terrible truths, and act as wisdom, justice, and humanity dictate. Finally, when these palpable evils shall have been abated, and patients learn to seek the aid of enlightened physicians during a curable stage of disease, the proportion of recoveries will be largely augmented, and phthisis will no longer be regarded as the opprobrium of our profession." (p. 549.)

In parting from our author, though we cannot enter into all his hopeful views of the cure of phthisis, yet we can most willingly express the satisfaction we have had in the study of his work: our analysis of it, imperfect as it is, would not otherwise have been so lengthened. No subject in medical science has been more productive of monographs of high ability than this disease—of monographs which have become classical. We have some confidence that this work will rank amongst them. For acuteness of observation, for sober discrimination and sound judgment, and fair criticism of the writings of others, and especially of contemporaries, and for the wide knowledge which it displays of the literature of his subject, we know few books superior to it. We bestow our praise the more readily, our author being an American; yet though an American of Anglo-Saxon race, as his name implies, and one who we trust will, with all his right-minded countrymen, still cherish a love of the stock from which he has sprung, abhorrent of the vulgar clamour sadly now prevailing against England, as if the American States, whether united or separated, Federal or Confederate, had not with our country a common interest, apart from the community of blood, that of language, of literature, and of laws.

REVIEW III.

On some of the more Important Diseases of the Army; with Contributions to Pathology. By JOHN DAVY, M.D., F.R.S. Lond. and Edinb., and Inspector-General of Army Hospitals.—London, 1862. pp. 438.

Two classes of men, if not absolutely opposed to each other, at least strongly discriminated in their mental characteristics, stand prominently out in the cultivation of medical science; the one eager, ingenious, and speculative—the other cautious, sober, and scrupulous. In some few the qualities that form these descriptions of intellect are found in abounding measure and in rare and happy combination; but in most men, even of superior endowments, one class of mental qualifications predominates over the other. We could not do without either of them: one class is needed to urge on our progress, the other to assure us of its soundness; and if we follow the former in their speculations with most interest, we certainly rest in the views of the latter with the feeling of greatest security. It is to the latter class of intellect that we would be disposed to refer the author of the valuable work of which we propose at present to offer some account.

Nothing can exceed the scrupulous exactness of Dr. Davy's statement of matters of fact, while his freedom from anything approaching

to dogmatism or undue zeal for a preconceived opinion, and the cautious modesty with which his deductions are offered, are equally remarkable and praiseworthy. We are constrained, however, to mention, that suggestions for the improvement of strictly medical practice, and even the remarks on general hygiene, are much less full and explicit than we should have liked to receive from one whose high standing, long experience, and previous contributions to science would have led us to expect. The resolute determination of the author, moreover, to limit himself to his own personal experience has prevented him from entering fully into some subjects which we should have been happy had he discussed at more length.

Dr. Davy has lived and served during the times when heroic practice was the order of the day. Are we altogether wrong in imagining that the erroneousness of some of the views on which that practice was founded, the extravagant length to which it was carried, and the indiscriminateness of its application, have produced a painful reaction in his mind, and led him to adopt somewhat desponding views as to the future progress of his art? If it be so, we can, to a certain extent, sympathize with him; but the feeling may go too far, and is, we believe, essentially unfounded: it is a feeling depressing in the highest degree to a good man, or to an earnest votary of his profession; while to an indolent or unconscientious practitioner it is productive of consequences still more injurious, leading him to indifference regarding the remedial measures he ought to pursue, seeing that, do what he may, things will take their own course, either to recovery or death, influenced little or not at all by any procedure he may adopt. Now, without going very deeply into the controversy, keenly agitated lately and even yet by no means composed, regarding the merits or demerits of the depleting practice which held sway during the earlier part of Dr. Davy's professional life, we think he might, even in his own statistics, have found proof that it was not so radically and universally injurious as its opponents now allege, and as he himself, judging from the tenour of some of his remarks, is inclined to believe.

