PART SECOND.

REVIEWS.

An Investigation of the present Unsatisfactory and Defective State of Vaccination, &c. &c. By Thomas Brown, formerly Medical Practitioner in Musselburgh. 8vo., pp. 139. Edinburgh: Maclachlan, Stewart, & Co. 1842.

The small-pox might still be raging as destructively as ever, but that inoculation, at first denounced as the height of wicked presumption, received the patronage of royalty, and was enabled thus to withstand the first efforts made to crush it, and gradually pushed itself into its just position. The same violence and prejudice that opposed inoculation, met vaccination on its introduction, and never was the truth of the saying, “that a prophet has no honour in his own country,” better exemplified, than in the case of Jenner. Not that all were insensible to his merit, but that those public bodies who should always be like out-posts in the field of science, the first to welcome those who come with fruits gathered in the vast unknown country that encircles the little island of knowledge—the Royal Societies and the Colleges, lavish of their patronage when not wanted, and when it rather encumbers than assists, found it indecorous to countenance so strange an innovation as that of Jenner. The Royal Society refused his communication on cow-pox, and bid him beware of tarnishing his reputation. The College of Physicians were too tight-laced in their rigid rules of form to admit him—the greatest physician this country has yet seen—as a fellow. The Board of Inoculation doggedly refused to adopt his improvement, at a time when the Spanish government had circumnavigated the globe, to disseminate the antidote to the most wide-spread and destructive plague,—at a time when deputations from the North American Indians had met others from China at the feet of Jenner, to thank their Great Father for the discovery He had enabled him to make—when the name of Jenner was omnipotent, even with Napoleon—when his passport was more respected in Europe than that of any king or emperor:—in short, after he had conquered the world and won its homage, he still found a stubborn band of obstinate enemies at home, whom no amount of evidence could convince—no mildness of his could temper—and as our
author with evident self-complacency reminds us, foremost in this band, stood Mr Thomas Brown. The fact, indeed, might have been forgotten; for, if his letters of that day were no better than those he has just published, they would in all probability have been consigned to oblivion; but that having fixed his barbed arrow in one who must ever live, he has won for himself a certain degree of consequence not perhaps very enviable. This is conferred by a published letter of Jenner's, in which he thus speaks of a newspaper communication of Mr Brown's:—"His letter, under the veil of candour and liberality, is full of fraud and artifice; for he knows that every insinuation and argument has been refuted, both by the first medical characters in Edinburgh and Dublin, and, indeed, by many others," (Baron's Life of Edward Jenner. London, 1838, vol. ii. p. 47.) We shall not venture to characterize the spirit of the letters now before us, but shall content ourselves with making one or two extracts to enable the reader to judge for himself how far advancing years have sobered the judgment and tempered the language of our author.

First, His claim of merit:

"But this merit (?) at least these letters will establish most distinctly,—the priority and explicitness of my claim of challenging and proving, that the anti-variolous powers of the Jennerian discovery were found to be partial, feeble, and temporary, in a regular medical investigation, upwards of thirty years ago; and that I cannot, and will not tacitly permit any medical practitioner whatever, to come forward and repeat such statements concerning the deficiency of vaccination, without making the smallest allusion to the fact, that they were all distinctly stated by me in that inquiry." Pp. 9, 10.

Second, Horrid spirit of the profession.

"Upon no other occasion, Sir, have the medical profession shown more dogmatism or want of candour; for, although the science of medicine is of difficult and accurate observation, and that a thousand errors may be committed, and thousands of our fellow-creatures may perish without our perception of ignorance or guilt, still these do not afford any satisfactory excuse for our determined and obstinate adherence to maintain the character of vaccination, not only by a total disregard of every adverse fact, however true, and however strong and important; but even with the horrid spirit of treating with contempt any member of the profession who dared to challenge the anti-variolous powers of vaccination." P. 11.

Again, speaking of vaccination, he characterizes it as a practice,

"in which I felt convinced, so many inconsistencies, contradictions, and imperfections existed, and which now stands convicted in the judgment of the whole candid and experienced members of the medical profession, of being unworthy of farther confidence, unless some expedients can be devised which shall remove all the objections the Jennerian discovery is now liable to." Pp. 12, 13.

Our author concludes this dignified epistle by approaching the subject on which it is avowedly written, and proposes a series of
questions regarding the immunity afforded by cow-pox—whether it is permanent or temporary—whether re-vaccination is advisable—and if it is possible to improve cow-pox virus so as to render its effects more permanent.

It would be an abuse of the reader’s patience, were we to follow Mr Brown’s rambling observations, destitute as they are of plan, and disfigured by the most disparaging observations on Jenner, and all who believe in vaccination. We shall be content with an extract which may serve to expose his conclusions.

"From the whole history, statements, and opinions, concerning the origin and practice of vaccination, it seems proved, that the vaccine does not possess any greater specific or permanent influence over the human body, than what is, and may be possessed, by many other kinds of virus; and also, that many diseases and local affections may, and do possess, such a specific influence against the influence of other diseases, as the vaccine does exert against the contagion of small-pox; and in proportion to the extent of these actions, so may the extent of their power of prevention be calculated. Indeed, there is reason for concluding, that the anti-variolous power of the vaccine, arises more from possessing what may be denominated a sedative power over the human body, than any quality arising, either as being a direct antidote, or possessing a similarity of character to the small-pox." Pp. 46, 47.

Again,

"And such has also been the increase in their severity, that not only now, but for many years past, the fatal effect of small-pox succeeding to vaccination, actually exceed in the proportion of twenty to one, those which were found to attend the practice of inoculation. And to all this must be added, the ravages of the epidemic, which now approach very near to what they were before the introduction of the Jennerian practice, and have put an end to the fond hope of destroying the existence of the variolous epidemic. "It is distinctly ascertained, that the whole of the foregoing conclusions apply and correspond exactly with the accounts received concerning the vaccine practice from every quarter of the world, wherever it has been practised to any extent; and in warm latitudes, more especially, the powers of the vaccine appear to be so feeble and temporary, that the idea of permanent security is not only abandoned, but the practice of vaccination nearly given over.

"It is proved beyond all doubt, that all the excuses for defeating all proof adverse to the absolute security by vaccination against small-pox are miserable and contemptible; not exempting that most false and foolish of all—that the recurrence of a second attack of small-pox are as frequent, and as likely to occur—however severe the first attack may be, as those cases which have succeeded to vaccination." Pp. 48, 49.

So, after all, vaccination turns out also to be a bubble, and Mr Brown has the merit (to use his own favourite word) of exposing and bursting it. It is singular, indeed, how mankind can be deluded into the belief that they have got rid of an enemy, which, according to our author, is still, with even more than former malignity, lurking in their bosom. Strange and melancholy infatuation! Mr Brown says, that vaccination is merely a soporific—truly a most effectual one—for it seems to have steeped in
forgettable the senses of all who have meddled with it, and robbed them of the power of recognising the horrors of the small-pox. What have we to oppose to these startling statements of Mr Brown? We may state one or two facts which touch each of these heads, and show that, even supposing the immunity derived from vaccination to be very greatly less than that afforded by inoculation, yet the former is infinitely preferable to the latter; that, in fact, inoculation, in the present state of our knowledge, is wholly indefensible, and those who practise or advocate it, are incurring the heavy responsibility of hazarding the lives of thousands to gratify their whim or vanity.

