Observations on diphtheritis / by Willoughby F. Wade.

OBSERVATIONS ON DIPHTHERITIS.

OBSERVATIONS ON DIPHTHERITIS.

BY

WILLOUGHBY F. WADE, B.A., M.B., T.C.D.,

PHYSICIAN TO THE GENERAL DISPENSARY,
FORMERLY RESIDENT PHYSICIAN TO THE GENERAL HOSPITAL,
BIRMINGHAM.

LONDON:
JOHN CHURCHILL, NEW BURLINGTON STREET.
MDCCCLVIII.

BIRMINGHAM:
PRINTED BY JOSIAH ALLEN, JUN.,
10, LIVERY STREET.

PREFACE.

My object in giving to these observations a wider circulation than they obtained in the publication in which they first appeared* is, that those of them which are novel may be corroborated, modified, or corrected by the experience of other practitioners before being converted into a basis upon which to erect a Pathological, and ultimately a Therapeutical, superstructure.

These remarks apply more especially to the occurrence of albuminuria in Diphtheritis—a phænomenon which has been indisputably common in the fatal cases which have occurred in this neighbourhood; and I believe, from the descriptions of former writers, that it was not less common in their time.

With other serious symptoms which may be concomitants of the albuminuria, this has appeared to me to be etiologically connected; and should my surmises on this point be verified, it must almost necessarily exercise an important influence upon the treatment.

Without further anticipating this portion of the subject, I may say that a *methodus medendi*, based upon these views, has been proved in my hands, and in those of others, to exercise a remarkable and most satisfactory control over the disease. It is clear, also, that the presence or absence of albuminuria must be taken into consideration in estimating the value of any new remedy.

This present part contains an account of the Symptomatology of the disease, preceded by an introductory chapter, which, though of an historical character, does not pretend to be anything like a complete history of the complaint; such points only being touched upon as seemed to be necessary to a correct study of the subject. I purpose, as speedily as possible, to further elucidate the disease by discussing

* *The Midland Quarterly Journal of the Medical Sciences.*

its Pathology and Therapeutics, upon which there seems to me to be at present a great confusion of opinions.

For several reasons I have not thought it necessary to discard the already naturalised name, "Diphtheritis," in favour of the one more recently proposed by Dr. Farr on the part of the Registrar-General, viz., "Diphtheria."

In the first place I object to the right, assumed by Dr. Farr (valuable a public officer as he is), to impose upon the medical profession a term which he has coined and circulated without the courtesy of previously submitting it for their approval or rejection.

Had there been any urgent necessity for a new name, or had the new title been more practically convenient or scientifically accurate than the one it displaced, I should still feel bound to enter this protest; but the procedure has not either of these grounds for excuse. The inconvenience of frequent alterations in medical nomenclature is known to those only who have endeavoured to study any disease historically. The uninitiated in nosological history may in vain study *indices* and pore over tables of contents, he will often miss the object of his research under the cacophonic titles which startle his eye. All this is particularly true of the disease under consideration—no other, I think, has received so many different appellations. Dr. Farr should, therefore, have pondered ere he added another to the gloomy list.

In spite of these reasons Dr. Farr has effectuated a change of name: the question, then, now is, has he done this judiciously?

The editor of the *Medical Times and Gazette** has the following remarks upon the two names adopted respectively by Bretonneau and the Registrar-General: "Bretonneau gave the name to the disease from its most obvious characteristic—the exudation of false membrane on the mucous membrane of the fauces, after the Greek διφθέρα, membrane. But the suffix, *itis*, used to denote inflammation, is clearly objectionable; it leads to the false notion that the disease is of a sthenic or inflammatory type, and is etymologically incorrect, as it implies that the pellicle or membrane—the diphthera—is inflamed: an obvious absurdity." I do not care to inquire whom "the suffix, *itis*, used to denote inflammation," would lead astray, but probably only those few whom the suffix, *eria* (from its resemblance to the termination of hysteria) may lead to suppose that the disease is a trifling or an imaginary one. But, seriously, an explanation of Dr.

* May 1, 1858.

Farr's views on the Pathology of this complaint would have been sufficient, and ought to have been substituted for the change of name.

But these objections are both urged against a shadow.

Bretonneau and Dr. Farr have both adopted, as nearly as possible, the same name; but the former had the advantage not only of priority but of propriety, and ought to have remained unmolested.

Διφθέρα, the Greek word signifying *a skin*, has given origin to three other words: Διφθερίας, a male who wears a skin (vestment); Διφθερίτης, another form of Διφθερίας; and Διφθερίτις, a female who wears a skin (vestment).

