my second head, viz:

INTRODUCTORY LECTURE—PART 2ND.

PARTICULAR DENUNCIATIONS.

It is sometimes said that the above and similar denunciations are too general in their character, and that they are the results of disappointments and difficulties in different cases; whereas the several branches of medical theory and practice, are generally pretty well understood. Let us examine these questions.

The important branches of the healing art must be the Theory of Disease and its divisions; of the action of organs under its influence, and the nature, use, and modus operandi of remedies, &c. &c.

"*Disease*," says Dr. Whiting, "has never, till lately, been investigated."—Dissertation.

Characters or Symptoms of Disease.—"Since medicine was first cultivated as a science, a leading object of attention has ever been to ascertain the characters or symptoms by which particular internal diseases are indicated, and by which they are distinguished from other diseases which resemble them. But, with the accumulated experience of ages bearing upon this important subject, our extended observation has only served to convince us how deficient we are in this department, and how often, even in the first step of our progress, we are left to conjecture. A writer of high eminence, (Morgagni,) has even hazarded the assertion that those persons are most confident in regard to the characters of disease, whose knowledge is most limited, and that more extended observation generally leads to doubt."—Intel. Pow. pages 294–5.

PROFESSOR CHAPMAN says, "Perhaps we shall ultimately learn to discriminate accurately the diversified shades of morbid action, and apply to each its appropriate remedies. As it is, we are plunged into a Dedalian labyrinth almost without a clue. Dark and perplexed, our devious career, to borrow the fine illustration of a favourite

writer, resembles the blind gropings of Homer's Cyclops round his cave."—Ther., vol. 1, page 49.

Progress of Disease.—"If such uncertainty hangs over our knowledge of disease," says Abercrombie, "it will not be denied that at least an equal degree of uncertainty attends its progress. We have learned for example, the various modes in which internal inflammation terminates—as resolution, suppuration, gangrene, adhesion, and effusion; but, in regard to a particular case of inflammation before us, how little notion can we form of what will be its progress or how it will terminate."—Abercrombie, page 295.

Action of External Agents.—"An equal or even a more remarkable degree of uncertainty attends all our researches into the action of external agents on the body, whether as causes of disease or as remedies; in both which respects their action is fraught with the highest degree of uncertainty."—Intel. Pow., page 295.

"In regard to the action of external agents as causes of disease, we may take a single example in the effects of cold. Of six individuals who have been exposed to cold in the same degree, and, so far as we can judge, under the same circumstances, one may be seized with inflammation of the lungs, one with diarrhœa and one with rheumatism, while three may escape without any injury. Not less remarkable is the uncertainty in regard to the action of remedies. One case appears to yield with readiness to the remedies that are employed; on another which we have every reason to believe to be of the same nature, no effect is produced in arresting its fatal progress; while a third, which threatened to be equally formidable, appears to cease without the operation of any remedy at all."—Pages 295–6. See, also page 23.

Experience of little value.—"When, in the practice of medicine, we apply to new cases the knowledge acquired from others which we believe to have been of the same nature, the difficulties are so great that it is doubtful whether in any case we can properly be said to act from experience, as we do in other departments of science." * * "The difficulties and sources of uncertainty which meet us at every stage of such investigations, are in fact, so numerous and great, that those who have had the most extensive opportunities of observation, will be the first to acknowledge that our pretended experience must, in general, sink into analogy, and even our analogy too often into conjecture."—Abercrombie, Intel. Pow., page 299.

"What is called experience in medicine," says Professor Jackson, "daily observation and reflection confirm me in the conviction, is a fallacious guide, not more entitled to the implicit confidence claimed for it, than when it was thus characterized by the great father of the science—*fallax experientia.* In fact, experience cannot exist in medicine, such as it is in those arts in which experiments can be made under circumstances invariably the same," &c. And, after proving what he had said, he adds, "But medicine *is* a demonstrative science, and all its processes should be proved by established principles, and

be based on positive inductions. That the *proceedings* in medicine *are not* of this character, is to be attributed to the manner of its cultivation, and not to the nature of the science itself." Hence, he "abandoned" his first "plan," and "attempted the establishment of [new] principles of general application," &c. Here we have the positive declarations of an able and approved professor, that "the proceedings" of medicine are not science; that he believes there is such a thing as medical science capable of demonstration, and that his book is "an indicator to the line of march now taken up" towards this demonstrative science, which he has not yet discovered. Surely Dr. Jackson will delight to see even our little taper volunteer its services to aid his own brilliant flambeau, in bringing into view, this much desired, long sought, but still to him eluding science.

Fever.—According to the doctrines of the schools, *fever*, in its various forms, is at once the most common, the most obstinate, and often the most dangerous enemy with which they have to contend. But what do they know of it? Hear their own declarations:—

"Fever," says GREGORY, "is the most important, because the most universal and the most fatal of all the morbid affections of which the human body is susceptible." * * "The physician must always be prepared to expect its occurrence. It is that by the presence or absence of which all his views of treatment are to be regulated; whose rise, progress, and termination, he always watches with the closest attention. [He surely ought to have learned something about it by this time, if he has so watched it for four thousand years]. Some idea may be formed of the great mortality of fevers from the statement of Sydenham, who calculated that two-thirds of mankind die of accute diseases, properly so called; and two-thirds of the remainder, of that lingering febrile disease, consumption. Fever has proved a fertile theme on which the ingenuity of physicians in all ages has been exerted; and a glance at the attention which it has received from every medical author, both ancient and modern, would be sufficient to impress upon any one the importance of the doctrines it embraces.

How *difficult* is the study of fever, may be inferred from this, that, though so much has been written concerning it, there is no one subject in the whole circle of medical science, which still involves so many disputed points." Still, much as they are disputed, the Doctor adds, "The doctrines of fever are of paramount importance, and therefore constitute, with great propriety, the foundation of all pathological reasoning."—Greg. Prac., vol 1, pages 43–4.

"It has been a favourite topic of inquiry among all writers on fever, What is its nature? In what particular state of the fluids or solids does it consist? The subject has been prosecuted with great diligence, but the result of the investigation is very unsatisfactory. * * All their theories are open to many and strong objections."—Ib. pages 49, 50. "The pathology of fever is so obscure, that it affords but little help in determining the plan of treatment,"—Page 35.

Dr. Thacher, the venerable author of the American New Dispensatory, says :—

"Notwithstanding the great prevalence of fever in all ages and in all climates, and the universal attention which it has excited among medical observers ever since the days of Hippocrates, the disease still remains the subject of much discussion ; and its essential nature, or the proximate cause of its symptoms, is still a problem in medical science."—Thacher's Practice, page 198.

"The history of Practical Medicine consists of little else than a review of the doctrines which have risen and sunk again, concerning the nature and treatment of fever." * * "It is in this department that observation and research have been most industrious in accumulating materials, and that hypothesis has luxurated in her wildest exuberance."—Eberle's Practice, vol. 1, page 13.

Inflammation.—Numerous hypothesis or opinions respecting the true nature and cause of inflammation, have for ages been advanced, and for a time, sustained; but even at the present day, the various doctrines appear to be considered altogether problematical."—Thacher's Practice, page 279.

Hundreds of similar testimonies respecting Pathology might be adduced, but time and space forbid.

Mackintosh asks, "Who knows any thing about disease?" and he gives abundant cases to prove that not a few of the most eminent physicians of the present or past century, knew very little about it.

Dr. L. M. Whiting, after summing up the attainments of the most eminent physicians in all ages, on the subject, asks what they knew, and answers for them—"nothing—absolutely nothing!" True, he intimates that the "scapel of the pathologist" will yet develop the matter; but Morgagni says, "they who have examined the most bodies are the most doubtful of the correctness of any information from them ; and

Rush, still more bold, honest and candid, says :

"Dissections daily convince us of our ignorance of the seats of disease, and cause us to blush at our prescriptions."—"What mischiefs have we done under the belief of false facts and false theories! We have assisted in multiplying diseases ; we have done more—we have increased their mortality."—Rob., page 109. Mackintosh gives practical proofs of this account of surgical operations for dropsies and tumours in the pelvic region.

Dr. Good says, The language of medicine is 'an unintelligible jargon.'—Nosology, page 35-44.

Dr. Chapman says, "The Materia Medica is crude, wild and unregulated."—Vol. 1, page 31.

Blood-letting.—"We have no infallible index to direct us. It is impossible, from the state of the circulation in fever, to point to any certain criterion for the employment of the lancet ; the state of the pulse is often ambiguous and deceptive. Circumstances require

the nicest discrimination, as the result is often very different in cases seemingly analogous. A precipitate decision is fraught with danger, and a mistake may be certain death."—Thacher's Practice, page 208.