It really requires some power of gravity to sit down at this time of day, to adduce proof in favour of this proposition; it is like attempting to prove a truism, seriously to demonstrate that the small-pox is a great evil,—that however men's tastes may differ about beauty, in this they all agree—that it never is enhanced by the scars of the small-pox; and yet the proposition that the cow-pox gives immunity to the small-pox, is about as universally received. But to the proof.

In the investigation of this subject, we require to begin by examining how far small-pox gives immunity to small-pox; and we shall find that this is by no means absolute. There are many examples on record of those pitted with small-pox, who again took the disease, and died in consequence. We shall mention one or two. Mr A. K. Lindsay reports, that a Lissahee who had had small-pox four years previously, which had left distinct marks, took it again in 1830, and died in consequence. (Calcutta Transactions, vol. v., p. 405.)

In the very fatal small-pox epidemic which ravaged Norwich in the year 1819, ten cases of secondary small-pox are reported to have occurred. Of these three were fatal. (Edinburgh Med. and Surg. Journal, vol. xvii.)

Out of twelve cases of small-pox, related by Dr Samuel Hill, assistant-surgeon to the forces in North Britain, there were—Of the unprotected, 1—affected with distinct variola, 1: vaccinated, 5—modified and mild, 5: who had had small-pox, 5—severe, 4, fatal, 1.

In the Royal Military Asylum at Chelsea, from 1803 to 1833, 26 out of 2532, who had small-pox before, took it over again. Of these 3 died. Dr Thomson (Historical Sketch of Small-Pox; 1832, p. 279) mentions having seen 836 cases of small-pox in Edinburgh, out of which number 71 had passed through small-pox previously, and of these 2 died.

It would be very easy to multiply examples, but these are quite enough to prove that small-pox does not give absolute and complete immunity to small-pox. There are not tables sufficiently extensive to determine, with certainty, the comparative
protection afforded by vaccination and inoculation. So much, however, appears made out, that the cases of small-pox which occur after vaccination are not more dangerous—probably they are less dangerous—than those which occur after small-pox. According to the observation of Dr Thomson, while out of 71, who took small-pox a second time, 2 died in consequence; out of 484 who took small-pox after having been vaccinated, only 1 died. We have also the testimony of Dr Baron, whose connection with the small-pox institution gives great weight to any statement he makes, that he never saw but one fatal case of small-pox after vaccination.

Assuming, then, that neither inoculation nor vaccination affords perfect security against the small-pox, let us balance the risks and advantages attached to the one against those attending the other, and examine the result. Suppose we admit, which we do in absence of all proof, that the security afforded by inoculation, over that afforded by vaccination, is as twenty to one, let us see how the account would stand; and to determine this, consider the comparative danger of the two methods. First, with respect to the direct dangers of inoculation; according to Dr Brown, the deaths from inoculation are as one in 600; and as this estimate is given by Woodville, (Reports on Cow-Pox, &c., p. 151,) and sanctioned by Williams, (Elements of Medicine,) we may adopt it for the basis of our calculation. According to the report of the committee appointed at Paris to investigate the dangers of vaccination, (see Chappon Traité Historique du Danger de la Vaccine; also Sacco Trattato della Vaccinazione,) it would appear that in all the reputed cases of death from vaccination, there had been complication with other diseases; and admitting all the deaths that followed to be the consequence of the operation, it would give a proportion of deaths as 1 to 54.793, compared with the danger of inoculation as 1 to 81; so that for every individual who has died of vaccination, 81 have died of inoculation. So much then for the direct danger; supposing that inoculation gave 81 times more protection than vaccination, we should not be entitled to adopt it, because we should certainly sacrifice as great a number in the application of the remedy as would be exposed to the chance of dying from our neglect of it.

Such are some of the direct evils resulting from inoculation, whereas the good of vaccination is unmixed, and affords instances of the perfect disappearance of small-pox for a series of years through its agency. Thus, in Anspach in Bavaria, in the years 1797-98-99, 500 died yearly of small-pox, and in 1800 no less than 1009; whereas, from 1809 to 1818, there was not a single death from that disease, although it prevailed epidemically in the neighbourhood. (Edin. Med. and Surg. Journal, vol. xvii.) In Copenhagen, in 12 years before the in-
Introduction of vaccination, 5500 persons died of small-pox; from 1802 to 1818, a period of 16 years, after vaccination had been peremptorily insisted on, only 158 died of it over the whole of Denmark. Lezay Manerzia, prefect of the Rhine and Mosel departments, published in his report for 1810, that in his district not a single case of small-pox had occurred since vaccination had become general, and, in consequence, the population had increased to the amount of 9911; in Rouen, the mortality had decreased 500 annually from the effects of vaccination. In the Paris correspondence on vaccination, 5552 cases are related of children who had been vaccinated and afterwards exposed in all possible ways to the contagion of small-pox with perfect impunity; in Glasgow 15,500 had been vaccinated, and during ten years previous to the time the report was made, no individual of that number had been affected with small-pox. Let us remember that had these children been inoculated, twenty-five of them would have died in consequence of the inoculation alone. Nevertheless, according to Mr Brown, "it cannot be expected that reasonable beings shall continue to have confidence in a practice which has proved completely ineffectual for the purposes it was intended to accomplish!"

Let us now consider the indirect dangers of inoculation. Very frequently inoculators have introduced this terrible plague into districts before free from it, and the consequences have been such as should terrify any one not so wedded to a preconceived opinion as to be blind to the scenes of death his criminal persistence in error had occasioned. From the account of the Norwich epidemic, it appears that four out of five parishes in that neighbourhood were indebted for small-pox to irregular practitioners who went about inoculating. From the foci of disease which these misguided men introduced, the plague spread like wildfire in all directions, and destroyed 530 out of 3000 who were not protected, and yet Mr Brown can seriously recommend the practice! We have lunatic asylums to restrain the mad from mischief,—we have lazarettos to confine the bearers of the plague,—is there no restraint for the spreaders of a malady, which, if not quite so often attended by death as the scourge of the east, is even more loathsome, and sometimes leaves its victims who escape death to envy those who die? Indeed, when we observe the beneficial results that have followed despotic measures for the enforcement of vaccination, as in the case of Denmark, Bavaria, and Russia, we almost regret that similar steps have not been taken by the government at home; but it is the peculiar privilege of an Englishman to go to destruction in his own way, and nobody has a right to interfere.

We conclude then, first, that even did inoculation afford eighty times more security than vaccination, the certain and direct
dangers flowing from it are so great as to render the practice quite unwarrantable; and, second, that even were the direct dangers comparatively trifling, yet the possible and indirect mischief attending it would of itself be sufficient to condemn the practice.

The third letter contains some valuable precautions to be attended to in vaccinating, valuable, not from their novelty, but from being the result of the author's own experience, which, in this case, corroborates that of others. In this letter are also detailed some experiments, showing the mutual influence of vaccine and variolous virus simultaneously introduced into the system. The results coincide with those obtained by Dr Woodville, and other experimenters.