Now, as νόσος *morbus* is of the feminine gender, it is clear that Διφθερίτις, the feminine noun, is the only word which could be used correctly as the metonym of ἡ διφθεριτικὴ νόσος. And this word Bretonneau (whatever he may have purposed to do) chose. Dr. Farr, on the other hand, has most infelicitously chosen the masculine noun. Had this incongruity of gender no terrors for him, it would have been wiser, on the principle of avoiding change of name as much as possible, to have selected Διφθερίτης, which would have avoided "the suffix, *itis*," difficulty, and have produced a word similar to others (tympanites, ascites) now in use.

Further, as Dr. Farr's designation is always pronounced Diphthēria, whereas it should be Diphthĕria, he must be held responsible for the constantly repeated false quantity—a fault which is no less indecorous in a man than (according to a witty author) a *faux pas* is in one of the opposite sex.

One other inconvenience remains to be noticed. Many persons, who scrupulously adhere to the use of the word "Diphtheria," and thus by implication condemn "Diphtheritis," do nevertheless employ the old adjective "diphtheritic," derived from the latter substantive, instead of "diphtheric" or "diphtherical"—adjectives corresponding to the former noun. They are obliged to choose between the inconvenience of stultifying themselves or of still further multiplying words; and, perhaps not unwisely, they select the former alternative. This difficulty might have been obviated by the selection of "Diphtherites."

ON DIPHTHERITIS.

CHAPTER I.

INTRODUCTORY.

My object in the following remarks is to elucidate the pathology of this formidable disease, to explain some parts of its history and character which are at present mysterious, and, upon a more perfect knowledge of its nature, to base a plan of treatment which may render it, at least, somewhat less terrible. I say, terrible, for so it indeed now is both to parents and practitioners; the former understand, pretty generally its deadly nature, and the latter have so often experienced the inefficacy, even of the most lauded nostrums (for the treatment of it has been essentially empirical), that some within my own knowledge, and probably many more besides, look upon the summons to a case of diphtheritis as nothing less than a professional calamity: the reason for this feeling will appear presently.

In order to avoid any misunderstanding as to the identity of the disease, I shall, in the first place, give a brief description of its symptoms, and afterwards examine the accounts which have from time to time been published; this plan, although somewhat tedious, will enable us to obtain a more comprehensive view of the disease, and, I think, a better insight into its nature: some new observations which I have myself made, both

upon cases during life, and on dissection after death, will, I trust, throw some further light upon its pathology and treatment.

An impression, which may as well be removed *in limine*, is prevalent, that the disease is a new one, and that consequently but little is known or has been written upon it. So far is this from being the case, that there is good ground for believing that this disease was described by Aretæus, if not by Hippocrates; and its literature is almost as extensive as that of any other medical subject: it is true that its present fashionable denomination "*Diphtherite*" is of modern origin, but even this is now some thirty-odd years old.

It is a curious fact, that in each successive epidemic this has always, at least at first, been looked upon as a new disease, and by each succeeding writer has been treated of under a new name: this peculiarity still cleaves to the complaint. While writing these pages I observe that one author, in a weekly journal, expresses his decided opinion that the disease is a new one, and the name "Diphtheria," "adapted from the French," has lately been applied to it. It may not be uninteresting to append a list of *some* of the numerous names under which it previously appeared—viz., Angina epidemica, Angina gangrenosa, Angina maligna, Angina suffocativa, Angina ulcerosa, Angina strangulatoria, Angina membrancea, Angina pestilentialis, Apthetic ulcer, Apthæ malignæ, Febris epidemica cum anginâ ulcusculosâ, Prunella alba, Ulcus Syriacus seu Ægyptiacus, Pestilent tonsils, Cynanche maligna, Cynanche gangrenosa, Garotillo (Spanish), Male in canne (Neapolitan), Angine couenneuse, Angine membraneuse, Pedanchonia, Mal de gorge gangreneux, Passio anginosa, Affectus suffocativus, Putrid sore throat, Malignant sore throat, Phlegmone anginosa, Morbus gulæ, Morbus Puerorum, Tonsillæ pestilentes, Laqueus gutturis, Morbus strangulatorius, Præfocans pueros abscessus, Pestilens faucium affectus, Epidemica gutturis lues.