"Some patients are bled who do not require it, and the consequences are injurious; others are bled who cannot bear it, and who ought to be treated by cordials, and the result is fatal."—Mackintosh, page 690.

"No physician, however wise and experienced, can tell what quantity of blood ought to be taken in any given case."—Ib. page 418.

"In putrid fever, bleeding is not advisable. The loss of a few ounces of blood being equivalent to a sentence of death."—Gentlemen's Med. Pocket Book, page 35.

Dr. Hunter said, "Blood-letting is one of the greatest weakeners, as we can kill thereby."

Prof. J. F. Lobstein says, "So far from blood-letting being beneficial, it is productive of the most serious and fatal effects—a cruel practice—a scourge to humanity. How many thousands of our fellow citizens are sent [by it] to an untimely grave! how many families are deprived of their amiable children! how many husbands of their lovely wives! how many wives of their husbands! Without blood there is no heat, no motion in the system—in the blood is the life. He who takes blood from the patient, takes away not only an organ of life, but a part of life itself."—Essay on Blood-letting.

"So zealous are the blood-suckers of our age," says Salmon, in his "Synopsis Medicinæ," "that they daily sacrifice hundreds to its omnipotence, who fall by its fury, like the children who, of old, passed through the fire to Moloch, and that without any pity, left to commisserate the inexplorable sufferings of their martyrs, or conscience of their crimes which may deter them in future from such villanies, the bare relation of which would make a man's ears tingle, which one cannot think of without grief, nor express without horror!"

"An eminent physician has said that, after the practice of blood-letting was introduced by Sydenham, during the course of one hundred years, more died of the lancet alone, than all who in the same period perished by war."—Rob. page 121.

"It would appear, that the first, or inflammatory stage of puerperal fever, the stage in which bleeding has been so eminently successful, has no *discovered character* by which it can be distinguished from the second, in which this operatiou is forbidden, after the lapse of a few hours."—Dewee's Females, page 441.

"We would ask, What is the evidence that the first stage has run its course? This is an important question, and one, from our present data that cannot, we fear, be answered satisfactorily. Hitherto this condition of the disease has been inferred rather than ascertained."—Ib. page 438.

The same author says, page 372, "Our bleedings are not always renewed from the arm, for, as soon as we get the pulse pretty well down by this means, we have leeches applied over the parts nearest to the seat of the inflammation, in such numbers as shall abstract at least eight or ten ounces of blood, and encourage their after bleeding by the application of moist warmth. Should these abstractions of blood not prove effective, and pain, fever and other unpleasant symptoms continue, but especially great pain and tenderness in the parts; if the pulse does not call for general bleeding, we repeat the leeching, nor stop until the end is answered, or until we are convinced our efforts will be unavailing, by the approach of the second stage, or by the addition of peritoneal inflammation."

"The immediate effect of profuse and repeated bleeding is exhaustion. While this exhaustation continues, there is a diminution of action of every kind, and hence an imposing appearance of relief to the symptoms of disease; but it no sooner takes place than an instinctive effort is made by the vis medicatrix naturæ, to remedy the evil hereby produced, and to restore the system to its former balance of power. This balance is called a rallying or reaction of the living principle. The arteries contract to adapt themselves to the measure of blood that remains; the sensorial organ is roused to the secretion of a large proportion of nervous power to supply the inordinate drain that takes place during the general commotion, all is in a state of temporary hurry and urgency, and for the most part irregularity of action, while the instinctive effort is proceeding. And hence no sooner is the immediate effect of prostration, exhaustation, or syncope overcome, than the heart palpitates, the pulse beats forcibly with a jerking bound, the head throbs, the eyes flash fire, and the ears ring with unsual sounds. Now it often happens that these concurrent signs are mistaken for proofs of latent or increased vigour, instead of being merely proofs of increased action; and action too, that adds as largely to the exhaustion as the depletion that produced it; and the unhappy patient is bled a second, a third, and even a fourth time, till no reaction follows, at which time it is strangely supposed that the entona, plethora, or inflammatory diathesis is subdued and lulled into a calm, because the patient has been so far and fatally drained of his living principle, that there is no longer any rallying or reactive power remaining, and gives up the ghost, in a few hours, *to the treatment*, instead of the disease."—Good's Study of Medicine, vol 1, page 407.

Here we have the direction of Dr. Dewees to bleed "as long as the unpleasant symptoms continue," and the declaration of Dr. Good, that those symptoms *will continue* "till the patient has been so far and so fatally drained of his living principle, that there is no longer any rallying or reactive power remaining, and gives up the ghost in a few hours, *to the treatment*, instead of the disease."

Hence to bleed scientifically, as taught at Philadelphia and London, and wherever else these text books of the highest authority are adopt-

ed, is to bleed till the patient "gives signs of woe that all is lost." Or, in plain English, it is to commit wilful murder.

Purgatives.—"Many patients are over purged with drastic medicines, to the aggravation of the disease, while others are bunged up with opium."—Mackintosh's Pathology, page 690.

"Purgatives, besides being uncertain and uncontrollable, often kill from the dangerous debility they produce."—Gregory's Practice of Physic, page 94.

"Such is the diversity of circumstances in different examples of fever, and so great is the uncertainty of the effects of mercury on the system, that no precise rule for its administration can be given or regarded."—Thacher's Practice, page 214.

"Mercury, in some instances, exhibits at once all the phenomena of a poisonous action, productive of the most mischievous and sometimes even fatal consequences."—Chapman's Therapeutics, vol 2, page 258.

"*Mercury,*" says Dr. Rush, "is the *Goliath of Medicine.*" It is certainly a Goliath to destroy; it is the uncircumcised Philistine of medical science, who defies the living armies of the living God. The numbers slain by his arm, let India and America, and the world witness. The multitude of the valley of Hammon Gog would not equal their countless hosts, if mustered, on the field of battle.

"The '*heroic medicines,*' as they are emphatically called, deserve, indeed, a considerable share of the praise of the Cæsars and Alexanders of the world; powerful to destroy, heroic in blood and havoc and desolation! It was the boast of Alexander, 'I have made Asia a desert, I have trampled down its inhabitants, and prostrated its ancient renown.'"—Robinson, page 141. Poisons have done more.

Opiates.—"The habitual use of these destructive palliatives," is condemned by Dr. Eberle, as "never failing to operate perniciously on the whole organization."

Poisons in general.—Notwithstanding the various modes of their action, and the difference in many of their symtoms, they all agree in the sudden and rapid extinction of a great proportion of the vitality of the system.—Med. and Surg. Journal, vol 9, page 43.

Hooper says, "The most active in small doses, form the most valuable medicines."

Barton says, "Poisons are, in general, good medicines."—Medical Botany.

I have no doubt that "the lancet and poisons," as many eminent physicians have declared, "have destroyed more lives than the sword, pestilence and famine." Yet these are the articles of medicine most relied upon in the treatment of disease.

I remark, again, that a folio might have been added on this head, but I trust enough has been given to justify Dr. Whiting in the declaration.

"We may apply to Therapeutics, so far as the materia medica is

concerned, the same sweeping phrase which we have already had the temerity to introduce with regard to pathology—that it is a perfect chaos."—Dr. Whiting, B. M. and S. J., vol. 14, page 189.

Science.—I might assign, as another reason, why I am an advocate of medical reform, the fact that medicine, as taught in the schools, is not science.

Dr. Abecrombie says, page 24, "The object of all science is to ascertain the established relations of things, or the tendency of certain events to be uniformly followed by certain other events."

But, on page 293, he proves medicine to be "the art of conjecturing," the "science of guessing."

Dr. Gregory says, Practice, vol. 1, page 34, "The perfection of every science, consists in the exact assignment of effects to their causes, and the expression of their operation in intelligible language. But, on page 29, he says: "Upon no subject have the wild spirit and eccentric dispositions of the imagination been more widely displayed than in the history of medicine."

Drs. Gregory, (page 1,) Bigelow, (Annual Address,) Hooper, Hays, and others, say that "The object of medical science is to prevent and cure disease."

But I have proved by the testimonies above, that the art of preventing and curing disease, is neither taught nor understood in the schools.

Dr. Jackson says, (Principles, page 11), "The true science of medicine *is* a demonstrative science, and all its processes *should* proceed from established principles, and be based on positive inductions. That the *proceedings* of medicine *are not* of this character, is to be attributed to the manner of its cultivation, not to the nature of the science itself." * * "Let medical science be prosecuted in the spirit, and its investigations be conducted under the precepts of a positive philosophy, and there can be no hesitation in believing that a degree of certainty *will* attach to the calculations and attend the practice of the science, [calculations of th escience and the practice of the art,] of which, at present, it is difficult to form any comprehension."