His statistics of pneumonia (if we read them aright) give an average mortality in round numbers of about 1 in 23. This result compares by no means unfavourably with the results obtained in more modern times from the expectant practice, as fully carried out by Dietl and in the homœopathic hospitals, where we have no reason for doubting that the general hygienic regulation of the patients is minutely and skilfully attended to. Now we are perfectly aware of the fallacies that may arise from such comparisons as this: we have no wish to strain our facts or our reasoning, but if the mortality of the military and of the *expectant* hospitals be equal, and in fact the balance is in favour of the former, it is proved demonstratively that the military practice was not lethal, indeed, not in any degree injurious. And we certainly are entitled to regard it as improbable that remedies so violent and disturbing to the processes of nature as were ordinarily employed at that time should have failed to produce very mischievous consequences indeed, had there not been something in the character of the morbid

process going on *then* which we never or very rarely see now. Nor does a supposition of this kind involve the apparent contradiction, or at least very serious difficulty, that Dr. Davy seeks to deduce from it. He says—"The average of life *now* is admitted to be greater than in preceding ages; how remarkable this would be were it associated with a diminished *vis vitæ*." The maintenance of the opinion we have stated above does not necessitate any such contradictory assumption; all that is required is to believe that the morbid influences to which mankind are now exposed (of whose nature Dr. Davy most strongly affirms our perfect ignorance, whilst of their existence and potency as manifested in their effects no doubt can be entertained) produce a pathological condition different from what they did in former times, and of a more asthenic character. And when we consider the stress that our older writers lay on what they call the epidemic constitution of the atmosphere, the accounts they give of what they describe as typhoid pneumonias, and the constant and anxious reference of all—Sydenham especially—to the importance of determining the varying character of the same disease from year to year, or from one series of years to another, we shall see that this view is no afterthought devised to escape from a present difficulty, but simply the application of an old opinion held by the best and soundest observers in our profession, and supported by the strongest analogy. It must not be supposed from these remarks that we seek to apologize for the unjustifiable and injurious extent to which depletion was carried during the period we refer to; we do not seek to deny or extenuate the mischief resulting from it, nor have we any doubt that the prevalence of erroneous or defective or premature medical theories have had a share in causing the application of this practice to cases for which it was unsuited, and in maintaining it after it should have been abandoned; but when Dr. Davy intimates his opinion that this is the sole account of the altered practice of the present day, we cannot help thinking that he has fallen into an error, and this error has given a tone of despondency to his remarks on the treatment of disease which we are sorry to meet with.

There can be no doubt that very exaggerated views at one time prevailed of the power of mere medication. There can be as little doubt that these views rested upon a pathology unsound and erroneous, inasmuch as it took no account of the restorative powers of nature; but juster views now prevail, and are held not only by a few enlightened men, but by the mass of the medical profession; and considering the tendency of the human mind to pass from one extreme to its opposite, it is only what we might reasonably expect, that opinions of a nature greatly too depreciatory of the usefulness of medical practice should be expressed sometimes by the more thoughtful section of the non-professional public, as well as by a host of frivolous and scoffing pamphleteers.

To proceed with our notice of Dr. Davy's work. After an introductory chapter containing remarks on the average weight of different organs, their colour, consistence, and some points not decisively ascertained, such as the temperature of the body after death, the condition

of the blood after death, &c., which, from Dr. Davy's exactness and caution, we strongly recommend to the study of all engaged in pathological researches, he proceeds to the consideration of fevers, intermittent, remittent, common continued, and yellow. Typhus he excludes, as being a disease of climates colder than those in which his professional life has been spent. All these forms of fever Dr. Davy is disposed to regard rather as varieties graduating into one another, and that often by degrees not very definitely marked, than as distinct species. So far as our present knowledge extends, we are inclined to agree with Dr. Davy, but with him we would hesitate before committing ourselves to an absolute opinion, for however painful to the mind a state of doubt may be, it is safer and more philosophical to admit the uncertainty of opinions rather than prematurely to regard them as established. The affinities and convertibility of febrile diseases is a most interesting subject, and one that perhaps has not been sufficiently studied. We ourselves have, among others, notes of a case of clearly-marked influenza, in which, during the convalescence of the patient, first, two of her relations, and then several members of a neighbouring family (the only other in the hamlet), became successively affected with ordinary continued fever. A female attendant, who had come from some distance, sickened, and was sent home, where she died with the usual symptoms of malignant typhus. Several members of her household had the disease after her death, one of them recovering with great difficulty. Dr. Davy's observations on the etiology, pathology, and treatment of fever lead to conclusions almost entirely negative; he regards it as impossible to connect, as cause and effect, the lesions discovered after death with the symptoms exhibited during life, and while evidently leaning to the view we mentioned above, he very candidly admits that "there are not wanting arguments in favour of a certain distinctness of species;" which arguments he finds especially in the habitats of different fevers, and the distinctions observed in their sequelæ. One important remark coming from so careful and experienced an observer (though still of a negative character) is, that there are on record no observations which warrant the opinion that the fluids are primarily concerned, and that his observations on the blood-corpuscles in yellow fever failed to discover any deviation from their normal appearance at whatever stage of the disease they were examined.