The invasion of diphtherite is announced by malaise, often amounting to an insupportable feeling of depression and muscular debility, objectively announced by the anxious countenance, rigors, which are often slight and unnoticed, occasionally well marked, a pallor or unhealthy hue of the face, in many cases headache, which however, is not often severe in the onset, disturbance of the abdominal viscera, denoted by sickness and purging and slight yellowness of the conjunctivæ, nocturnal delirium of a mild description occurs very early, often during the first twenty-four hours, it is not, however, of a character to alarm the attendants, and is consequently frequently overlooked, unless particularly inquired after by the medical man; at an early period, generally within twenty-four hours, sometimes much less, after the invasion of the disease, the patient, if old enough, will complain of more or less discomfort, rarely amounting to pain, in swallowing; this is commonly enough the first

symptom which leads to the calling in of a medical adviser though in some cases the dysphagia is so trivial that the friends or patient do not suspect any throat affection at all, till they are informed of its existence. On inspection of the throat, appearances varying much in degree, though not all in kind, are presented: in the slightest cases, *i. e.* the slightest judged by this particular symptom — though this is no measure whatever of the patient's ultimate, or even immediate, danger—in the slightest cases there may be nothing more than a little enlargement of the tonsils, which are generally of a dull red colour, and studded with whitish specks; the follicles may be dilated, giving rise to the impression that the tonsils are ulcerated; again, the tonsils may be covered with a skin of the same colour as the specks, the mucous membrane immediately continuous with that covered by the white lymph, will, in that case, present the redness and tumor which, in the first instance, appeared in the portions of the tonsils between the specks; or again, the whole mucous membrane of the tonsils, soft palate, back of the pharynx, uvula, hard palate, and even portions of the tongue and cheeks may be covered by thick tenacious film of varying thickness. On removing this, which may oftentimes be done, with a pair of forceps in large patches, so coherent is it, the mucous membrane (to which it is more or less adherent) will be found of a shade varying from dull purple to a fiery red, and tumified; the same observation applies to any part of the mucous membrane which may not have been, in the first instance, concealed by this white skin. Although the false membrane is white or whitish, it may acquire a dark hue from imbibition of blood or coloured drinks (*e. g.*, black currant tea), and subsequent desiccation. The breath is often described as being slightly fœtid or even very offensive, but this phænomenon is by no means universal; it depends probably, sometimes at all events, upon partial decomposition of the lymph or fluids secreted by the mucous membrane, and it is the custom now to pay much attention to the removal of these by topical applications. A red eruption, papular, generally of limited extent, and of very uncertain, but most frequently, short duration, may make its appearance upon some part of the skin about the time that the throat becomes affected, or it may precede the latter, or appear only late in the disease, or often not at all; the pulse quickens when reaction, following the first invasion of the disease, sets in, its rapidity is not usually extreme till near death, and there is rarely any hardness or sharpness about it; the skin is seldom very hot, frequently clammy, or not at all abnormal; the diarrhœa which often attends the onset of the complaint usually stops of itself in twenty-four to forty-eight hours, sometimes, however, it continues till death, and perhaps, more often, stays for a time and recurs some time previous to the fatal event. Persistence or recurrence of the diarrhœa have always been noted as unfavourable omens; the urine is

generally pale, rather scanty, but to the eye, normal, occasionally, however, high coloured and loaded with lithates.

Soon after, sometimes even before, the invasion of the throat, the absorbent glands of the neck and submaxillary regions become enlarged and painful, and may subsequently suppurate, these glands however, may be only slightly, or not at all, affected; if much enlarged they add greatly to the distress of the patient; at a somewhat later period an acrid, often offensive, sero-sanguineous discharge issues from the nares, the angles of which become ulcerated; these ulcers are sometimes coated with lymph, as are also the raw surfaces of blisters, when these have been applied. A gradual diminution of any or all of the symptoms above described is the indication of a favourable issue. The patient, however, not unfrequently dies when the disease is, apparently, very slight, or when convalescence is well established, or even, seemingly, almost complete. This feature of the complaint it is which especially renders it disagreeable to treat and difficult to manage. If the practitioner, aware of this circumstance, endeavours to impress the necessity of great care and caution upon careless parents, in what appears to them a trivial case, he is often supposed to be ignorant, or actuated by unworthy motives—a view which the successful result of his prevision is often believed to corroborate. If, on the contrary, ignorance of the treacherous character of the disease should lead him to speak lightly of the danger, and to give an unguardedly favourable prognosis soon after falsified by a fatal issue, parents not unnaturally infer that the case has been misunderstood, and their child has been carelessly and needlessly sacrificed. In cases which tend steadily to a fatal termination the aspect of the patient becomes more anxious, the pulse feebler and quicker, the exudation continues to be reproduced after removal, a purpuric condition is manifested by spots on the skin, and hæmorrhage, generally from the nares, bowels, or kidneys, the lips and tongue are covered with sordes, symptoms of croup manifest themselves, after which the patient seldom lasts for much more than twenty-four hours, often much less; in infants convulsions often precede death. The croupy symptoms occur finally in almost all fatal cases, whether in the onset they have been slight or severe.