Here we have not only proof that we ought to be reformers in medicine, but great encouragement to become such. Similar encouragement is given by Drs. Rush, Mitchell, Waterhouse, Bigelow, and thousands of others both dead and living. The same Dr. Whiting who said (Medical Journal, vol. 14, page 181,) that "disease has never until quite recently been investigated," says also, (page 185,) that "there may and will be formed a system [or theory of medicine] which shall stand a tower of strength, unharmed by the rude shock of opposition's bursting wave, through all succeeding time." * * And page 189, "A theory of Therapeutics *will* be formed which shall be as immutable as any other natural law." And he adds too, that "this is to be done simply by observation and

experiment." Just as we are doing it in the Botanic Practice. Gentlemen, let *us* enter the lists, and contend manfully for this glorious prize which is yet to be won.

After such an exhibition of the fruitless, the melancholy, and often distructive and devastating results of medical theorising and experimenting for four thousands years, is it a matter for reproach—nay, is it not praiseworthy in any man to declare himself a friend to medical reform, improvement or even revolution, if the Art of Healing cannot be acquired without it? But I hasten to my third proposition.

It may be said that all the above are mere opinions—that the true healing art is understood and practised by the great mass of enlightened physicians of the present day. To this I oppose,

1st. The testimony of those very men who most ardently and ably support it. Testimony against one's *self*, is admitted to be the strongest that can be adduced. If they understood the art, they would surely "heal themselves" if no more. But what say they?—

"The premature death of medical men," says Bigelow, "brings with it the humiliating conclusion that, while the other sciences have been carried forward within our own time, and almost under our own eyes, to a degree of unprecedented advancement, medicine, in regard to some of its professed and most important objects, (the cure of disease,) is still an *ineffectual speculation*."

Rush exclaims, "We have assisted in multiplying diseases—we have done more—we have increased their mortality."

Add to these, the declarations above quoted, respecting the injurious influence of their heroic medicines; if any thing more is wanted, I refer to—

My third head, viz: The devastation which disease is continually making under your own observation, in the health, comfort, constitutions and lives of your friends and neighbours and society around you—(In charity I will say, notwithstanding the utmost efforts of the most intelligent and benevolent physicians to stay his ruthless hand)—and now I ask if it be not praiseworthy in me, to stand up before you the fearless and uncompromising advocate of radical reform in the science of medicine?

If, however, you should still decide that there is neither merit nor justice in my conduct, then I answer—

I am one of six children whom my parents raised to maturity without the aid of doctors or poisons, and sent out into the world with good constitutions in a healthy state. In process of time they were all attacked with disease, and five of the six applied for relief to the advocates of medicine as taught in the schools. Though in all these cases, the vital energies contended long and fiercely with the terrible *Goliahs* of the art, yet eventually the envenomed fangs of that reptile system, fastened so deeply upon their vitals, that four of the five, after "lingering from four to eight years of miserable existence, in extreme debility and emaciation," most heartily welcomed death as

"a friendly stroke to put a period to their sufferings," while the fifth, my worthy brother, Dr. Samuel Curtis, of the New York College of Physicians, is only lingering a little longer, in consequence of having arrested the execution of the blow by a thorough and judicious use of "nature's remedies."

I too, was sick as well as they. I too, was entreated by my medical as well as other friends, to use the curative means prescribed by the boasted science of medicine; and, so anxious were the former to save what they called a useful life, that some of the most distinguished of them, offered me their services without reward. But, happily for me, I had studied too thoroughly before I needed their art, the books containing their science, to have any confidence in their ability to cure me. Hence it is doubtless attributable to my total rejection of their heroic remedies, that I now stand before you, like the unscathed oak in the midst of the whirlwind's desolation—yes, gentlemen, the poisonous darts of medical destruction have left me, like Logan, almost without a mourner! insomuch that, but for the hope of living to do something for the mitigation of the physical and moral evils that are spreading misery, desolation and death through the world, like him, "I would not turn upon my heel to save my life."

If, therefore, I repeat it, you or society in general, refuse to me any credit for my course, I here declare to you that, in obedience to the dying commands of a long and sorely afflicted victim of medical poisoning, who of all others, was nearest to my heart, like Hannibal, I have sworn to "wage an uncompromising and eternal warfare against quackery and every species of medical poisoning." This vow shall be performed while I have a voice to proclaim the truth, or a hand to guide the pen to leave a trace that once I lived!

INTRODUCTORY LECTURE.—Part 3rd.

CAUSES OF COMPLAINT.

I have now presented, for your consideration, what I deem evidence abundantly sufficient to justify me in the course I have taken in my medical career, against the pecuniary interests of the privileged order of physicians, and the prejudices of the large and respected portion of the community who believe in their "mysteries," and sustain their "proceedings."

I have already hinted, however, that I cannot join the authors I have quoted, in their sweeping denunciations of all the labours of all their predecessors; as presenting "nothing, absolutely nothing, that is useful to the physician." In my opinion, it cannot be that a body of men so numerous, talented, learned, scientific, benevolent, observing and thinking, as they that have been denominated, *par excellence*,

the medical profession, have laboured incessantly four thousand years to no purpose.—No! they must have discovered "*something* useful to the physician." I go further, and express the opinion that he must be a miserable philosopher, that cannot derive *much valuable* instruction from the immense mass of facts *they* have accumulated, the countless variety of experiments they have instituted, and the result, of which they have so minutely recorded. I can clearly discern amidst the "confusion," though I am free to confess that they are enveloped in much "rubbish," both the corner stones and the ornamental gems of medical science, which need only be extricated from the "chaos," carved and polished, and arranged according to their relative fitness, to constitute the firm foundation and the brilliant decorations of the rich and beautiful temple of true medical science.

To make this declaration clear and conclusive, I proceed to point out some of the principal reasons why the healing art has never yet derived much if any improvement from all the various labours which the faculty have bestowed upon it.

It must be self evident, to every reflecting mind, that the science and art of healing, involve several important, fundamental principles which are so inseparably connected, and indispensably necessary to the ultimate perfection of the whole, that all must be included in every calculation respecting the final result of their combined operations, whether we understand their nature, character and connexions, or not.

To my mind, it is very clear that, to prevent disease, we must use, in a proper manner, the means that are calculated to oppose the introduction of its causes into the system, or expel them after they have entered. These means must be suited to the demands of the system, whether we know the nature and locality of those demands or not.

Now it is evident that, if we knew ever so much about the cause, seat and character of the disease, and the nature of the vital operations, so as to perceive clearly the indications of cure, and yet knew no remedy suitable to these wants and indications, we should fail to cure, as certainly as if we knew "nothing, absolutely nothing" of the matter. Or, should we know the true remedies and be ignorant of the quantity and proper application of them, we should fail in our efforts, to do all the good of which the means were capable, even if we did not do mischief.

But if, even by mere chance, if you please, we should use the right means in the right manner, it is evident that their action would harmonize just as well with all the principles and indications, though we knew not one of them, as if we were acquainted with the whole. This is the reason why "empyricism often blunders into important cures, while the efforts of the regular physician have as often proved ineffectual," the latter having used improper articles "under the guidance of false therapeutic principles."

It would appear then, the mere experimenter who confines his

prescriptions to the use of a few good remedies, the action of which is uniform and well known, is far more successful than the fluctuating theorizer who is constantly changing his remedies to accommodate his favourite hypotheses.

But it is quite evident that he who understands all these matters, will be a better physician than either of the persons whom I have just characterized.

Suppose I were the speculator and should not succeed in the result of my experiment, would it not be very unphilosophical in me to suppose that all my propositions were wrong, when an error in only one is sufficient to prevent the desired result? And would it also be wise to conclude that, because, in the other case, my remedies cured without my knowing "how or why," therefore the knowledge of the how and why is not important in any case?

The great fault of physicians, in estimating the value of the labours of their predecessors, has ever been, that they either received or comdemned almost by wholesale, every previous system, *abandoning the truth* with the errors—casting away the *diamonds* with the "rubbish," and subjecting themselves to the necessity of travelling over the whole ground again, with confidence still further and further impaired in their ability ever to arrive at simple truth.

Every reflecting man will agree with me that the art of preventing and curing disease, the principles of which are called medical science, involves a greater or less degree of accurate knowledge of the following subjects:

1st. The location, proportion, form and structure of the several parts of the human body. This is called Anatomy.

2nd. The functions of those parts—that is, the offices they perform in a healthy state; in other words, the nature of healthy vital action. This is called Physiology.

3d. The means by which any checks or destructions of those actions or functions may be effected, which means are the causes of disease; and also the results of the partial or total cessation of those actions, which results may be considered disease itself. To these, add the characteristics of the checked or deranged actions, or symptoms of disease, and we have what is usually included in the term Pathology.

4th. The character of the actions necessary to restoration, and the identical articles and processes adapted to produce them; and this is styled Therapeutics.

Let me repeat these propositions in a condensed form.