The letter terminates by jumping at certain conclusions which never could have been suggested by its simple perusal. The most important is, that the efficacy of vaccination is not permanent; another is, that if we divide society into six classes, three-fourths of the three lowest (or about a third of the total population) will be found to have undergone the small-pox before they reach the age of twelve years. This latter assertion we dismiss with a simple denial and a demand for proof, for surely Dr Brown, himself so avers "jurare in verba magistri," cannot expect that we are to take his opinions on trust, opposed, as they are, to the universal belief of others, unless he gives us a specimen at least of the facts from which they are derived.

The former proposition, however, is not so easily dealt with, as in it we have to do, in a great measure, with negative evidence, which is always more fallacious and more difficult to estimate than positive. The question is, To what period is the immunity afforded by vaccination extended? At the outset we are met by the same difficulty we had before to encounter—What is the immunity afforded by vaccination? Out of 100,000 vaccinated persons, how many are liable to be affected with small-pox? On this subject the evidence is conflicting and unsatisfactory in the highest degree. We find, for instance, that Miss Bailey, a zealous vaccinator, offered a reward of five shillings to every one who could produce an instance of small-pox after vaccination, and out of 2600 cases, only one claimed the reward; and we have the 5552 cases of vaccinated children in Paris, and the 50,500 in Glasgow, exposed to small-pox without one being affected with the disease. We find, on the other hand, Mr Cross of Norwich concluding, from extensive experience, that about one in fifty may be susceptible of modified small-pox (Edin. Med. and Surg. Jour., vol. xvii.), and it appears from a report on the effect of vaccination, as performed in the Prussian army, that out of 42,041 vaccinated, 31 took small-pox, giving a proportion of 1 to 1374 (Kleinerl's Repertorium, 1840.) There is no doubt that a
very considerable number are capable of taking vaccinia over again. Thus, from the last named report, it appears that out of these 42,041 who had been vaccinated, 33,819 had distinct cicatrices, 5645 indistinct, and 2577 none at all. When all were revaccinated, in 14,252 it produced no effect, in 19,117 it ran its ordinary course, and in 8672 it was irregular. Whether all those in whom vaccination took effect would have been susceptible of either the contagion or infection of small-pox, it is impossible, with certainty, to say; but it seems highly improbable. In the report published by the managers of the vaccine establishment at Vienna (Die anomalien der Schutz-pocken, von M. Viszanik und A. F. Zöhner,) although tables are not given, it is mentioned generally, that the numbers re-vaccinated with success was great, and the report recommends, "when small-pox rage, it is well to re-vaccinate all who are exposed to the contagion." When we consider that vaccination is attended by no danger and small discomfort, the propriety of adopting it in every case of unusual exposure to small-pox, must, we think, be admitted by all; and the reasonableness of the measure is shown by the fact, that the seven fatal cases of small-pox that occurred in the Prussian army were all among those who had not been re-vaccinated, in all of whom the disease occurred in its mildest form.

We conclude, then, that in absence of sufficient evidence to determine the permanent or transitory character of the effects of vaccination, it is safer practically, although perhaps not so philosophic considering the matter analogically, to adopt our author's view of the more or less insufficient nature of the protection afforded by vaccination after the lapse of years, while, at the same time, there is no ground whatever for his dogmatical assertions of the complete evanescence of the protective influence after five, or any other limited number of years.

We are inclined fully to agree with the opinion of our author, expressed in the fifth letter, that there is no degeneration of the vaccine through repeated use. We adopt this opinion, first, Because there is no positive evidence for such degeneration; second, Because it is against all analogy with other infectious diseases, such as syphilis, itch, &c., that it should have degenerated; third, Because if its degeneration be the simple consequence of transmission, it must have been manifested long ago, for soon after the introduction of the process, many hundred thousands were inoculated from one source, and yet no difference between the first and last vaccinated was observable, and equal protection was afforded to all; fourth, The occurrence of cases of small-pox among those vaccinated when a small-pox epidemic is raging, seems to depend, as Dr Thomson observes, more upon the extreme severity of the small-pox than upon the degeneration of the vaccine, because when such cases
are met with, they occur also in those who have had small-pox, which no one imagines to have degenerated.

On this subject there are some very interesting observations by Drs Viszanik and Zöhner. Having procured some vaccine matter from a cow, they applied it to a child, and observed the difference between the appearance of the eruption so produced, from that arising from the application of ordinary vaccine lymph. They found that the swelling and inflammation were considerably greater in a child thus vaccinated; and when they vaccinated other children from this child, the peculiar appearances gradually disappeared, and soon the eruption assumed a perfect similarity with that commonly observed. Hence they were of opinion, that vaccination as it occurs in man, is different from the disease of the cow; that it is naturalized, as it were, and assumes certain characters, which, though they indicate difference, by no means indicate degeneration, for the humanized vaccine has the power of producing a disease similar to itself, and which gives immunity to small-pox, as certainly as the vaccine virus from the cow produces the modified disease in man. The fact of vaccine matter producing a spurious eruption in India, may be much better explained, by supposing that a chemical decomposition of the virus had taken place, than that there had been what is properly called a degeneration of that, because the effects produced were much more analogous to those of corrupted animal substances, than of specific animal poisons; and also because this spurious eruption was not gradually developed by the transmission of the disease through a number of persons, but rather spread rapidly from a common source.

After having noticed the three grand practical questions—the value of vaccination—the propriety of revaccination—and the non-degeneration of the vaccine virus—it only remains, before concluding the practical part, to say a few words on the means of ascertaining good lymph, and the genuine vaccine eruption. The chief thing to be attended to in the selection of the lymph, is that it should be taken at an early period of the disease, and that it should be tenacious and clear. The characters of the true vaccine eruption are very well described by our author, who observes,

“If, upon the introduction of vaccine virus, a vesicle is produced, and followed with more or less of a circular inflammation, and this continued for two or three days, with or without any symptoms of constitutional derangement, we may conclude that the vaccine process has exerted every effect upon the human body it is capable of; and, if the vesicle should remain whole, afterwards form a dark-coloured scab or crust, which in a week or two drops off, and leaves a scar or cicatrix, we may consider the disease has run its proper and natural course. And when the tests of inoculation with small-pox, or exposure to the epidemic disease, are afterwards employed, the individual is found to resist both.” P. 40.

The next question of interest that meets us, is whether vacci-
nation and small-pox be identical, or the one only a modification of the other. Our author, indeed, disposes of this in a most summary way, with a few hard epithets about its being ridiculous and absurd, &c. Such terms being the usual weapons of ignorance against truth, their weight in a scientific inquiry, if indeed they have any, is always in favour of the party attacked, because they are seldom had recourse to, except in absence of better.

There can be no doubt of the identity of two diseases, if both arise from the same specific virus, and the one passes by insensible gradations into the other. Let us consider what proof we have of small-pox virus—which every one admits to be capable of producing small-pox—being also able to give rise to cow-pox.