Regurgitation of fluids through the nose during attempts at deglutition, is frequently seen in those cases where the throat is much affected. This does not occur at any stated period of the complaint: it is often accompanied by a nasal tone of voice; and these symptoms, or one of them, may persist for a long time after the patient is in other respects well. The duration of this disease is very uncertain: its most fatal period is from the sixth to the eighth day; but even after this time the patient is by no means necessarily secure. He may linger on without much alteration in the symptoms, and finally die several weeks

from the commencement of the attack, or the fatal event may occur within a day or two of the first seizure.

Diphtheritis, though not confined to children, comparatively seldom attacks adults. It is usually epidemic, and may occur at any period of the year; though spring and autumn seem most favourable to its ravages. Its victims have often been previously in a delicate state of health, though this is by no means constantly the case. When it has invaded a family, it will, unless precautions be taken to separate the sick, run through all the children. Several of them may die, or all may recover; but if one recover, those attacked subsequently seldom die: and this is a very important and useful prognostic.

Such is a brief sketch of this disorder, which I shall presently endeavour to fill up by collating the opinions of the many great observers who have left us writings upon this subject.

In order to obtain the widest possible basis of facts upon which to found the pathology of this disease, as well as to afford a standard with which we may compare the symptoms I have stated, it is desirable to consult the descriptions of authors who have observed this disorder at different periods and in different places. Advantageous as this method is in all cases, it is infinitely more so when diseases of an epidemic character are concerned; for consistent as the specimens of an epidemic may be with others occurring in the same season, or in the same locality, we well know that at another time, or in another place, variations of the widest range may be seen: "the epidemic constitution," deeply as it impresses itself upon sporadic disorders, is made manifest more especially in those of the zymotic class.

Now, a vast number of authors have described from time to time, chiefly during the last three centuries, epidemics of throat affections of an excessively fatal character, to the identity of which however, with diptheritis, two principal objections may be raised. Firstly, that some of them were very similar to scarlet fever; and, secondly, that most of them were described to be attended with sloughing and ulceration of the fauces and the parts thereabouts.

Bretonneau witnessed, at Tours, an epidemic sore throat of a most deadly sort, for which he invented the name of "diphthérite." His conclusions upon its nature he published in a volume* (consisting of several independent "Mémoires," previously presented to the French Academy of Medicine), which, ill-arranged as it is, has rendered his own name, as well as that of the seat of his observations, famous in the annals of medicine. His dissections and clinical observation led him to believe that diphtherite was essentially the same disease

* *Des Inflammations spéciales du Tissu muqueux, et en particulier de la Diphtherite, ou Inflammation pelliculaire, connue sous le nom de Croup, d'Angine Maligne, d'Angine Gangreneuse, &c.* Par P. Bretonneau. Paris: 1826. 8vo.

as scorbutic gangrene of the gums, and croup, and that, besides these, it had no pathological relations; and he strenuously denied that there was any connexion whatever between it and scarlatina.

Bretonneau's arguments in support of this position may be stated in his own words.

"If the character of the cutaneous eruption which ordinarily accompanies scarlatina anginosa can be easily appreciated, it yet cannot be doubted that the pharyngeal inflammation peculiar to scarlatina exists without being accompanied by the other symptoms of scarlatina. It is especially in such a case that the filmy (*couenneuse**) inflammation of the tonsils presents a deceptive resemblance to the pellicular *(pelliculaire)* inflammation.

"Several characteristics, however, aid us in distinguishing between them. In the scarlatinal angina, the superficial ulceration is rather overspread with a filmy *(couenneuse)* exudation, intimately adherent, than covered with a membranous pellicle.

"If an opaque, white, caseiforme secretion does cover the bright redness of the *velum palati* and the walls of the pharynx, it can be easily wrinkled; and it does not assume either the lichenoid aspect, nor the coherence of a false membrane.

"The tonsils are, it is true, the principal seat of the inflammation; but the whole cavity of the fauces, and that of the nostrils, are invaded simultaneously by a vivid redness; and the point of origin of this morbid affection is not, as in the diphtherite, at first limited and circumscribed. Finally, there is a more important differential characteristic of the scarlatinal inflammation of the pharynx: it has not any tendency to propagate itself into the air-tubes." (*Op. Cit.;* p. 250.)