The true science and art of healing, involve some correct knowledge,

1st. Of the organized body.

2nd. Of its various functions; that is of the *modus operandi* of its motive power—or of vital action in a healthy state.

3d. Of obstructions to vital action, (or causes of disease,) and the consequences of their presence.

4th. Of the means and processes necessary to remove the obstructions and restore or equalize the healthy action.

I freely admit that, of these propositions, the last is far the most important; yet, as all distinguished medical men have acknowledged that they are important and indispensable (differences of opinion being, not whether this knowledge is proper, but whether we actually have it, and in what it consists;) let us consider them as settled, and then apply them as tests by which to try all the principal systems of medicine that have appeared in the world.

It is proper to remark here, (and I wish it not to be forgotten,) that, "necessity being the mother of invention," the knowledge of these subjects commenced, and, for a long time, progressed in the order directly reverse to that in which I have stated them. It follows of course, that I must consider them in this latter order, as they rose successively, from remote ages down to the present day.

It was not anatomy, physiology, nor pathology, but the discovery and use of something that would relieve present suffering, that first drew the attention of men to medicine as a profession. In the beginning of old time, they found themselves possessed of organized bodies, constructed in perfect accordance with their stations and relations; nor do I suppose they would have suspected that an intimate knowledge of the internal structure of those bodies, could minister to any thing but mere curiosity, and intellectual and moral gratification, until they discovered that this beautiful and complicated machinery was out of order, and in imminent danger of destruction for want of something to restore its natural action. The first thing then, was, to discover and use for the regulation of the system, that which would best promote its healthy operations. They saw themselves surrounded with innumerable objects, of many of which they were told they might freely eat, and which, of course, they regarded as food or something necessary to supply the wants of those organs during the whole course of their active state.

In process of time, however, it was discovered that some things did more harm than good to their bodies, deranging instead of promoting what they termed healthy action. These substances were justly considered injurious to the system, termed POISONS, and carefully avoided, as enemies to health.

It was soon after discovered that some other substances possessed the power to restore a healthy action after it had been deranged. These were properly termed medicines. Their sensible qualities were minutely examined, and their effects upon the body were carefully recorded and remembered. Hyssop was early found to be an excellent remedy to purify the blood, ("Purge me with hyssop," said David, "and I shall be clean,") and "a lump of figs" was, as it still is, no less valuable to remove a boil. In short, though some of them proved injurious, yet it was soon found that, in general, "the leaves of the trees were" appointed "for the healing of the nations."

Among the earliest records of the rational use of substantial remedies, we find it admitted, as a general principle, that, to be justly en-

titled to the appellation of "medicine," an article should be capable, even when given in small quantities, of exciting and increasing the natural and healthy action of the physical organs, without either destroying or diminishing their power.

This principle deduced from experience and observation, was then correct, has been ever since, and will ever continue to be so, though the whole world oppose it.

Hippocrates, (Ob., B. C. 361,) the earliest systematic writer on medicine, whose works have been preserved to our time, discovered in the human body, by long and careful observation, "the existence of a principle" which he styled *nature*, to which he ascribed the superintendence and direction of all our corporeal actions and movements. To this principle, he attributed a species of intelligence, and conceived that one of its most important offices is to attach to that body what is beneficial, and to reject from it what would prove injurious,"—an hypothesis," says Bostock, Phys. page 2,) "which although expressed in different ways, and clothed in a more or less mysterious form, has continued to be a popular doctrine to the present day." A truth, I affirm, which all experience has contributed to establish, and which no fact or solid argument that has ever been advanced can disprove. True, he did not know its ultimate essence, which he erroneously imagined to be *heat;* but he knew its existence, and distinguished many of its specific effects, as certainly as we distinguish those of gravitation and magnetism.

"He imagined disease," (says the Edinburgh Practice, vol. 1, page 6,) "to be only a disturbance of the animal economy, with which [disturbance] nature was perpetually at variance, and [of which she was] using her utmost endeavours to expel the offending cause."

"In his treatment of disease," says Thacher, page 4, "he studied and copied nature with the greatest care and assiduity, as the only sure basis of medical science; and so extensive was his knowledge and so accurate were his observations, that he has been constantly held in veneration through succeeding generations."

His opinion was that "nature cures diseases," and, that all a physician should do, is to watch her operations and to second her intentions.

In this doctrine he was unquestionably right, notwithstanding Doct. Whitings's opinion that he "knew nothing about disease." All the most experienced and judicious practitioners since his time, have arrived at the same abstract conclusions. Their only bone of contention has been, What are her intentions? and with what means and in what manner shall we second them?

To this I reply, while Hippocrates adhered *in practice* to his correct principles, that nature should be aided by means and processes which act in harmony with her intentions, his practice was universally successful.—While he vomited his patients with vegetable emetics, cleansed the bowels with enemas, opened the surface with a warm bath, and promoted perspiration by a free use of the pure (not alcoholic) wines of Naxos, he was perfect master of even the terrible

plague of Athens. "But, say his opponents, he often failed in cases where it was reasonable to expect success." I answer—true; and the reason is, he, sometimes, like our modern Paracelsians, began to fear that nature had become delirious and was no longer capable of conducting her own operations; and, therefore, in his superior wisdom, he attempted to conteract or check her desperate efforts against disease. Yes, with the correct principle that remedies were to be innocuous, and act in harmony with vital operations, he even bled his patients and gave opium and other poisons! and, therefore, as I have already said, however correct might have been his theory of what he ought to do, the bleeding and poisons acted just as they do in the hands of our modern Paracelsians. They opposed nature till they drove her from her temple. Occasionally too, he lost a patient through inefficiency in correct practice. But death cannot be justly charged to the account of a practice which was not faithfully applied.

Because of these few, very few failures in his practice, many successive leaders in medical improvment, as they called it, have rejected the fundamental doctrines of Hippocrates which were true; and not a few have built entire systems on the few and fatal errors he embraced, and put in practice but occasionally.

Galen, the next writer worthy of notice in this slight sketch, (who died A.D. 201,) pretended to admire and defend the doctrines of Hippocrates; but he subdivided them into so many ramifications as to create much confusion, and introduced so many remedies into the practice, and put so many ingredients into the same compound, that he was often unable to discover, from the effects of their exhibition, what principles had been illustrated, or what remedy had proved good or bad. Hence he often failed to cure; but still, as his medicines were mostly vegetable, and poisons were rejected so far as he knew them to be such, he was generally so successful that even his power over disease "was ascribed to magic."

Here, we see that Hippocrates and Galen seldom failed, except when they departed from established principles in the use of unknown agents which proved either useless or injurious.

Chemists and Mathematicians.—For fourteen hundred years after the death of Galen, very little change took place in either the theory or the practice of physic. It was enough to think and act as Galen thought and acted. In the fifteenth century, however, arose contentions between physicians who were soon ranged into two sects under the titles of Chemists and Mathematicians.

While both "fell into the error of ascribing the phenomena of life to the operation of the laws which influence inanimate matter," (Bostock,) "the chemists accounted for all the operations of the animal economy, by the chemical action of the components of the body upon each other; but the mathematicians" ascribed them to "the principles of mechanics."—Bostock says, (Phys., page 5,) "It is not necessary in the present day, to enlarge upon the waste of genius and

the misapplication of experimental research, which originated from this fatal error ; it may be sufficient to remark that, although important facts were occasionally brought to light, and many elaborate investigations were instituted, from which some valuable information may be deduced, yet not one single hypothesis was proved nor principle established, of all those upon which so much labour and learning were bestowed."

It is surprising indeed to me, that men should ever have dreamed that either chemistry or mechanics could account for the origin, maturity and operations of an organized body. Whoever knows any thing about chemistry and mechanics, (and who is there that does not know *something* about them ?) may witness every day, the fact that the most casual approximations of inorganized matter give rise to chemical decompositions and recompositions in great numbers and varieties, and to mechanical adhesions into masses of any and every shape ; but who ever saw an organized body involving the vital power ? What animal or plant was ever indebted to mere chance for its origin ? It may be said that like chemical changes will take place wherever the materials and circumstances are similar. I answer, the products are liable to varieties in size, quality, colour and properties, so great as entirely to destroy their identity ; but if they were not, who ever expected to see chemical or mechanical changes, bearing the relations to each other of parent and child ? What chemical or mechanical composition, either alone or united with its like, will ever beget its like, either without or with his own destruction ? As soon would I expect to see an oak proceed from a pea, or an elephant from the egg of a sparrow.