The experiments of Mr Ceely, which to the refined taste of Mr Brown, appear "disgusting," seem to have been performed with the same cautious spirit of investigation that distinguished those of Jenner, with whom indeed, if one may judge from that appearance of patient and mature thought observable in his writings, and that modesty, so characteristic of a true philosopher, which forbids him rashly to draw conclusions, or construct theories, Mr Ceely bears a close resemblance. In the last number of the Transactions of the Provincial Association, vol. x., this accurate observer relates a most remarkable example of five out of eight cows which had been exposed to the contagion of small-pox, becoming affected with cow-pox. The circumstances are these:—A very virulent epidemic of small-pox occurred at Oakley in the vale of Aylesbury. The bed on which one of those who died had lain, was hung up on the hedge of a field, into which these eight cows were driven for some days consecutively. The whole five became affected with cow-pox simultaneously, and it did not prevail in the district at the time. Now, it is observed, that when cow-pox appears in a farm, it almost never affects more than one cow at a time, and then it spreads slowly from one to another; so that its simultaneous occurrence in this instance, affords a very strong presumptive evidence of its arising from some common cause; and that this cause was confined to this particular field, was obvious from the other cows on the farm not having been affected. Therefore until we can find a more probable cause than small-pox menam, we may assume that it may have been this, and wait for further evidence to settle the point. We shall find, however, that the presumption is greatly strengthened by the other evidence in favour of the identity of the two diseases.

Mr Ceely made a series of experiments, which were published in Trans. of Medical and Surgical Association, vol. viii. 1840, by which he most conclusively proves, that matter taken from small-pox pustules is capable of producing a vesicular eruption in the
cow, resembling cow-pox, and that lymph taken from this, excites, when applied to man, the true vaccine vesicle. He had before proved, that a similar eruption was excitable in the cow, by the application of the lymph taken from a vaccine vesicle, such lymph as is in common use for the purpose of vaccination. We find, then, that the matter of small-pox, and the lymph of cow-pox, both excite the same disease in the cow, and that the matter of small-pox gives rise, after being modified by the cow, to the true vaccine in man. Can we have stronger evidence of the fundamental identity of the two diseases? The experiments of Mr Ceely are corroborated by those of Dr Basil Thiele of Kusan, Russia, who produced true vaccinia, by inoculating cows with small-pox virus; and from the cow-pox so produced, he again produced true vaccinia in man. A still further confirmation is afforded by some experiments of the same ingenious investigator. He found, that by keeping the lymph from small-pox for ten days, between pieces of glass, and then diluting it with warm milk, it became so far modified in its nature, as to produce a much milder disease than the ordinary small-pox virus. Inoculation with matter so prepared, produces large pustules, and the common vaccine fever appears twice, first, between the third and fourth day, and afterwards more severely between the eleventh and fourteenth. When the process is repeated upon ten or twelve different persons, inoculating one from the other, the eruption gradually assumes the character of true vaccinia, and at length is not to be distinguished from it. Dr Thiele's observations were taken from experiments on about 3000 persons, (vide Zeitschrift fur die arznei-kunde, 19 Jahrgang; Viertel jahr-heft, 15 bogen; also Kleinert's Repertorium, November 1839, p. 1.) These observations are further interesting, as countenancing the opinion that the cow-pox in man is so far an independent disease—a naturalised cow-pox, different in some respects, but fundamentally identical with both the cow-pox of the cow, and the unmodified small-pox of the human race. The observation of Mr Ceely, that lymph taken from the vesicles of the cow at a proper stage, and possessing all the characteristics of perfection, very frequently failed to produce vaccinia in those who were immediately afterwards successfully vaccinated with dry or liquid lymph that had been long current in man, is also in favour of this opinion. We are entitled, then, to believe, that small-pox introduced either by contagion or by infection, is capable of producing vaccinia; and we shall find many examples on record, which our limits do not permit us to detail, in which vaccination produced a severer disease than it usually does, attended with numerous pustules, to the amount of 50 or 60, and a secondary fever—a disease, in short, which it is not easy to distinguish from mild small-pox. So that we find cow-pox pro-
duced by small-pox, and again small-pox, or something extreme-
ly like it, produced by cow-pox; and surely two diseases capable
of reciprocal production, must be essentially identical.

Another subject of great interest connected with vaccination,
is the effect of certain diseases in modifying or preventing it, and
the effect it seems to have upon other diseases. It is found, that
when there is much weakness of the constitution, when the skin
is covered with scales, and when diarrhoea is present, the vaccine
pustule seldom arrives at maturity, and does not present the
characteristic features. Diarrhoea is often combined with affec-
tions of the mouth, and these seem to exert a specially injurious
influence upon the vaccine process, so that vaccination should not
be undertaken until these have wholly disappeared. Another
combination which gives rise to spurious vaccine pustules, and one
which is often very troublesome, is itch. A few days after vacci-
nation, a small itchy vesicle is formed, which soon fills with pus,
and gives rise to an irresistible desire to scratch. The pustule
is surrounded with a lively red margin, and the axillary glands
swell. The spot becomes dry and inflamed, and a wandering
crysipelas often spreads from it in all directions. Such an affec-
tion usually arises in those who have been vaccinated from a child
affected with itch; and it seems probable that it is the conse-
quence of taking lymph impregnated with the virus of the itch.
(Vide Die Anomalien der Schutz-pocken, &c. p. 33.) This latter
observation is particularly interesting in our present state of ig-
norance as to the nature of itch, and whether the contagion is
always communicated by the itch-insect; and it is opposed to the
observation of some experimenters, (vide Köhle's Med. Verein-
sitzung, 1836, No. 9, p. 41; also Henle's Pathologische untersuch-
ungen,) that inoculation with the matter of itch does not pro-
duce itch.

Among the diseases which may be suspended by vaccination,
we find hooping-cough and scarlet fever. (Adams on Morbid
Poisons.) We are told by Baron Larry, that the plague rarely
attacked those who had undergone small-pox; and if vaccinia
and variola are identical, perhaps the former may likewise give
a certain immunity to the plague. Dr Sacco of Milan treated
paralysis of the lower extremities successfully by exciting thirty
or forty vaccine vesicles. Numerous observers have noticed
crusta lactea and herpetic eruptions cured by vaccination. It
has also been observed by a number of experimenters to cure
chronic ophthalmia and some scrofulous affections. Indeed,
Dr Cavon of Annecy (Depart. of Mont Blanc) remarked, that
scrofula had decidedly decreased since the introduction of vac-
cination. This observation has been made elsewhere. Vaccina-
tion has been successfully employed against taenia capitis, and
convulsions of various kinds. Intermittent fevers of long stand-
ing are said to have been arrested by it; and this has occurred in the experience of ten different observers. Various other diseases are reported as having been cured by vaccination. Those we have mentioned, however, have all been observed by numerous and respectable practitioners, and the cases are circumstantially narrated. These, and many other cases, are mentioned in a memoir read before the French Institute, by MM. Berthollet, Percy, and Hallé, in 1812. (See Hufeland’s Journal, vol. xxxvi. p. 110.)