A little farther on he contends against the supposition that scarlatina is ever complicated by croup, and in other parts of his work shows that it is upon this difference between the two diseases that he substantially rests his differential diagnosis.

Now, as Bretonneau, in the preceding quotation, limits himself to establishing distinctions between scarlatina without eruption, but with some whitish exudation on the tonsils, and true diphtheritis, it may, I think, fairly be taken for granted that he thinks it needless to elaborate diagnostics between scarlatina with eruption (albeit with a whitish exudation) and diphtheritis—the eruption alone in such a case being sufficient in his eyes to stamp the affection as scarlet fever.

The condition of the fauces affords no reliable distinctions between the

* I translate "couenneuse" filmy for the purpose of giving greater value to Bretonneau's argument than the dictionary meaning of this word would do—"covered with a skin, sward, or incrustation." To show that the distinction Bretonneau has endeavoured to insinuate between the exudation in diphtherite and that in scarlatina, by applying the term "couenneuse" to the latter, is a mere verbal one, inappreciable even by French authors, I may state that both Roche and Guersant call diphtherite "angine couenneuse."

two diseases. In diphtherite, says M. Roche,§ "we see that the base of the tongue, the *velum palati*, and the uvula, which is ordinarily swelled and pendulous, are of a more or less vivid redness, from pale rose up to the darkest scarlet." (Tome ii, p. 548.) Bretonneau himself admits that there is in diphtherite a bright red margin round each patch of lymph, and that these may, in a few hours, cover the whole of the fauces, and that the mucous membrane underneath these patches is of a similar hue; and even in ordinary scarlet fever, the redness of these parts may vary very considerably in degree.

It is also an undoubted fact that the thickness and tenacity of the false membrane may vary exceedingly. He says himself of scarlatina —"the *couenneuse* ulceration of the tonsils presents appearances well calculated to simulate gangrene of the back of the mouth, and the prolonged death-rattle leaves no doubt that the dyspnœa depended upon a mechanical obstruction to the respiration. It is not likely either that Huxham† should mistake a layer of mucus for pieces of the internal membrane of the windpipe (p. 281); or that Fothergill‡ should mistake the false membrane for a thick opaque or ash-coloured slough (p. 237), unless it were pretty thick and tenacious.

The exudation in diphtherite varies in thickness very considerably, even according to Bretonneau's own statements. In a family which I attended during this present epidemic, five persons were attacked: in none of these was the faucial membrane extensive or thicker than thin parchment; in two, there was but a slight patch on one tonsil, not sufficiently thick to conceal from view the mucous membrane, and appearing more like a small quantity of apothecaries' honey smeared on the part than anything else. As all these persons were attacked in less than a week, we may presume that they were all affected by the same disease; and as the two who died were found on dissection to have their *tracheæ* lined by a consistent false membrane, resembling, as Bard* says (p. 12), "wet shammoy *(sic)* leather," we may further presume that Bretonneau would admit this disease to have been true diphtherite.

The first cases which I saw in this present epidemic, I attended in conjunction with my friend Mr. Clayton. A little girl, who had been staying in a neighbouring town where a malignant throat disease had prevailed, was there seized with it: she was immediately sent home to Birmingham. The false membrane was so thick and tenacious that it could be, and was on several occasions, removed in large portions by means of a pair

§ *Dictionnaire de Médecine et de Chirurgie Pratiques.* Paris: 1829.

† *An Essay on Fevers: to which there is now added a Dissertation on the Malignant Ulcerous Sore Throat.* By John Huxham, M.D. Seventh edition. London: 1772. 8vo.

‡ *A complete Collection of the Medical and Philosophical Works of John Fothergill, M.D., F.R.S.* London: 1781. 8vo.

* *An Inquiry into the Nature, Cause, and Cure of the Angina Suffocativa, or Sore Throat Distemper, as it is commonly called by the Inhabitants of this City and Colony.* By Samuel Bard, M.D., and Professor of Medicine in King's College, New York. New York: 1771. 8vo.

of dressing forceps; it was firm, whitish, and tough. Within a day or two of her return home her little brother was attacked by a sore throat, attended with slight fever. Two other children were shortly after similarly affected. In none of these did the exudation exceed in quantity or tenacity that I have described as existing in the first family. Now this example shows, I think conclusively, that the exudation does not afford a criterion by which to distinguish diphtheritic scarlet fever from true diphtheritis. It is, however, as unnecessary as it would be wearisome to accumulate any more arguments upon this point: I shall, therefore, pass on to the consideration of Bretonneau's Shibboleth—croup.