ANIMA, VIS VITÆ OR LIFE.—About the commencement of the last century, *Stahl* and *Hoffman* kindled into a flame the spark whose influence Hippocrates had felt among embers, and gave it the name of *Anima*.—" Stahl," says Bostock, page 61, " was forcibly impressed with the difference between the changes which the components of the body experience during life, and what would take place in the same substances under other circumstances. Hence he concluded that, when they form a part of the living system, they must be possessed of some additional principle that counteracts the effects that would otherwise be produced. To the agent which thus opposes the physical powers of matter, and to which the body owes it vital properties, he gave the name of *Anima*." Dr. Bostock continues, page 7th, " To Stahl, therefore, we must ascribe the merit of clearly perceiving the inadequacy of the actions of either chemical or mechanical causes, to explain the phenomena of life, a truth which we now regard as incontrovertible."

As to myself, I do not remember the day when I did not believe in the existence, in the animal body, of a vital power, producing phenomena very different from the results of chemical or mechanical action ; but I presume I learned it of my mother, if not from my own observation.

It must never be forgotten that, while the learned were verging to something like a correct theory of vital action in a healthy body they were departing farther and farther from the truth in two other points of paramount importance, viz.

1st. they were settling their minds in the belief that, in every case of the encroachment of offending causes, this very vital power so essential in health, in rising to expel them, becomes at once the very sum and essence of *disease*, and must be checked, subdued and destroyed at all hazards: But, finding none of the innocent and life-supporting remedies of Hippocrates calculated to do this work in a direct manner, as the effect of their administration—

2ndly. They gradually departed from the use of Nature's simple remedies (except now and then when little ails the patient, or as restoratives after they have reduced him as much as they dare) and introduced into their therapeutics the processes of bleeding and blistering, the knife and the caustic; and, into their Materia Medica, the most deadly poisons contained in the three-fold kingdom of nature, whether derived at once from her laboratory, or detached from her compounds by the use of her powers, under the guidance of chemical science.

"In the beginning of the sixteenth century," says the Edinburgh Practice, (vol. 1, page 46,) "The famous chemist, Paracelsus, introduced a new system into medicine, founded on the principles of *his art*." Hitherto, "the physicians rejected the use of opium, mercury and other efficacious remedies." "Efficacious" indeed they have been! as the ghosts of murdered millions could declare.

Here, it seems that, for the art of *aiding* nature in her efforts to remove disease, which had been practised with a tolerable degree of consistency and with astonishing success, by Hippocrates and Galen, was substituted the general use of poisons which, however different in other respects, all agree in "suddenly and rapidly extinguishing a great proportion of the vitality of the system!" Oh, what a falling off was there!

From that day to this, it has been of little importance what theory has been broached; whether truth or falsehood has entered into, or mainly composed, the systems of medicine that have followed each other in rapid succession; whether life be an essential motive power separable from the body, or the mere effect of organization; whether the causes of disease be one or many; whether disease originate in the fluids or the solids; whether chemistry or mechanics prevail; whether antiphlogistics or stimulation, ice or the warm bath be advocated, an active or a mild treatment be recommended.—Like the waves of the ocean, each and every theory, in its turn, whether true or false, has been dashed and dispersed by the same Paracelsian rock.

Permutations in the extent of depletion or the quantity of poison to be given, the particular articles containing it, the locality or the manner of the applications, the stage of the disease or the hour of the day to be chosen for operation, have indeed been studied and tried, and 'guessed about' *ad infinitum*, but still the chief practice

consists in bleeding, cupping, leeching, blistering, burning, cutting, physicking, starving and poisoning, in some shape or other; insomuch that old time long hung up his sythe as useless, and resigned his commission to the "regular medical faculty."

I am free to admit that much useful information has been elicited within a half century, on the subjects of anatomy and physiology. I admire the laborious researches, and rejoice at the important improvements of a Sarlandiere, a Charles Bell, a Spurzheim, &c. But when I turn my thoughts upon the untimely death of even a Godman, a Spurzheim, a Jackson, and hundreds and thousands of the most "gifted sons" of medicine, as well as of the other professions, my heart sickens at the mental vision, and I am ready to exclaim, as the wise man did of mirth, "What worth it?" And what advantage has the world gained of all the labours which the faculty have taken under the sun? Something whispers, "vanity of vanities, all is vanity!"

Still, with "the learned and eloquent Bostock," who, after having minutely surveyed the whole field of labour, and the fruits of the toil of all that had written before him, ask (page 78,) "Are we to conclude that all medical treatment is of no avail? That it is all imaginary or deceptive?" I must join in the answer; "I should feel most unwilling to be compelled to form such a conclusion, nor do I conceive that it necessarily follows from the premises."

No, gentlemen, I trust I shall be able to prove to you, in the course of my lectures, that the lamentation of Dr. Bostock is altogether unseasonable—that there is, not only in the arcanæ of nature, but in the clear comprehension of men, a theory of medicine as true as the laws of mathematics, and a practice as consistent with it, as geometry is with those laws;—and that, much as the regular faculty have abused each other for not having discovered the whole science of medicine, and much as they have despised the results of their own labours, I shall show that they have furnished a vast amount of valuable facts for the use of the medical student, which wisdom can never despise.

In the light of those facts, I hope to be able to exhibit a true science of medicine, not merely in its application to the cure of disease, to which it has been too long and too closely confined, but also in its far more important bearings, the principles and practices by which disease may be always prevented. I do not, indeed, expect to prevail on men generally to adopt the principles and practices I recommend; I know full well that there are many, like the cretans of old, "whose god is their belly," who, however well informed in the matter, will never exercise the self-denial that is absolutely necessary to the preservation of their health; but I do intend to present the subject so clearly before you, that, in the conclusion, I can say, with good old Joshua, behold I have set good and evil, life and death before you; choose you which you will have; and that, if you refuse the good and choose the evil, suffer much sickness, and die prematurely, I can say with a good conscience, I am clear of your blood.

LECTURE 2.

THE ELEMENTS OF KNOWLEDGE.

Though, in a certain sense, what appears to the untutored mind is true, that we are surrounded by an illimitable number and variety of objects and operations for our contemplation, use, abuse or avoidance; yet a close, enlightened and discriminating observation will show that all these objects are but so many different combinations of a few distinct atoms or elements; and that the operations are but the simple or combined actions of a still smaller number of agencies or motive powers, with whose existence and properties it is not very difficult to become acquainted.

MATTER AND MOTION constitute the sum total of creation, the knowledge of which tends in the highest degree to promote our comfort and happiness; while ignorance of these and their nature and properties, subjects us, at every movement, to the imminent peril of our health and happiness, and even life itself.

APHORISM 1.

ATOM—ELEMENT. The smallest portion that exists or can exist, of any substance—that which is indivisible by the most subtle and active powers of nature's laborators, is called an *atom*.—The atom of a simple substance, or the smallest combination peculiar to a compound, is called its *element*.

APHORISM 2.

MATTER. Any substance capable, by accumulation of its atoms, of being rendered cognizable to one or more of the five senses, and of excluding, from the space it occupies, all other things of similar description, that is, any thing that can be touched, tasted, seen, heard or smelled, is called MATTER. (Aph. 9.)

Properties of matter. There are certain circumstances which must necessarily exist wherever matter exists, and which can have no existence without it; as form, solidity, impenetrability, divisibility, extension, inertia, &c.

Atomic elements. About fifty distinct materials, are called atomic elements; and these are so called, not because they are known to be ultimate; but because they have not yet been decomposed by art, nor *certainly known* to be separated by the nicer processes of nature. They are: Hydrogen 1, Carbon 9, Oxygen, Boron and Silicium 8, Allumium 10, Phosphorus and Magnesium 12, Nitrogen 14, Sulphur 16, Glucinum 18, Calcium 20, Sodium 24, Cobalt 26, Chro-

mium, Iron and Manganese 28, Iridium 39, Tellurium and Titanium 32, Zinc and Yttrium 34, Chlorine 36, Arsenic 38, Potassium Selenium, Zirconium and Nickel 40, Antimony, Rhodium and Strontium 44, Molybdenum 48, Cerium 50, Cadmium and Palladium 56, Tin 58, Copper 64, Bismuth 72, Barium 79, Platinum and Tungsten 96, Lead 104, Silver 110, Iodine 124, Columbium 144, Gold and Mercury 200, Uranium 208, Light, Caloric and Electricity.

The figures after each substance, denote the weight of its atom compared with that of hydrogen which, being the lightest of all ponderable substances, is set down as 1.

Remark. Many philosophers think that in the processes of nature, all these are produced from various combinations of, some say two or three, and others think them but the different aspect of only one, and that one, light! I take them as I find them at present, because little or nothing would be gained to the science of medicine, by decomposing them to the *ne plus ultra*, the utmost possible extent. All our knowledge of what is good or injurious to the human system, must be learned by experience in the use of it, in its natural state; any chemical change alters its properties and uses. Still we cannot but smile at the thought that the minerals and metals of the earth, the water, the air, and vegetable and animal matter, our being, our blessings and our curses, are all but different aspects and aggregations (combinations is out of the question) of a single ray of light!—*credat qui vult.*

APHORISM 3.