Opposed to these observations, it is right to mention, that the writers of the report of the Vienna Vaccine Institution observe, “We have frequently had occasion to vaccinate those afflicted with herpetic eruptions and chronic scrofulous ophthalmia, in hopes that the vaccination might exert a salutary influence upon these obstinate diseases; but we have found that large boils were the consequence, without its improving the disease at all; on the contrary, it appears to us as if the diseases which slumbered in the organism were excited to more immediate activity by inoculation.” This is a matter of such importance, that we hope it may attract more attention in future; and we have alluded to it here more from a wish to excite interest, than with the hopes of communicating information. The subject is quite overlooked by our author, who is far too intent on exposing the personal affront he received from the National Vaccination Board, to bestow any attention on such insignificant trifles.

In conclusion, we thank Mr Brown for calling public attention to a subject of such paramount moment to the community, as well as of deep interest to science, as vaccination must always be; and while we utterly dissent from him in almost every conclusion he arrives at, and condemn most strongly the coarse and unscientific style in which he indulges, we trust his publication may be useful, by stirring up to greater exertions those whose duty it is thoroughly to understand and defend the system they practise.

Mr Brown may be assured, that although a Voltaire could write down a ministry, it is not for him to write down vaccination; and if he has no better claim to the sympathy and indulgence of the public than his having been among the most vehement opposers of vaccination in its infancy, it would become him to be especially on his guard to avoid every thing that has the appearance of personal pique or petulance, lest the opposition in which he glories, be ascribed, not to an anxious desire of vindicating truth, but to a wish of gratifying his galled vanity, by assuming a position which, from its singularity, must attract some share of public attention. As he cannot be Jenner, it may seem to him the next best thing to be Jenner’s adversary; by assuming a proud tone and high air, and attacking Jenner in his most offensive
Elements of General Pathology. By the late John Fletcher, M.D. Edited by John J. Drysdale, M.D., and John R. Russell, M.D. Pp. 519. Edinburgh: Maclachlan, Stewart, & Co. 1842.

We have read this work with interest and profit; and notwithstanding that it contains some doctrines which appear to us visionary in the extreme, we must recommend it to our readers as well worthy of their perusal. The theories, whatever may be said of their truth, are ingeniously defended; and throughout, the writing of the author and his editors is characterized by great talent and erudition.

The book is divided into three parts:—the first treating of etiology; the second, of semeiology; and the third, of therapeutics. In each of these departments there is a great mass of information brought forward.

The 1st and 2d chapters, along with other interesting matter, contain some curious and important statistics, bearing upon the influence of age, sex, climate, diet, habit of body, &c., as predisposing and exciting causes of disease.

Great Britain, "in spite of its fogs and vicissitudes, so fertile a subject for the misanthrope," is correctly stated to be the most healthy country in the world; and in proof of this statement of Dr Fletcher, the editors give the following table from Bernouilli.

| Country          | Mortality Rate |
|------------------|----------------|
| Spain and Portugal| 1 in 40 die annually |
| Italy, Greece, and Turkey | 1 in 30 |
| Prussia          | 1 in 34:39     |
| Bohemia          | 1 in 34:1      |
| Switzerland      | 1 in 39:8      |
| Russia           | 1 in 32:7      |
| England          | about 1 in 43:7|

P. 6.

The mortality of cities is, in general, found to be greater than that of the country, but from this rule there are some exceptions.
"It is true that the mortality of cities is greater than that of the country; thus,—

| Country      | Mortality |
|--------------|-----------|
| Great Britain| 60        |
| France       | 40        |
| Austria      | 28        |
| Holland      | 48        |
| London       | 40        |
| Paris        | 32        |
| Vienna       | 22        |
| Amsterdam    | 24        |

"But there are some strong facts on the other side. Thus, the mortality of Berlin is not greater than that of Prussia in general; and that of Manchester, the second largest town in England, so far from being greater, is considerably less (not more than 1 in 71)." P. 28.

In connection with the above, the following note is subjoined.

"The comparative mortality of different professions, some requiring a residence in town, others in the country, may be learned from the following.

(Taken from Bernouilli, op. cit.)

| Profession        | Mortality |
|-------------------|-----------|
| Of clergy         | 42        |
| — landed gentry   | 40        |
| — men in public offices | 35 |
| (hoch beamten.)   | —         |
| — merchants       | 35        |
| — military        | 32        |
| — artists         | 28        |
| — teachers        | 27        |
| — physicians      | 24        |

Out of 100 who died of a natural death,

— 42 were above 70,—14 above 80 years old.

"Although the appearance of cotton-spinners, &c. is unhealthy, yet there is comparatively little disease among them. Of 837, whose average age was 32½, 621, or three-fourths, were perfectly well.—Editors.

"In like manner, it is the most common of all possible whims, to represent studious persons as not only exposed to all sorts of disorders, but as very short-lived. But the records of Academies, as well remarked by Alibert, sufficiently demonstrate that there are few classes of men who live to a greater age than philosophers. Nor is it at all incompatible with this fact, that, as observed by Vogel, ‘their faces are generally like triangles, their limbs of oaten straws, their hearts of butter, their stomachs as weak as blotting paper, and their body flaccid, feeble, and marrowless.’ It has been found lately, that the average age of 152 men of science and literature of France, taken at random, was 69 years; and of 20 literary ladies living in this country during last century, the average was 71½ years. (Quarterly Review, No. 99.)—Pp. 28, 29.

We have marked several passages giving a better idea of the work; but these, with a few remarks, we defer till another occasion.

(To be continued.)
1. The Elements of Materia Medica and Therapeutics. By Jonathan Pereira, M.D., F.R.S., and L.S. Second Edition. 2 vols. 8vo, pp. 1926. London: Longman & Co. 1842.

2. A Dispensatory or Commentary on the Pharmacopoeias of Great Britain; comprising the Natural History, Description, Chemistry, Pharmacy, Actions, Uses, and Doses of the Articles of the Materia Medica. By Robert Christison, M.D., F.R.S.E., Professor of Materia Medica in the University of Edinburgh, &c. 8vo, pp. 978. Edinburgh: A. and C. Black. 1842.

3. Elements of Materia Medica and Pharmacy. By O'Brien Bellingham, M.D., &c. Edited by Arthur Mitchell, M.D. Part 1. 8vo, pp. 302. Dublin: Fannin & Co. 1842.

No one who wishes to make himself acquainted with the Materia Medica need be in want of an English book on the subject. Besides many others of acknowledged value, which have been known to the profession for years, we have here no less than three which have issued from the press within the last few months. Of these, one is a second edition of a work in two volumes, which was reviewed in the first number of this Journal. The next is a recently published Dispensatory, complete in one volume. The third is the first part of a systematic work, not yet completed. One is English, one is Scotch, and one Irish. It is not our intention to institute a close comparison of these works; we wish, however, to lay before our readers what we consider to be the characteristic features of each.

The first on our list is Dr Pereira's Elements of Materia Medica and Therapeutics. The rapid sale of the first edition is the best evidence which can be adduced as to its popularity with the profession. For the general characters of the work, we refer to our formerly expressed opinion, (January 1841, p. 33). We then stated, as a decided objection to the work, its containing many things that were unnecessary, which increased its bulk and expense without enhancing its value; but at the same time we expressed our belief that the amount of useful matter which it contained rendered it a desirable book. Our opinion of the Elements is considerably modified by an inspection of the second edition. While we wish that something could have been left out, to obviate its price being raised so high as L.2, 10s., we must own that the greater part of what has been added is really useful, and it is but justice to Dr Pereira's good sense to say that he seems, in several instances, to have withdrawn, in compliance with the suggestions of his reviewers, some of those appendages which, from their inutility, were most objectionable; we must
say, however, that there is room for a little further use of the pruning knife.