The position which Bretonneau has taken up in this part of his argument is a very strong one, chiefly in consequence of the strict limitations he has imposed upon the class of facts which he thought might be produced against him.

It might appear at first sight that had he made a mistake upon this point (the coexistence of scarlet fever and croup), it would have been a simple matter to convict him of it; or, on the other hand, if this could not readily be done, that the very paucity of evidence would show that he was substantially correct in his opinion, though somewhat inaccurate in expressing it. The view would not, however, be correct; since he has made this (as he asserts invariable difference) his crucial distinction between scarlet fever and diphtherite. Numberless authorities assert the coexistence of scarlatina and croup; but Bretonneau admits the validity of no evidence upon this point which is not supported by *post mortem* examination. Now, as the existence of croup, as a generally recognized disease, dates only from the year 1765, when Dr. Home* published his observations upon it, and between that date and the year 1826, when Bretonneau published his book, no notorious epidemic of malignant sore throat had prevailed; and since, moreover, the occurrence of diphtheritic scarlet fever is rare, and the termination of this by croup rarer still, it cannot be surprising that such conclusive evidence is but scanty.

The prize offered by Napoleon I, in 1807, for the best dissertation on croup, was divided between Jurine,† of Geneva, and Albers,‡ of Bremen. Albers' book I have been unable to procure, and shall, therefore, endeavour to ascertain the value of his assertions by a reference to the same authority § from which Bretonneau inferred that he had not established the existence of this combination.

Albers defines croup to be "an inflammation of the mucous membrane of the larynx, trachea, and its divisions; an inflammation which has a

* *Inquiry into the Nature, Cause, and Cure of Croup.* Edinburgh: 1765. 8vo.

† This essay was never published: an abstract of it may be found in Royer-Collard's Report.

‡ *Comment. de Tracheitide Infantum, &c.* Lipsiæ: 1816. Folio.

§ The Official Report of the Commission appointed by the Emperor to report on the Essays sent in to compete for the prize. *Precis Analytique du Croup, &c.:* par J. Bricheteau. Précédé du *Rapport sur les Mémoires envoyés au concours sur le Croup etabli par le Gouvernement en* 1807. Par Royer-Collard. Deuxiéme edition. Paris: 1826. 8vo.

peculiar progress and characteristics, and the most common effect of which is to provoke the secretion of a peculiar material, essentially composed of coagulable lymph and fibrine. This matter is always designated by the author 'plastic lymph.'" (*Op. cit.;* p. 78.)

"The most formidable of all the complications of croup is that of scarlatina. The author has unfortunately had numerous opportunities of observing it, and he reports several examples. * * * The author confesses that he has lost thirty-six cases." (Pp. 99, 100.)

"When the croup is simple the lungs are always healthy after death, in the complications with variola they are often found inflamed, more rarely so in the complications with rubeola, and never in those with scarlatina." (P. 114.)

If medical evidence were never less conclusive there would be an infinite saving of time and trouble; to my mind this is quite satisfactory proof that Albers had had *post mortem* evidence of the correctness of his statement. I shall, however, proceed to quote some evidence of a similar character from English authors.

Mr. Sym, of Kilmarnock, Ayrshire, says,* "Early in the spring of 1824, ulcerated sore throat, accompanied in some instances by scarlatina, became prevalent in this neighbourhood. In general it did not prove fatal; but a number of cases became complicated with croup, and of such cases I only met with one which terminated favourably. The disease seemed to be contagious among children. * * * In infants the symptoms of croup were most decided, the affection of the fauces being in many cases so trifling that it had not been attended to by their mothers, until I detected the ulcers, upon examination, after the accession of the croup had commenced. In one family, consisting of three children, who were successively attacked by the disease, two died and one recovered, the only cure of the complicated affection that occurred in my practice. Having examined the windpipe of one of these children after death, I found it filled with a thick, firm lymphatic tube, which extended into the bronchial ramifications. In the case which terminated favourably the ulcers were getting better when the croup commenced; and to this circumstance I attribute the efficacy of the remedies in operating a cure. From what I observed I concluded that the ulcerated sore throat, which appeared to be closely allied to scarlatina, constituted the contagious part of the disease; and that the croup was occasioned by an extension of the inflammation at the margin of the ulcers into the rima glottidis, and from thence along the mucous membrane of the trachea. This idea seems to derive confirmation from your cases;† and if further supported by the observation of other practitioners it may

* *London Medical and Physical Journal;* vol. lv, from January to June, 1826.