On the important and mysterious subject of malaria, Dr. Davy's conclusions are still almost entirely negative. He considers an elevated temperature as the only condition that can be justly regarded as uniform, or standing in the relation of cause and effect; a low temperature favouring the production of typhus, a higher the appearance of intermittents, and a higher still, continued, remittent, and yellow fever. But even this relation, he says, is only general, not precise or regular. From a table of fever cases in the Ionian Islands classed per mensem, it appears that whilst the total number was greatest in the hottest month (July), intermittents were most numerous in April, continued fevers in July, and remittents in August. Hence, something else besides

a high temperature is required for the production, especially of fevers of a remittent type, this something, cognizable only by its effects, has been called in modern times malaria. Of this mysterious agent, whose presence and efficiency we are compelled to assume, we know absolutely nothing, and there are difficulties and anomalies apparently insoluble in all that relates to its production. Among these are the extreme irregularity and capriciousness of its appearance, or at least of the diseases ascribed to its operation; whole districts in the West Indies, in Ceylon, and in the Ionian Islands being sometimes decimated by remittent fever for months, and then its ravages ceasing without any appreciable climatic or other external conditions having preceded or accompanied its origin and abatement. The prevalence of agues and remittents in the Pontine Marshes is notorious. In the south-west coast of Ceylon, where the ground is similar and climatic conditions favourable to the production of malaria, its effects are scarcely felt. Certain districts where vegetable exuviae are rapidly and abundantly undergoing decomposition are free from malaria fever, while it prevails in the hill districts of Zante, in the little island of Meganisi, and in the still smaller one of Vido, where there is little moisture, the soil is extremely dry, and vegetation very scanty, the two Ionian Islands referred to being little else than rocks. The origin, too, of malarious fevers limited to circumscribed spots, with the exemption of others in all respects similarly circumstanced, as in one of the rooms of the barracks in Vido, where a large proportion of the soldiers were attacked, whilst the occupants of another room, separated from the former only by a narrow passage, remained free from disease, increases our difficulty in arriving at positive conclusions on the subject of malaria.*

From this statement of facts, Dr. Davy deduces the following conclusions—viz., that we are entirely ignorant of the nature of malaria; that the causes are independent of luxuriant vegetation, or of the decomposition of vegetable matter; that they cannot be referred to the action of the solar rays on moisture, superficial or underground, and that they are independent of the intermixture of fresh and salt water, or the alternate inundation and exposure of muddy surfaces. Our investigations respecting malaria must begin with an admission of entire ignorance. That it is a substance *sui generis* Dr. Davy seems to have no doubt; it may possess properties peculiar to itself, and to discover these, new instruments and methods of research may be required. Could processes analogous to those by which iodine and bromine were discovered in the ocean be brought as easily to bear on the mass of aerial fluid that surrounds us, new substances might possibly be discovered in it, for doubtless it contains in amount, however minute, a portion of everything volatile. And the matter of blight wafted by the winds, the spray of the sea, carried inland for miles, and showers of dust falling over a considerable extent of surface, give credibility to the view that solid bodies exist in it in a state of ex-

* We should have been glad to know in this last case the condition of the room as to crowding, or the possible evolution of human emanations.