The additions which have been made, and which have increased the bulk of these volumes by nearly five hundred pages, will be best made known by the following extract from his preface:

"Among the additions will be found articles on Mental Impressions, Light, Heat, Cold, Electricity, Magnetism, Diet, Climate, and Exercise, considered as therapeutic agents. The processes of the British Pharmacopoeias, including those of the new Edinburgh one, have been described in a more detailed manner. Upwards of a hundred woodcuts have been added. They comprise figures of crystals, and some insects used in medicine, microscopic views of amylaceous grains of commerce, and illustrations of chemical manufactures, and of the modes of preparing some vegetable products."

Of these additions, some of the most interesting, are the diagramatic drawings illustrative of chemical manufactures; which, being carried on chiefly in or near London or other large towns, though their general principles are familiar to all, are in their details unknown. Dr Pereira's diligence in collecting these is most praiseworthy. In fact, diligence, laborious study, and industrious collection of facts are Dr Pereira's great merits as an author. In subjects regarding which new investigations have recently been made, we find that the information is brought down to the latest period. We therefore consider Dr Pereira's second edition as an elementary treatise complete up to the present time, embracing a full view of all that is known on the subject of the materia medica, and deserving, as we are sure it will obtain, a place on the shelves of every well assorted medical library.

Of the new chapters in the present volume we would select that on Diet as a good illustration of the assiduity with which the author has laboured to make the new edition as complete a treatise as possible: and as an example of his method of treating this subject, we extract the section on milk.

"Milk.—Properly speaking, milk should be considered among drinks; but, as it contains a large quantity of alimentary matter, and, furthermore, as it yields some solid foods (butter and cheese), it will be most convenient to consider it here. The composition of several kinds of milk is thus stated by MM. O. Henry and Chevallier:

| Constituents | Cow | Ass | Woman | Goat | Ewe |
|-------------|-----|-----|-------|------|-----|
| Caseum,     | 4:48| 1:82| 1:52  | 4:02 | 4:50|
| Butter,     | 3:13| 0:11| 3:55  | 3:32 | 4:20|
| Sugar of Milk| 4:77| 6:08| 6:50  | 5:28 | 5:00|
| Various Salts| 0:60| 0:34| 0:45  | 0:58 | 0:63|
| Water,      | 87:02| 91:65| 87:98 | 86:80 | 85:62|
| Total       | 100:00| 100:00| 100:00| 100:00| 100:00|
| Solid substances, | 12:98| 8:35| 13:00 | 13:20 | 14:38|

"The nutritive principles of milk are (excluding water), caseum, butter,
and sugar of milk. Perhaps the phosphate of lime found in milk, ought to be considered as an aliment for young animals; inasmuch as it is necessary to the development of their osseous system. For the most part milk is readily digestible; but, with adults, this is by no means universally the case. With some dyspeptics, it proves heavy and difficult of digestion. I find that those with whom it disagrees are obnoxious to the use of butter; whence I infer, that the injurious qualities of milk are ascribable to the oily constituent; and, with such patients, ass's milk (which contains little butter) usually agrees.

"The quantity of nutritive matter contained in milk, varies not only with the species, but with the individual,—nay, with the same individual under different circumstances. The quality of the milk is affected by constitution, age, food, period after parturition, mental emotion, disease, the use of medicines, &c.

"Dr Young found, that a bitch fed on vegetable aliment yielded an accestant and spontaneously coagulable milk; but, when animal food was substituted, the milk became alkaline, and did not spontaneously coagulate.

"Dr Cullen says, 'I allege it to be a matter of experience, that supposing the quantity of liquid to be the same, nurses living entirely, or for the greater part upon vegetable aliment, afford a greater quantity of milk, and of a more proper quality, than nurses living upon much animal food. This I venture to assert from the observations of fifty years.'

"The influence which many medicines, taken by the mother, have over the sucking infant, is a circumstance known to every nurse, though Cullen denies it. We can modify the colour of the milk by mixing saffron or madder with the food; the odour may be affected by various cruciferae and alliaceous plants; the taste may be altered by the use of bitters, as wormwood; and lastly, the medicinal effect may be also influenced. Children may be salivated by sucking nurses under the influence of mercury, or purged by the exhibition of drastics, or narcotised by the administration of opiates to the nurse. These facts are so familiar to every one, that further evidence of them is scarcely requisite. It is curious, however, that Simon failed to recognise in the milk various salts, which were taken by the mouth, and were found in abundance in the urine. Mental emotions also affect the quality of the milk. I have frequently seen the bowels of the child disordered in consequence of some sudden emotion on the part of the mother. It is also not improbable that diseased conditions of the parent may render the milk unhealthy. Labillardiére states that the milk of a cow, affected with a kind of tuberculous phthisis (prommétièrè), contained seven times more phosphate of lime than usual. Dupuy also speaks of the large quantity of calcareous matter in the milk of cows, in whose lungs abundant deposits of the same substance were found. Other morbid changes in the milk have been observed by Donné, Robiquet, and Lassaigne. The facts now mentioned are of the greatest moment, not only in reference to the frequency of disease in cows, and, therefore, to the possible morbid character of their milk, but they are of considerable importance in reference to the milk of the human subject. I think, with this statement before us, it is highly improper to allow a female, with any trace or suspicion of tuberculous disease, to suckle. Not that a few grains, more or less, of phosphate of lime in the milk can probably do any injury to the child; but the fact once established, that the milk may be thus altered by disease, leads to the suspicion that some other substances not yet recognised by their physical or chemical characters, may be in the milk of diseased nurses, and which may have an injurious influence on the child; and the suspicion does not confine itself to those affected with tuberculous diseases; other hereditary or constitutional affections may also be attended with altered conditions of the milk. This suspicion is strengthened by the common observation, that the milk of nurses will not equally suit different children. A child quite healthy and
in good condition will sometimes, without any evident disease, fall off and get into what is commonly called a bad condition, apparently from a change of the nurse. I am aware that we cannot always refer this to any positively hurtful matter in the milk. The quantity of nutritive matter in the same quantity of milk of two nurses, may be very different; according to Payen, milk with too much nutritive matter in it may disagree with the child. Another point worthy of attention is the quantity of milk yielded in a given time. Payen says it varies in different women as much as from one to ten and a half in the same time.” Vol. i. pp. 57-59.

With this extract we take our leave of Dr Pereira, congratulating him on the well-merited success which, notwithstanding some imperfections, attended the publication of his first edition; and recommending all who wish for full instruction in Materia Medica, to purchase and peruse these volumes.