† These observations were communicated to Dr. G. Gregory.

account for the contagious character of certain species of croup." (*Loc. Cit.;* pp. 14, 15.)

In the same journal we find the following remarks upon this subject by Mr. W. Pretty: "I have witnessed many severe and fatal cases of croup, after, or rather in conjunction with, simple scarlet fever and malignant sore throat: and here I have no hesitation in subscribing to the belief of its (croup) being contagious, but not as the primary disease. It usually comes on after several days continuance of one or other of the diseases just mentioned, and seemed to owe its production to the extension of inflammation from the fauces to the larynx and trachea in young children; and they were, to the best of my recollection, exclusively the objects of its violence: it proved generally fatal.

"While practising in Kent, about nine years ago, I had an opportunity of seeing a great number of persons ill with an epidemic visitation of scarlet fever and malignant sore throat; the young and middle aged in the lower classes of society were very generally affected by it. * * * The croupy symptoms were confined to young children. * * * I obtained opportunities of examination after death; and in all who died with croup as a symptom (and I recollect none who died without it), I found extensive inflammation of the fauces, larynx, and trachea.

"The adventitious membrane commonly found in fatal cases of cynanche trachealis, was present in many instances; in others only a copious exudation of thick mucus; in some a positive sloughing of the tonsils, velum palati, and epiglottis. I well remember one dissection of a child about five years old, where I found the last described state of parts, with the addition of ulceration in the interior of the larynx, and a perfect lining of the tracheal tube a considerable way down towards the lungs, formed of coagulable lymph; I might here observe that the scarlet efflorescence on the skin was wanting in some cases in adults, and that those who had it not, or but faintly, generally had the worst throats. The same contagion produced in some the scarlet fever, in others the malignant sore throat." (*Loc. Cit.;* pp. 9, 10.)

I shall quote yet another case from the same journal, attended and related by Dr. George Gregory. "On visiting the child (*ætat* four and a half), I found him extremely ill with ulcerated sore throat, which had been present six days, and by the mother's account (which was, however, very indistinct), had been preceded in its early stage by a scarlet eruption. * * * Returning on the following day, I found that about midnight he had been seized with well marked symptoms of croup. * * * The child died within twenty-four hours from the invasion of the croupy symptoms.

"Permission being given to open the body, the trachea was found lined by a pretty thick tube of coagulating lymph, extending down nearly as far as the division of the bronchi. The larynx contained a considerable

quantity of a dense glairy effusion. The trachea was removed, and submitted the same evening to the inspection of a number of gentlemen, who considered it as exhibiting a fine specimen of this remarkable morbid appearance." (*Op. Cit.;* vol. liv, p. 285.)

Two other children, occupying the same room, within a few days became similarly affected and died.

If it be objected to these observations that they do not specifically state the conjunction, in any individual case, of unmistakable scarlatina with *post mortem* proof of croup, it is very evident that the reporters believed that such a conjunction did occur; and it cannot be doubted that the epidemic was one of scarlatina, and that in cases which the observers believed, apparently upon substantial grounds, to be examples of the prevalent disease, croup was proved by necroscopic examination to have been the cause of death.

In the face of such facts it requires, to say the least, some temerity to assert that croup is never a complication of scarlatina. This is not the place to enter into a consideration of the contagiousness of croup, which, however, as may be seen by some of the passages above quoted, corroborates the views I have advanced.

I have, moreover, given Bretonneau the utmost possible latitude: for he himself asserts that there is no difficulty (and here I agree with him) in diagnosing between true croupy breathing, and stridor caused by the obstruction of the fauces from tumidity of the mucous membrane, and its being coated with lymph.

Furthermore, if Bretonneau admit none but anatomical proof of the existence of croup, and yet contend that croup is an essential ingredient in malignant sore throat, then he cannot adduce any evidence whatsoever that the authors of the seventeenth century described (as he assumes they did) the same disease as himself; and this would almost justify the author of a review on his work in saying,* "Angina maligna, we think, we shall be able to show was never seen at all. Croup—but croup singularly modified—constituted the fatal, long prevailing, and hardly yet extinct epidemic."

The conclusion which I draw from the foregoing considerations is, that the distinctions between diphtheritis and scarlatina, as laid down by Bretonneau, do not justify his assertion that there is no pathological affinity between the two diseases; and, consequently, I do not consider myself debarred from inquiring into the relation between epidemics of malignant sore throat undoubtedly congeneric with scarlatina, and others such as that at Tours, or the present one in which this connexion is less manifest, and perhaps questionable.