tremely minute subdivision. One conjecture Dr. Davy throws out after the remarks we have thus endeavoured to condense, that there are various species of malaria, a notion, he says, countenanced by the analogies of nature and the character of epidemic diseases, resulting probably from atmospheric influences. While thus strongly affirming our utter ignorance of the malarious poison, Dr. Davy insists on the lessons taught by a dear-bought experience as to the best means of escaping its effects. These may be summarized under the heads of exposure, diet, and clothing. It seems to admit of no doubt that the noxious influence is by far most potent when the sun is below the horizon. On this head Dr. Davy's facts are clear and unequivocal, and in unison with all we know on the subject; hence the great importance of never sleeping in the open air, and of not imposing upon troops nocturnal duty except when it is rendered unavoidable by an imperious military necessity. Hence, also, the importance of so constructing the sleeping apartments of soldiers that they shall not be under the temptation to escape from an over-crowded offensive room, by exposing themselves to the even more pestilential influence of the night air, and that probably while bedewed with perspiration. On the subject of clothing Dr. Davy is, we think, not very clear, mixing up the effect of night exposure with defective clothing, and the influence of malaria with the effect of atmospheric variations. He seems to approve of flannel, or of coarse soft cotton, as underclothing. He advocates a generous diet, expressing his belief that the mischiefs of intemperance have been somewhat exaggerated, at least so far as malarious diseases are concerned, stating the apparent paradox that many of the soundest constitutions are most liable to malarious influences, and accounting for this by the somewhat extraordinary assumption that organic disease acts as a preventive against it.

In the choice of sites for public buildings, barracks, &c., Dr. Davy holds that the only safe guide is experience of their salubrity from the healthiness of the neighbouring inhabitants. When this cannot be ascertained, we must be guided by the probable salubrity of the spot selected—a point concerning which, considering the inherent difficulties of the subject, it would be somewhat difficult to come to a conclusion. We have epitomized this part of Dr. Davy's book because he is, we think, the latest writer on the subject, and has gone into it more at length than perhaps any other, and because it is interesting in itself, most important to the military establishments of the country, and closely related to the sanitary movements and speculations now so much agitated.

In perusing this book, it is impossible to avoid being struck by the numerous hints dropped of the extreme injudiciousness of many prevalent arrangements respecting the soldier's health, and the apparent want of power on the part of the medical officers to correct or improve these. His occupations when off duty, his lodging, his food, his clothing, indeed, all the details of military life, seem to be devised and carried out with little or no regard to their effect upon health, sometimes without consultation with any medical

authority, sometimes in direct contravention of medical opinion. Abundant proof, indeed, of this is afforded not only by our author, but by every other writer on military medicine. We rejoice to admit the very great improvement that has taken place in many respects since the dear-bought experience of the Crimean war, the "hideous and horrible" exposures of which thoroughly aroused public attention to the subject.* But all such efforts as were made at that time are apt to be somewhat spasmodic in character, and followed by a period of inertia and languor; we would therefore consider it a matter of great importance that the subject of military hygiene should be kept steadily before the eye of the educated public. Without insinuating any special blame, we know how strong the tendency is in all departmental action to degenerate into a matter of routine, and to lag behind the requirements of the time. We would therefore earnestly wish that all qualified like Dr. Davy to speak on such subjects should make their observations known and felt so that public opinion may bear intelligently and effectually on those in high places. One fact clearly brought out by Dr. Davy is equally apparent in the writings of Sir John Pringle—this is the comparatively small proportion of officers who are either attacked by fever or die of the disease in relation to an equal number of private soldiers; nearly three times as many out of equal numbers of the two classes die among the latter. This difference is due, undoubtedly, to the smaller exposure, better diet, clothing, and lodging of the officers; and while it may to a certain extent be unavoidable, it is surely possible, we would think, that it should be somewhat diminished.