Of the second work on our list,—Dr Christison’s Dispensatory,—we have already, from a rapid inspection, expressed our opinion, that it is “the most accurate, the best arranged, and cheapest work of the kind” with which we are acquainted, and a more attentive perusal has confirmed our opinion. We expected an excellent work, when we knew that Dr Christison had a Dispensatory in the press; but on perusal of it, we have been enabled entirely to discard our anticipations, and to derive our opinions of its value solely from experience of its excellence.

We beg those who are in doubt as to ‘which is the best book to get on materia medica,’ to bear in mind, that Dr Christison’s work is not a system of materia medica, but a Dispensatory, i.e. as the title-page bears, a Commentary on the Pharmacopoeias of Great Britain. It contains a history, only of those articles which are recognised by the London, Edinburgh, and Dublin Colleges, and whoever wishes for information of a more extended kind must look for it elsewhere. Being, however, the production of an author who combines the qualifications of an expert pharmacologist and chemist, with those of an accomplished physician, it contains what is amply sufficient for the instruction of students, and for the guidance of most practitioners. We confidently recommend it as a most eligible investment, for the moderate sum of eighteen shillings.

The characteristic features of this volume are, brevity without any unnecessary or inconvenient curtailment, conciseness without obscurity, and, above all, most admirable arrangement. The inconveniences attending the order followed by the late learned and estimable Dr Duncan, in his well-known Dispensatory, have been entirely got rid of by the lucidus ordo of Dr Christison. We have no need here of searching for carbonate of potash as an article of commerce in one part, and then turning over two or three hundred pages to find the methods of purifying and administering it in another. The whole that is to be said about
any one substance is to be found collected together, and, what is particularly useful to practical men, the officinal preparations from the different pharmacopoeias are placed in order at the head of each separate article. By this excellent arrangement we have at once an easy reference to the whole commercial, pharmaceutical, and therapeutical history of every medicinal agent recognised in Britain. Dr Christison has wisely omitted that part of Dr Duncan's and other Dispensatories, entitled, Elements of Pharmacy, from a wholesome conviction, that a "treatise of the kind, in order to be useful, must be far more comprehensive in its details than has been felt by prior authors to be compatible with the limits of a Dispensatory for the ready reference of practitioners and druggists;" and he has substituted for it, in the form of an introduction, "only a few commentaries on the general heads under which the preparations of the materia medica have been arranged by the three Colleges of the British empire, in their respective pharmacopoeias." This, as well as some other parts of the volume, is illustrated by a few well-selected and well-executed wood-cuts.

Dr Christison's method of treating his subject is the following. The officinal designation and definition of the substance are first given; then the tests for its purity from the Edinburgh and London pharmacopoeias; next the various officinal preparations, with the processes at full length; a copious list of synonyms, in different languages, and, in the case of plants, references to figures of the species. The special details of each substance are arranged under the following heads:—1st, A brief historical notice of its introduction into medical practice; 2d, Its natural and chemical history,—these being incorporated in the case of minerals, but treated separately in the instance of vegetable remedies; 3d, Its physiological actions and therapeutical uses; and lastly, The doses of the substance, and its preparations.

Dr Christison has, to our mind, evinced much sound judgment in the selection of those points of natural or chemical history which he has introduced into his work. In the majority of instances, he does not aspire to that minuteness of detail which is to be found in systematic treatises on Materia Medica, as for example, in Dr Pereira's excellent volumes, but where he judges the natural history to bear an important relation to the medicinal value, he occasionally enlarges a little, and furnishes us with some important and interesting details. We quote, as illustration, the following account of the growth of the colchicum bulb, which is better given here than in any English work with which we are acquainted.

"Let the bulb be supposed to be in a state of full perfection, which will presently be seen to occur in the course of June or early in July. Soon afterwards, sometimes even in the end of June, a new bulb, about the size..."
of a grain of wheat, will be found at the lower end of the old one, close to its junction with the radicals or root proper. This little bulb increases rapidly, and at the same time begins to send up a flowering stem without leaves. At length, towards the close of autumn, a long, naked, lilac or purplish, crocus-like flower springs from the ground, still without any leaves. The germen at this time remains at the bottom of the long tube of the corolla, under ground; and it continues there till the month of January or February, when at length the leaves for the first time show themselves above ground, and rising, like a bunch of tulip leaves, elevate along with them the germen, consisting of three many-seeded capsules, which ripen their seed about midsummer. After this the herb speedily dies and withers. While the flower is rising in the autumn, the bulb forming its lower end is little larger than the diameter of the flower-stalk, of which it appears a mere dilatation; but it grows rapidly during the winter. In April it is as big as a chestnut, and in July it attains its greatest magnitude, being about the size of a small apricot. At this period in its growth, when it is a twelve-month old, and the herb proceeding from it has ripened its seed and is withering, a new bulb begins to appear from its lower end, close to the root proper; and this produces in the autumn a flower, and in spring a bunch of leaves, like its parent bulb before it. The parent bulb, meanwhile, as the new flower rises, gradually becomes more spongy and watery, yet retains its size and form till next April, the second spring of its own existence. But after this it quickly decays; so that by the end of May it consists of a shrivelled leathery substance, attached by a broad thin membranous band to the lower part of its progeny, now developed into a perfect bulb about the size of a chestnut. The bulb, whose progress has thus been traced, is therefore biennial, or, according to the views of some, triennial; it sees a part of three successive years, but outlives only two revolutions of each season. The plant also propagates itself by the seeds, which ripen in the south of England. I am unacquainted with the progress observed by seedling plants. In this part of the country, where the seed seldom comes to maturity, propagation takes place very differently, namely, by immature or infant bulbs being thrown off from the large bulb during the second or last spring of its existence. In January or February subsequent to the summer in which the plant ripens, or ought to ripen, its seed, and when the herb has for some months died off entirely, a little depression forms on the side of the bulb near the decayed remains of the leaves. Gradually a little oval corpuscle forms on this depression, while at the same time a little tongue-shaped membrane rises vertically behind it like an open lid. The corpuscle soon shoots out radicles at the lower end, and long slender leaves at the upper extremity, which appear above ground in March or April; a small conical bulb is also formed where the radicals and leaves meet, but at the side of the junction, and about the size of a lemon-seed: and soon afterwards this immature bulb, with its plant, detaches itself from the parent, and may be found entangled among its radicals. Several such bulbs seem to be formed from one parent, and two may be occasionally seen at one time adhering to it, and in different stages of their progress. The production of these young plants is the last act in the functions of the parent bulb, which immediately afterwards becomes a dead shrivelled membrane. I have sometimes seen little plants beginning to form in this way so early as September. Their progress after separation is unknown, but probably several years elapse before they are far enough advanced to push out flowers.” Pp. 351, 352.

In his therapeutical part, Dr Christison has sought rather to give an abstract of the most important uses of each substance, as corroborated by his own study and experience, than a history of the numerous applications of drugs which different writers
have signalized. To collect these is an endless, and by no means a profitable task; and we may take this opportunity of remarking, that Dr Pereira's desire to let nothing escape him, has occasionally led him into this error, which Dr Christison has happily avoided. We cannot deny that in several instances our own experience has not brought us to the certain conclusions to which Dr Christison has attained; but we nevertheless consider the therapeutical portion of the work as highly valuable. The article *colchicum* lies open before us, and we select the following passage as being worthy of perusal.