MOTIVE POWERS. Any essence or thing existing, which does not answer the description of matter, (prop. 2.) but which is proved to exist by the effects which it produces on matter, is called a MOTIVE POWER.

ILLUSTRATIONS. *Gravitation.* I observe that the materials of the earth are held together, and I conclude that some power holds them together. But I should not know that this power extends beyond their substance, or is independent on it, if I did not observe that distant bodies are attracted to the earth and the planets to the sun. This could not be the case, if attraction were a mere property of matter not existing where matters does not exist. The fact, therefore, that bodies at a distance are attracted towards each other, is positive proof that the attractive power exists in all the space between them. This power is *called gravitation.* It acts on all bodies according to the quantum of matter they contain.

CHEMICAL AFFINITY. In the processes of nature, I observe the operations of another motive power which does not seem to pervade all bodies, nor to act on any at any conceivable distance.—Yet, where it does exist, it is far stronger than gravitation. It holds oxygen and hydrogen together in the form of water, carbon, oxygen and hydrogen in the form of oil, carbonic acid and lime in the form of

marble, &c. This power is called *chemical affinity*. It is known to be different from gravitation, by its selection of articles, and the different degrees of its attractive power on substances of equal weight; also by the nature of its compositions and decompositions. (Aph. 12.)

Life. As I look farther into the operations of nature, I observe that some other power acts in many cases in opposition to, and in others above, both gravitation and chemical affinity, and, out of the same materials of which gravitation can construct only masses, and chemical affinity only lifeless though peculiar compounds, this constructs organized and living bodies: as vegetables and animals, at the head of which man himself stands pre-eminent. This motive power is denominated *Life*. As it is the most important object of attention to the physician, I shall prove its existence certain, and explain and illustrate its operations in the clearest manner, when I treat of organization.

Properties *of the motive powers*, Certain circumstances are connected with the motive powers, which could have no existence without them, as the degree, the ratio and the direction of gravitation; the elections of chemical affinity and the propensity to organization in the vital power. These are called *properties* or *faculties* of the motive powers.

APHORISM. 4.

Compounds. Several of the motive powers are so connected with material substances, that they have never been detected in a seperate state. They are *light*, *coloric*, and *electricity*. These are both material substances, (Aph. 2.) and motive powers, (Aph. 3.) As matter they occupy space to the exclusion of other matter, are all appreciable by their momentum or the force with which they strike other bodies; and, as motive powers, they are continually producing changes in the material world; unlike pure matter, they have no relative rest. They are unquestionably compound.

APHORISM 5.

From the preceding facts and illustrations, we perceive that we are surrounded with objects and operations that bear so close a relation to ourselves, that we can perform no act however trivial, that does not accord with, and directly promote our physical or moral welfare, or violate the laws of that welfare, and subject us to a merited penalty. If we take exercise, food, air, water or clothing, of the right kind and in due quantity and season, health and happiness are the consequence, if we take those of bad quality, of too great quantity or out of time; or if we eat poison, we violate the relations we bear to the objects about us, and must suffer a warfare of the vital energies

against these opposing objects and operations, proportionate to the kind and degree of violation. If we violate but slightly, an abridgment of present health or comfort, and of remaining life may be all; —if we bring the vital power in contact with an agency superior to the living power, death is the forfeit. If the air we breathe, be charged with pestilential odors, instead of supporting life and health, it becomes a vehicle of disease and death. If our *exercise* be of an improper kind and measure, it produces mischief rather than good; and if, in sickness and suffering, we resort to *poison* instead of medicines, and do not ruin our constitutions or destroy our lives, the escape must be attributed to the power of the organism to protect itself, rather than to any knowledge, skill or providence of our own.

APHORISM 6.

NATURAL PHILOSOPHY. The study of matter as we find it, in its simple or its aggregated forms, with its obvious properties and its sensible motions and the laws that govern these motions, is called *Natural Philosophy*.

Illustration. The consideration of *water* as a fluid, its pressure, its incompressibility, its solvent and cleansing properties and its various uses; and of *air* as a fluid, compressible, supporting life, &c., belongs to this department of study.

APHORISM 7.

CHEMISTRY. The reduction of combinations to their elements, and the composition of other combinations, and the study of the motive powers by which these changes are effected, is called CHEMISTRY.

ILLUSTRATION. The decomposition of water and air into their atomic elements, and the study of the properties and uses of oxygen, hydrogen and nitrogen, illustrate this department of study.

The chemistry of earths, minerals and metals, involving the use of Electricity and Chemical Affinity, is called *inorganic chemistry;* that of vegetables and animals, involving life, is termed animal or *vital chemistry*. As the laws of inorganic chemistry, are constantly warring against vital organization, and the vital power constructs its citadel and maintain its dominion in it only by virtue of its avoidance of them or its superiority over them and all other powers, life has been often termed *a forced state*. It is, in reality, however, no more a forced state than death; the organic forces prevail in the one case and the inorganic in the other. The world is full of contending attractions; no state or condition, is either produced or maintained but by superior force; so that we may say with propriety that life and death, motion and rest, wherever observed, are all forced, and, at

the same time, are perfectly natural. The ink that has been wasted upon this subject, is like water spilled upon the sand ; it neither can nor need be gathered again, nor is it useful there.

APHORISM 8.

The study of matter, its properties and laws, is called *Physics;* that of mind, its properties and laws, Metaphysics : from the Greek *Phusis, nature,* and *meta,* beyond.

APHORISM 9.

Evidence of the existence of matter. I have already stated) Aphorism 2,) what constitutes matter, and given the elements of all its forms. I there stated that it is known as an object of some one or more of the senses which are always deemed sufficient evidences of its presence. Though they are sufficient proof of its presence in quantities sufficient to affect them, yet it must not be supposed that they are capable of detecting its ultimate atoms, elements, or even all its systems.

For example. The sense of *taste* cannot detect all the substances in solution in the water we drink ; we cannot *feel* the atoms of sublimated sulphur ; we cannot *hear* the sound produced by a slight breeze, that is, we cannot *feel* with our *ears* the momentum of air in the motions of the light beeze ; we cannot smell the substances constituting miasmata, epidemic viri, &c.; we cannot see the atoms of water nor even the myriads of living organized beings that often people a single drop of that fluid ! Yet no one doubts that water contains many substances in solution, that sublimated sulpher is composed of atoms, that every motion in the atmosphere produces a sound, that many odours float in the breese which we do not recognize by their scent, nor, finally, that the waters are peopled with swarms of living beings which no eye can see nor glass can reach !

But how do we know all these thing ? I answer, not by bringing their essences in contact with our senses, but by the *effects* produced by the accumulation of their atoms, or the action of those atoms on matter ; or, by chemical decomposition, or by applying to them the laws of refraction, or by mere abstract reasoning on the necessities of the case. Thus we distil the purest spring water, and materials remain which we could not taste in the water, and we affirm that this is evidence amply sufficient to prove that they were there. We know that a disease of the same character is produced in all the path of a vein of wind, and we affirm that a sepecific virus was wafted in the gale, though detected by none of our senses. We say, if the sulphur had no atomic existence, there could be no accumulation that would satisfy the eye, the taste, &c., therefore we affirm the atomic existence, as strongly as we do the massive. We see no animalculæ in the water, but by the aid of refracting glasses, we raise an image or

a shadow on which we gaze, and we stoutly affirm the existence of a fac-simile in a material, organized and living being. Here, then it is proved beyond dispute, that we have no evidence of the existence of elementary matter, but the effects produced *on* it *by* chemical, mechanical or vital power, or *by* it *on* other materials or powers: yet no man denies the existence of atomic matter—mark this, and do not forget it.

APHORISM 10.

The specific differences between different materials. Here, again, we know that men can easily distinguish between gold and copper, silver and platinum, zinc and tin, oxygen and hydrogen, oil and sugar, beef and cabbages, &c. &c. But how is it done?—Is it by any essential difference between the atoms of those substances which can be detected by the senses? By no means. The senses may, indeed, in time, be taught, to distinguish very accurately between copper and gold, zinc and silver, but, as far more accurate and satisfactory evidences, do we not rather distinguish the metals by their specific gravity, malleability, fusion, &c.—The gases by their specific gravity and combustion or non-combustion, support or destruction of life, &c?

Do we rely on the senses to informus us that oil, alcohol and sugar consist chiefly of carbon and hydrogen, and that beef and cabbages are made of the same with a portion of nitrogen? Surely not, yet we stoutly affirm these things as facts clearly demonstated.

But how demonstrated? I answer, as was the very existence of the elementary atoms; by the effects of chemical operations, inferences are drawn of the existence of adequate causes, and the knowledge thus obtained is as certain as any knowledge that we possess.