The doubt which even yet hangs over many points connected with the origin and causation of malarious diseases ought, we think, to suggest caution in their reasoning to some of our zealous sanitary reformers. The importance of sanitary inquiries, and the benefits to be derived from them, cannot well be exaggerated, but we think there is occasionally a haste to arrive at conclusions which may lead to partial failure, and this again to discouragement. The whole of medical history presents a contrast to that of the purely physical sciences in the slowness of its progress and the uncertainty of its conclusions; this arises from the want of uniformity in the sequence of phenomena in medicine when compared with the invariable relations discovered in these sciences—the first step, even the observation of matters of fact—is beset with great difficulties in medicine. Facts may be recorded partially or defectively, or with a multitude of casual adjuncts that obscure their meaning and distract attention. So observed, their arrangement or classification becomes either of no use or of extreme difficulty, and the discovery of their true relations, especially the relation of uniform antecedence and sequence, almost impossible. Even

* While we give full credit to the late lamented Lord Herbert for his efforts to promote the well-being of our soldiers, it is right that the public should be reminded that he was preceded in the same course by the present Earl Grey (at that time Lord Howick) when in the War Office—a man whose rare ability, indefatigable industry, and unspotted integrity have scarcely yet attained that place for him in the estimation of his countrymen to which he is justly entitled.

when some progress is made in this respect, our application of the knowledge we have acquired may be rendered fallacious by the intervention of a new series of unknown causes. But while bearing this in mind, it is not the less our duty as reasoners and inquirers to act on such presumptions as are within our reach; and surely, after all the admissions demanded of us by Dr. Davy, our ignorance is not so absolute but that we may act with some degree of assurance. Though we believe it is scarcely possible respecting any given spot in tropical countries to say, *à priori*, that it will not be subject to malarious influences, there are certain features in a locality, and these having reference chiefly to moisture and vegetable exuviae, which enable us to conjecture with more or less probability that it will be the seat of fever. Moreover, some of our author's statements are, we venture to think, scarcely so full and precise as to warrant determinate conclusions. We would inquire what is the character of the whole surface of these islands described as "barren rocks," where malarious fever shows itself. And further ask, if in those exceptional districts where malaria might be supposed to exist, yet does not evince itself, there may not be some unknown cause at work, the laws of whose operation prevent or modify the noxious agency?

We have dwelt so long on our author's first section, that we must pass very rapidly over the remaining portion of the volume. The chapter on Dysentery, Acute and Chronic, which follows that on Fever, is one of the most definite in the book; Dr. Davy's views, as to the causes and treatment of the disease, being given more unhesitatingly than usual. In addition to a high temperature, he refers it to indigestible and innutritious food, especially the immoderate use of salt provisions, and to the drinking of impure water. The lesions Dr. Davy discovers in his autopsies are well described, the primary ones being the ordinarily recognised results of inflammation and ulceration of the large intestines. Among the complications we were struck by the very small number connected with the liver. In 15 cases of acute dysentery, only one case of hepatic abscess occurred; in 19 cases of chronic dysentery, only 5, a result which, we think, justifies the disapproval expressed by Dr. Davy of a mercurial treatment in this disease, both in the acute and chronic form, especially the latter, in which it seems often to have been carried to a most injurious extent. Calomel in moderate (not heroic) doses, ipecacuanha, and, above all, opium, are the remedies on which Dr. Davy depends; expressing also an approval of occasional leeching, but, unless in very exceptional cases, condemning general bloodletting. On comparing Dr. Davy's views with those of our old authority, Sir John Pringle, we cannot fail to be struck by their almost perfect similarity. We have only to imagine the causes operating in a higher state of activity, and Sir John's account of the disease and its post-mortem appearances, as witnessed by him in the Low Countries, might apply perfectly to tropical dysentery, while as to prevention and treatment the ancient and modern authorities are nearly one. Sir John lays more stress on alternations of temperature, from the men lying on the cold, damp ground after toilsome marching under a hot sun, and strongly affirms

the contagious nature of the disease, which Dr. Davy is more than half inclined to deny. The similarity of pathological and practical views between Dr. Davy and Sir John Pringle, instead of being discreditable to medicine as implying a stationary character, affords a gratifying proof of the stability of medical conclusions when the observations on which they rest are on subjects fairly within reach, and have been carefully made under circumstances sufficiently varied to admit of the elimination of error. Both authorities dwell on the vast importance of hygienic precautions, and on the great difference between the frequency and mortality of the disease among officers and men. And here we may be allowed, in justice to our profession, to point out, that the various military reforms for which recent administrations have obtained so much and such well-deserved credit, are little more than the carrying out of suggestions, and listening to representations that have been urged by the highest medical authorities in the army for the last century. These improvements, it may be said, are, after all, only the dictates of common sense; be it so; then, in this most useful and important commodity, the doctors have been in advance of all our higher officials, and common sense, be it remembered, does not mean that sense is common to all or most men, but it means sound judgment and just reasoning applied to common things.