"Colchicum cannot be safely used as a sedative in inflammatory diseases, or a specific in gout, without due caution, and a thorough acquaintance with its properties. For on the one hand, it appears seldom to act therapeutically before producing a slight degree of that physiological action—indicated by diarrhoea, colic pains, and frontal headache—which in a higher degree constitutes it a poison; and on the other hand, this drug, owing either to individual differences in constitutional susceptibility, or to irregularities in the strength of its preparations, appears singularly variable in energy, so that what occasions no effect at all upon one individual, excites alarming symptoms in another. The only allowable mode of administering it, therefore, is to begin with small doses, and to repeat them with a frequency proportional to the urgency of the case, gradually increasing the dose till the disease begins to yield, or till colic and diarrhoea make their appearance. As soon as the bowels are affected, the action of the remedy must be diligently watched, and the doses at first suspended or diminished. By attending to these rules I have never had occasion to observe any unpleasant effects from the use of colchicum, or any symptoms which a dose of opium did not readily subdue. There are some, it may be observed, who doubt that the development of the physiological action of this remedy, is in any circumstance necessary for its therapeutic action. It would be incorrect to hold the opposite doctrine to its full extent—that its therapeutic depends on its physiological action. But I am strongly inclined to believe that its good effects are not manifested until the constitution is so charged with it, that its physiological action straightway begins to show itself. For I have never seen a case of rheumatism essentially benefited, till the patient began to suffer from colic and diarrhea on the one hand, or from frontal headache and giddiness on the other. The ill success which some practitioners have encountered in using colchicum, may have arisen from inattention to this circumstance. On account of the tendency of the remedy to debilitate the stomach, it is advantageously combined with aromatics, such as cinnamon-water, and with a little muriate of morphia." P. 355.

The third work in our list is Dr Bellingham's *Elements of Materia Medica and Pharmacy*, edited by Dr Arthur Mitchell. We were at first a little puzzled to make out why Dr Bellingham, who, so far as we know, is alive and well, should have got another person to edit his book; but the mystery was solved by the first sentence of the preface.

"The editor of these *Elements of Materia Medica and Pharmacy*, (having been engaged for many years in teaching the different branches of medicine) has frequently experienced the want of a work upon these subjects, which he could safely recommend to the student. This deficiency the editor has endeavoured to supply, having been familiar for several years with the ar-
angement followed by Dr Bellingham in his lectures upon the materia medica, and with the manner in which the several subjects were treated, the former being superior to any classification with which he is acquainted, and the latter presenting some novelty, and appearing to possess some superiority over those generally adopted."

From this we are led to suspect, that Dr Mitchell is one of those useful individuals who "prepare gentlemen for passing the Hall and College," and whose functions are molendinaria; and that this book is intended to aid students in preparing themselves for the fiery ordeal through which they must pass, to obtain the "summos medicinae honores," or the license to practice "ubique gentium." If we have rightly divined its object, we can recommend the work as containing many things which a student must know in order to pass his examinations. He will learn in it how to prepare oxygen, nitrogen, and hydrogen, the atomic weights, specific gravities, and general chemical and physical qualities of each; and all this, it is well known, must be "got up for the College." But we are at a loss to know how these details come to form part of Elements of Materia Medica and Pharmacy; and we own that if we were re-preparing for our examination, we should feel more disposed to collect our information by reading the corresponding portions of Turner's, Graham's, or Kane's chemistry.

As to the arrangement of Dr Bellingham's lectures, of which Dr Mitchell is so much enamoured, and the method of treating the subject, we see the novelty in many places, but have failed, notwithstanding a hearty endeavour, to discover the superiority. We do not see, for example, why in this, the first part of the work, such an arrangement should be followed, as should bring out a description of the chemical properties of the metals and their oxides, which is thus separated longo intercallo from the pharmaceutical and therapeutical history of the same, and from the account of their other compounds of analogous composition, such as the iodides and chlorides. Nor do we recognise the precise superiority of the chapter which terminates at page 73, with a description of protoxide of silver, preceding that which commences with an announcement of the fact that metals, by combining with oxygen, form oxides, acids, or alkalies. Seeing that a considerable number of metallic oxides have been already described, we think it would have been better, if such very elementary chemical propositions were to enter at all into a work on materia medica and pharmacy, that they had been stated first, and thus the tender mind of a student would have been delicately prepared for receiving with more profit, a detailed account of the individual oxides or alkalies so formed. In fact, the first six chapters of this work are mere gleanings from the standard elementary works on chemistry.
with more of "novelty" than "superiority,") and with which every student who follows a good "arrangement" in his studies should be familiar, before he begins to apply himself to materia medica and pharmacy.

At chapter vii., however, the book begins to improve, because it there assumes more of the form of a work on the subject which its title-page announces; and we may safely say that a student of materia medica will derive considerable profit from perusing this and the succeeding four chapters. The subjects which they embrace are:—the general nature of pharmaceutical operations; pharmaceutical preparations; the modus operandi of medicines; circumstances which modify the general action of medicines; modes of administration and combination of medicines. These are really useful chapters, containing in a short space, little, it is true, that is new or original, if we except one or two hints on pharmaceutical operations which are given by Dr Mitchel, but much which every student ought to know, and which would form a valuable introduction to the study of individual substances. We wish that these chapters had stood alone, unencumbered by the mass of superfluities through which we have to struggle, in order to get at them. They would have formed a very useful little treatise for students. At chapter xii., however, the materia and pharmacy are again lost sight of, and the grinding stone reappears. The classification of the articles of the medica opens up the subject of natural history, and we at once find ourselves in the midst of an account of the various divisions and subdivisions of the animal and vegetable kingdoms. This we find is given as an introduction to the individual substances, which are afterwards to be described according to a therapeutic classification. We shall be glad to find, when part ii. is published, that Dr Bellingham's love for a therapeutical arrangement does not lead to a considerable amount of repetition which might have been avoided by following a natural history order. In the mean time we must say, that it is tiresome to find in a treatise on materia medica, nearly sixty pages occupied chiefly with characters of the natural orders, which our readers will learn much better from Lindley's Introduction. It is quite true that this botanical part of the work may save some students who want time or inclination, from studying botany in a more legitimate and systematic manner. It is not objectionable as an introduction to a therapeutical arrangement of individual substances; but then it ought, as in Dr Pereira's work, to have come in a smaller type, and should never have formed so large a part of the text of an elementary work on materia medica and pharmacy.

Our objections to the work now under consideration, apply more to the manner than the matter. In the latter respect, indeed, with
perhaps one or two trifling exceptions, it is correct and trustworthy. It contains much valuable information, undoubtedly, but certainly not of a kind appropriate to a work on materia medica. We urge this point more particularly, because it has been the subject of an attack directed against its details, written obviously by one who has prostituted the right of free and anonymous criticism, to the unworthy purpose of gratifying personal spleen and malice. It is but fair to add, that the respected editors of our Irish contemporary in which this article appeared, have expressed their regret at its admission into their pages; and that Dr Mitchell has, in the same Journal, successfully rebutted nearly the whole of the accusations of error imputed to him.