In fact, the evidence of the senses is admitted to be wrong, and is corrected by reasonings on the relations of cause and effect, even in cases where the senses have full and unobstructed action. See that draftsman; does he conclude that the most distant pillar of yonder dome is shorter than the nethermost, because the eye thus decides the question? No; he corrects the error or sense by his reasonings and calculations on the *effects* produced by different distances, as procuring causes. See that warrior; he trembles at the flash of the distant cannon, but laughs after he hears the sound at the thought that the ball will hurt him. Why this sudden fear and speedy security? Because he has learned, by the observation of cause and effect, the difference between the velocites of light, bullets and sound.

Hence, it appears that the specific distinctions among material substances, as well as the very existence of those substances, are not always cognizable directly by the senses; but often secondarily, through the medium of comparisons with each other, or the effects

of the action of different motive powers on this substance. *Mark this also.*

APHORISM 11.

Evidences of the existence of motive powers. The evidences here, as in (Aph. 10.) are not the testimony of the senses as recognizing the ultimate atoms, but, first, negatively, they do *not* answer the description of matter (Aph. 2.) and secondly, they *are inferred*, as *causes* of effects which are cognizable by the senses, Ex.

Gravitation. First, negatively, Its atoms cannot be so accumulated as to render them objects of sense independently of matter : It excludes no substance from the space it occupies, &c. 2d. Positively, it sets all matter in motion when free, or holds it fast against an obstruction in the line of its direction, till overcome by a superior force. (Aph. 7.) If it be true that atoms of matter are proved to exist, by the inference drawn from the fact that an accumulation of those atoms is cognizable to the senses, it is equally true that a motive *essence* exists as a cause of the motion which we discover in matter by the same senses. The effect proves the existence of the cause, as strongly in the one case as in the other. (Aph. 9. 10.)

Chemical affinity. Negatively, the same as gravitation. Positively, it acts upon matter, and produces changes in its condition. It composes various forms and substances, and changes their sensible properties.

But each element of simple matter is averse to all change ; whence then the changes called chemical ? These are effects ; do they exist without a cause ? If so, other effects may exist without causes ; a mass of gold may exist without an atom, and zinc and platinum may be the same metal, though their specific gravity and malleability differ very widely. But no, to admit one effect without a cause would set reason and common sense afloat on a shoreless ocean, without a rudder or a compass. It would unphilosophize the best philosophy. We must admit a cause for chemical effects as well as other effects. If the cause of those motions were material (Aph. 2.) then the matter which produces them, might be accumulated till, like other matter, it would become cognizable by one or more of the senses, independently of other matter. But it never is so recognized ; therefore though chemical affinity exists, it is not a material substance (Aph. 2.) but a motive power. (Aph. 3.)

Life. Every reflecting observer well knows that simple matter is entirely disinclined to motion. Inaction is one of its universally admitted properties. It moves only when acted upon by some efficient power. Well, we find certain combinations or arrangements, as the bodies of insects, brutes and men, in constant motion. What is the cause ? If material, as the horses that draw the carriage, the steam, wind or water that propels the machinery, we might detect it by our senses. But no accumulation of the powers that move animal bodies,

can ever render them cognizable, *per se*, independently of matter, to the senses. Yet they do exist, or here is an infinity of the most manifest, astonishing and interesting effects without a single cause! It cannot be; as reasonably might we expect to see a body without matter, as walking and talking, and thinking and writing without a motive power. It exists as certainly as the body, and for the same reasons; that is, as is proved by the same evidence, the evidence or certainty of effects which are always guarantees, of the existence of causes. Though it may sometimes be present without exhibiting effect, (Aph. 9.) yet, it can never exhibit effects without being present.

APHORISM 12.

Distinctions among the motive powers. The motive powers produce all their innumerable effects, by the simple processes of attraction and repulsion. They are distinguished from each other, not by any examination and comparison of their essential atomic nature, but by the substances on which and the manner in which they operate.

Gravitation acts at great distances, upon all bodies and with a power exactly proportionate to the quantum of matter in each, and the centre of motion is always in the centre of balance between the bodies attracted. Thus the centre of motion between the sun and the earth, is about one millionth of the distance from the centre of the sun to that of the earth; and that of the earth and the moon is about one fiftieth of the distance from the centre of the earth to that of the moon; because the sun is about a million of times as heavy as the earth, and the earth about fifty times as heavy as the moon.

Chemical affinity acts at short distances if at all beyond actual contact, makes selections among the different objects it attracts, utterly rejecting some, and holding others with tremendous power, and all this without any known regard to the quantum of matter they contain. It also attracts substances in such directions and arranges them in such order, as to produce certain specific and definite forms, called crystals.

Life also makes a selection among the objects of sense, of substances suited to its purposes, but it never, like gravitation, conglomerates them in confused masses, nor, like chemical affinity, arranges them in crystals, nor unites them in known definite proportions: on the contrary, it constructs what are called organizations—bodies or machinery peculiar to its capacities and powers, and then, instead of remaining quietly in those bodies, it keeps them constantly in motion. Bodies that acquire their magnitudes merely by accessions to their external surfaces, and possess no power of external nor internal motion, are called inorganic; those that commence with a determinate character in miniature and acquire their magnitude by accessions of material, through the medium of a fluid circulation to each and

every portion of the mass, and possess the power, in vegetables of internal, and in animals, of external motion, or called organic. Of the many vital entities, I shall speak hereafter.

As to the compound powers,

Light, while it is proved by its extension from luminous points to be motive, and by the eclipses of Jupiter's satellites to move at the rate of twelve millions of miles per minute, is also proved by the momentum of its rays on the retina of the eye, and by its chemical effects on other substances, to be a material substance, as well as a motive power.

Caloric is also proved by its radiation and momentum, and by its power to expand other bodies and to produce chemical changes, to be both a material substance and a motive power, or, perhaps more properly, a union of a material and a motor, while, by the fact that it can exist without light, as in many chemical operations, and that light can exist without heat, as in phosphoric wood, &c., and that light displays the colours, and heat does not, it is clearly proved that they are not the same. But what is the nature of this evidence which no man in his senses will dispute? It is all drawn from the different effects produced by the operations of these powers—operations which constitute the connexions or relations between what we commonly term cause and effect, and this is among the strongest of evidences.

Electricity. The fact that this essence is every where present and constantly in motion, and keeping other materials in motion, is proof ample that it is a motive power; its severing wood and other non-conducting substances and setting them on fire by its friction, prove it a material substance, whilst its impatience of restraint, and violence of reaction after confinement, and its production of heat in no other way than by friction, distinguish it from caloric. It is supposed by modern philosophers, to be identical with

Magnetism, a motive power about which I have as yet said nothing, and perhaps they will think that I may as well continue silent. I shall, however, take the liberty to remark, that magnetism, is a motive power distinguished from all others, by giving polarity to the needle. I am aware that M. Ampere and his followers in Europe, and Professor Locke and his America suppose that they have demonstrated the identity of electricity and magnetism. I do not venture to say they are not the same, but the evidence to prove it adduced by those philosophers, is not sufficient to settle the point in my mind. The argument that each may be rendered manifest by the operation of the instruments and agencies prepared to excite the other, may prove nothing more than that both may be excited by friction, and that the friction produced by either is sufficient to excite the other. The fact that, when opposed to each other, as when electricity changes the poles of the magnet, the stronger prevails over the weaker and counteracts its tendencies, and when united as in making

a magnet with electricity, the combined power is far greater than either of the simples, is a much stronger proof that they are different powers that may or may not harmonize in the production of the same results, than that they are identical, and their different effects the results merely of their different modes of action. But I am willing that enlightened experience should decide on their identity if it can. One thing is certain; they are both motive powers, and while magnetism, as such, exhibits none of the properties of matter, electricity as such, exhibits nearly all of them.

The motive powers then, are distinguished by their different kinds and degrees of action on the same materials, and it is this difference that constitutes the basis of all change in the universe. One motive power acts till a superior comes along and overcomes its action. This latter acts strongly at first, in most cases gradually diminishing, by a law of its nature, till it falls under the dominion of some other power, when another change takes place, and so on, ad infinitum, for, though the tendency of all present combinations of matter is to ultimate destruction, yet, the day will come, "when the heavens shall be rolled together as a scroll, and the elements shall melt with fervent heat, and the first heavens and the first earth shall pass away," but a new heaven and a new earth shall be formed which shall continue for ever. Yes, and our own motive powers too shall be united with new bodies which shall never more know change.

It is further manifest that, by avoiding the influence of superior forces, we may preserve our life and health to the period allotted for their continuance, and, by counteracting such forces when they have actually beset us, we may often restore health to the body, even after it has been seriously threatened with dissolution.

Aphorism 13.