We must now draw our remarks on this interesting volume to a close. On several of the chapters, comprising cholera morbus, hepatitis, consumption, and other thoracic maladies connected with it, we do not intend to enter. They are all characterized by the author's exemplary fidelity and diligence; but the examinations we have found it impossible to condense, or to arrange so as to deduce from them any general principles, which, indeed, Dr. Davy himself does not attempt. We may note, however, that the chapter on phthisis concludes with some very strong remarks, especially from a writer so guarded as Dr. Davy, on the utter disregard shown to the soldier's sanitary condition.

But there is one chapter on the coagulation of blood in the vessels during life, to which, however shortly, we wish to point attention, as specially interesting from its relation to tubercles on the one hand, and embolism on the other. Of this phenomenon Dr. Davy has observed forty-three examples, and records twenty-three. In all his cases the patients laboured under disease of an asthenic type, and were of a cachectic habit. The coagulum appears to lose its colouring matter first; the remaining fibrinous clot, while firm externally, exhibiting, like tubercle, a central puriform softening. The blood, when mixed with hydrate of lime or potassa, yielding stronger traces of ammonia than usual, and when agitated with air disengaging gas, not absorbing it, both circumstances indicating, in Dr. Davy's opinion, a morbid state of that fluid. The relation of the formation of coagula to cases of sudden death, to the progress of tubercle, to the production of unhealthy suppuration round the anus, and even to otherwise inexplicable internal hæmorrhage, Dr. Davy indicates as interesting and important subjects for future inquiry.

We have now exhausted the space we can afford to give to this volume. The pathological facts, detailed with great care and accuracy, we can only recommend to attentive study and consideration; and we conclude by expressing our gratitude to Dr. Davy for the laborious and faithful account he has here presented us of his long and ample experience.

REVIEW IV.

Notice Historique sur l'Établissement de Pisciculture de Huningue (Département du Haut-Rhin), appartenant au Gouvernement Français et placé dans les attributions de l'Administration des Ponts et Chaussées.—Strasbourg, 1862. pp. 143.

Historical Notice on the Establishment for Pisciculture at Huningue, belonging to the French Government, &c.

This is a very valuable document, and highly creditable to the Imperial Government; one merit of which, at least, is that, however much it curtails the liberty of the citizen, it spares no pains or cost to promote his material prosperity. Considering the importance which, in a sanatory as well as in an economical point of view, pertains to the question of supplying fish as an article of food in large quantities, and having in a former number of our Review given an account of the salmon and its congeners in connexion with the new Salmon-fishery Act, we are led to bring to the notice of readers the great experiment which has been made in France, and is still in progress, on pisciculture, and with such success, that the results, we think, only require to be known to encourage more exertions of the same kind than have hitherto been made in our own country, where, in truth, they are almost as much needed as in France, as we endeavoured to show in our former article.

The history of the pisciculture establishment at Huningue is not without interest. A few years ago a humble French fisherman, of the name of Remy, employed the process for breeding fish propounded and practised by Jacobi more than a century before, probably ignorant that he was following in the steps of another, and with such success—stocking rivers before barren of fish—as to attract the attention of the Government, marked by a well-merited reward which it conferred on him. The subject had next the attention of the naturalists, and under Government auspices varied experiments were made by M. Coste at the College of France. M. Coste's report was of a very satisfactory kind, proving to demonstration the practicability of the artificial method of propagating fish, and the great advantages which might accrue from pisciculture.

In 1852 the trial was begun, and in 1854 it was continued on an enlarged scale at the recommendation of the Director-General of Agriculture and Commerce, and under the Département de l'Administration des Ponts et Chaussées. Up to the present time the sum of about 265,186 francs has been the outlay on the necessary works.