Nature of Evidence. From Aphorism 9 to 12 inclusive, I have shown that the evidence by which we expect to decide any question, should always correspond to the nature of that question; in other words, that the evidence which decides the existence of matter, in masses sufficiently large to affect some of the senses, may be its direct effect upon the senses, while that of chemical analysis and of reasoning on the relations of cause and effect, may as certainly decide on the existence of portions of matter too minute to affect the senses: and that the effects produced on matter by immaterial agencies, do as surely demonstrate both the existence and the specific character of those agencies, as the senses, &c. distinguish the being and properties of matter. The arguments and facts there adduced moreover, prove it as unphilosophical to expect to demonstrate the existence and properties of the one by the same evidences that we rely upon to prove those of the other, as it would be to undertake to prove the identity of things which we absolutely know to be different. Much of the confusion so manifest among reasoners of high repute

for science and learning, arises from the indistinct views they entertain in relation to the nature of the evidence on which they should found their reasonings on different subjects. We cannot, therefore, be too careful, in our scientific researches, to experiment with means and reason upon evidences, suited to our object; and, in our decisions on the discoveries or experiments or opinions of others, to give credit to those facts and arguments, and those only, which bear upon the case. There is scarcely any position in science, that will not admit of many evidences and modes of proof, and all important questions should be submitted to as many of these as our time and circumstances allow, before we settle them for ever in the mind.

Aphorism 14.

Science. This word is derived from the Latin verb *scio*, to know, and literally signifies knowledge of any kind. In its most liberal sense, it signifies truth of any and every kind. Dr. Abercrombie defines it "the established relations of things." In a restricted sense, it signifies all those objects, laws, and operations which unite in the production of a particular result or a connected series of results; as the science of geometry includes the consideration of the earth, and the laws, rules, or principles which enable us to measure it. Astronomy comprehends the consideration of the heavenly bodies, and the powers which produce, and the laws which govern all their motions. Architecture implies the knowledge of building materials and the principles of proportions, &c. by which they are united in buildings.

Science in general may be defined, the principles which govern the operations of nature or of art. Particular sciences comprise only those principles which direct and govern these operations in the accomplishment of special ends; as mineralogy, botany, zoology, &c. The term is sometimes restricted to the arrangement by men, of the objects of science into classes, orders, genera and species. Thus we say that Linnæus was the first who reduced the confused elements of botany and zoology to something like a science.

The application by men of the principles of science to the ends they are capable of producing is called *art*. When the principles and the application are alike independent of men, as in astronomy, the science is called natural; when the principles are established by man, as in architecture, which proceeds from his fancy and varies with his taste, the science is artificial. Most sciences suggest and govern an art, as the principles of colours do the art of painting, and those of geometry teach drawing, &c. But truth alone is true science.

All the principles that belong to the same science, must either perfectly harmonize with each other in the production of definite ends, or they must counteract each other after such fixed laws as to tend uniformly to the same result; as the course of the planets is regulated by the opposing forces called centrifugal and centripetal.

Aphorism 15.

The connection of the sciences. From the preceding proposition, it is clear that the more thoroughly we are acquainted with the principles of general science, the better we shall understand those of any particular science—in fact, that it is impossible to know much about any one science without also knowing many of the principles involved in others; hence, the vast importance of rightly commencing and systematically pursuing a course of scientific study.

TO THE PUBLIC.

After maturely considering the propriety of reprinting and publishing the Lectures of my friend A. Curtis, M.D., I have come to the conclusion of doing so for the benefit of my fellow creatures, as it places before them the confessions of some of the first (so called) medical men, and in which it is clearly proved that they were educated in schools of deception, and the knowledge they attained instead of helping to prevent and cure disease, served only in many cases to drain their patients of their money, or to render their lives too frequently a burden to themselves; for the administering in such wholesale quantity and quality all sorts of mineral, animal and vegetable poisons, could not in reason be expected to produce any but fatal results: their professors should have taught them that poison administered in small quantities impaired the health, and in large or a repetition of small ones inevitably destroyed life. Those who have been and are still in the habit of giving such poisons, are in the sight of God and man guilty of murder: as it is evident by their administering their long gallimaufry of poisons, they not only destroy the bodily powers but impair the faculties of the soul, at the time when they are about to render up to their Creator the life he bestowed upon them, and what a melancholy thought is this. The poor patients after having been through life goaded on by having their passions stimulated by the use of poisonous meat and medicines, and led to the commission of sins and iniquities, find at the last, that these dreadful remedies have left them without power or reason, and frequently not only cut short this life, but endangered the prospect of enjoying a happier one in the world to come.

Since I discovered the Vapour Bath, the use of all poisonous minerals and vegetables can be dispensed with both as food and medicine, which I have clearly proved. If the medical men will adopt my system of treatment, I am willing to lay all my discoveries open to them, and will prove all my assertions. If they will not accept my offer I hope the government and the corporations will, while life and

health remain I am willing to do what I can for the benefit of the public.

I have not failed to notice the violent perecution I have endured in my day from the illiberal of the profession, as well as the kindness of those patriotic medical men who have lent me their patronage and support in my new and successful medical treatment.

I have laboured with indefatigable zeal ever since I discovered the cure for Scrofula. I have a letter from Mr. Colquhoun's agent in America (see page 20) informing him I had made twelve excellent cures of Scrofula, he read the letter to a company at dinner, and observed if I could cure Scrofula I should save the British nation; he got me ninety-eight cases mostly of a hopeless description, from the different London Hospitals and Dispensaries, the whole of which were cured in twelve months, some in three, others in six.

The medical men told me if I succeeded in curing these cases, they would give me the credit of so doing, but when I requested them to give me a certificate stating that I had been successful in the treatment and not one case had failed of being cured, they refused to do so unless I would first disclose to them my method of cure and treatment. Mr. Colquhoun was so disgusted at such unfair treatment, that he said that if he had fifty years to live, he would employ them in writing against the medical men for taking peoples' money under the pretence of performing the cure of a disease, when they confessed they knew nothing about it.

Mr. C. was the first to form a Committee, and for twenty-six years they have laboured indefatigably to render my discoveries beneficial to their fellow creatures, and make them more known to the British Public. I can with feelings of deep gratitude return them my heartfelt thanks for the success I have met with through their assistance.

Mr. Whitlaw having brought a copy of Dr. Curtis's Lectures from America, with the intention of reprinting the same for the information of the English Public, discovered while the work was at press that one sheet was wanting, which he regrets, aa it prevents his giving the whole complete.

Holborn, London.
May, 1847.

DEAR SIR,

Having for upwards of twenty years been an observer of your zealous endeavours to introduce a better system of Agriculture into this Country, as being calculated to improve and benefit the general health of the people; as well, also, of your exertions and desire, by the invention and introduction of your Medicated

Vapour Bath, to remove prevalent diseases and further improve the health of the community in general, I avail myself of this opportunity of recording my opinion of them. I can also testify to your assiduity and exertions in the cause of the poor and labouring classes, who were admitted patients to the "Medicated Vapour Bath Institution," of which I was a member for many years. The efficacy of the remedies, and the mode of treatment for the disorders which came under notice, but more particularly that of Scrofula, was fully established in the cures effected. The benefit of the system and the medical discipline proved so highly satisfactory, under all circumstances, and under the most searching investigation, that the result cannot be too widely known, both as proving beneficial to the afflicted and redounding to your credit and ability.

I have had ample opportunity of reading your work entitled "New Medical Discoveries," your translation of "Linnæus's Materia Medica," "The Causes and Effects of Inflammatory Fever, &c.," and your "Code of Health founded on the Mosaic Prohibitions," and although I do not feel competent to offer such an opinion as a medical man could do on those works, yet of the great object you had in view there can be no question—an endeavour to enlighten, inform, and improve the community on the subjects treated therein.

The introduction of the Vapour Bath, by yourself, into this Country and America, has been productive of very beneficial results; its invention has been termed by Dr. Ireland of New York, a "simple, efficient and happy invention," of which "its usefulness as a remedy in the practice of medicine and the cure of disease, is not to be calculated." It is to be regretted that the author of an invention of so useful a character to the community, whose whole time for so many years has been devoted to the relief of suffering humanity, and whose success has been so manifest in the cure of so large a class of disorders, some of which have been hitherto deemed incurable, should, comparatively, have met with so little encouragement or substantial proof of reward, to which as a public benefactor he is entitled,—for inventions of less general utility and advantage to the public, there have been acknowledgements and rewards both public and private, but if they fail to bestow them upon you *here*, you have still the inward satisfaction of knowing that having laid yourself out for the benefit and advantage of your fellows, at a great sacrifice of time and money, a reward awaits you *hereafter*, not dependent on the great or the rich.

I am, my dear Sir,

Your's most truly,

FRANCIS WARR.

To Mr. Whitlaw.

FINIS.