The nature of the white patches seen on looking into the mouth

* *London Medical Repository;* N. S.; July—December, 1826; p. 489. From internal evidence this review would appear to have been written by Dr. John Conolly.

is a subject of considerable importance, not only as bearing on the identity of various epidemics, but because false notions on this point still exist.

The production of false membrane, fibrinous exudation (or by whatever name we choose to call it) by an inflamed mucous surface, can be no more disputed than can the analogous production of pus by inflamed serous membranes. The tests by which we determine that it is from this process, and not from sloughing or destruction of parts, that the appearances in question result, are applicable most fully to cases which we have the opportunity of inspecting, but in a sufficient measure also to those recorded with precision by old writers, who were however less happy in their pathological explanations than in their descriptions of nature.

It is, moreover, a fact—ascertained by Bard, corroborated by subsequent observers, and to which I can myself bear witness—that the appearances in question do depend on such an exudation upon the surface of the mucous membrane, and not on its destruction or death. The existence of ulceration is not of much importance, and I shall dismiss it by observing, that if there were sloughing this must have been succeeded by an ulcer; and if there were no sloughing there might yet have been some superficial ulceration, though I have never seen any myself. The real point at issue is, whether or no the older writers were right in calling those appearances—which they have described—sloughs.

The first argument in favour of the identity of the throat disease in the various epidemics, is the applicability of the descriptions of the older writers to what we now meet with: thus Chomel,* speaking of his fourth patient, says, "On the next day, in the afternoon, in examining the bottom of the mouth, they perceived an aptha or white spot on one of the almonds (or tonsils), and this was constantly observed, that in all those that had the distemper these spots appeared in twenty-four hours from the seizure, and spread instantaneously. * * * The eschars filled, and as it were choked up at the bottom of the throat, and were near of the colour of hogs' lard" (*Op. Cit;* pp. 18, 19): in another (the seventh) case occurring in the same school the next day, "The almonds (or tonsils) were lightly covered with little white spots" (p. 28); on the sixth day this child vomited, and Chomel "distinctly observed several pieces of membranous eschars in what came up." (P. 29.) Fothergill says, "Instead of this redness" (of the fauces), "a broad spot or patch of an irregular figure and of a pale white colour is sometimes to be seen, surrounded with a florid red; which whiteness commonly appears like that of the gums immediately after having been pressed with the finger,

* *An Historical Dissertation on a particular species of Gangrenous Sore Throat, which reigned the last year among young children in Paris.* Translated from the French of Dr. Chomel, which was printed at Paris in the year 1742. By N. Torriano, M.D. London: 1753.

or as if matter, ready to be discharged, was contained underneath.* (*Op. Cit.;* p. 204.) Fothergill's opinion was that "These sloughs are not formed of any foreign matter spread upon the parts affected as a crust or coat, but are real mortifications of the substance; since whenever they come off or are separated from the parts they cover, they leave an ulcer of a greater or less depth, as the sloughs were superficial or penetrating" (pp. 237, 8): he admits, however, the facility with which they may be detached, and the rapidity of their reproduction. "In a case" (says he) "where I was concerned, previous to my being called in, a surgeon had endeavoured to separate the sloughs by the assistance of his probe; he succeeded without much difficulty, but was surprised to see the same parts covered the next day with thick, dark, ash-coloured sloughs, penetrating deep into the substance. (P. 239.) Huxham's statements and views coincide pretty nearly with those of Fothergill; but with all respect for their acuteness and accuracy, I cannot help thinking that they were deceived. Gangrene, producing sloughs which were removable without much difficulty soon after their formation, and in a short time succeeded by others, must, undoubtedly, have also caused further consequences, of which we find no mention made; it must have been closely allied to sloughing phagedæna, a disease which produces greater destruction of parts than any other, opening blood vessels, denuding and even destroying bone, to say nothing of such unresisting textures as the uvula, soft palate, and tonsils; yet we never find that in a single instance was the internal carotid opened, which from its proximity to the seat of disease must necessarily have occurred, and it is not an accident likely to have been overlooked or misunderstood. It is true that epistaxis is mentioned by all these authors, but that we *know* to depend upon a purpuric condition producing hæmorrhage from many other organs, certainly without any kind of gangrene. These writers believed that the hæmorrhage resulted from the opening of an artery by gangrene, but they offer no proof of it whatsoever. Fothergill's statement on this point is as follows: "The sick sometimes bleed at the nose towards the beginning of the disease; and the menses very often appear in those of the female sex who are of an age to have them, soon after they are seized, notwithstanding the regular period is at a considerable distance; if they are taken ill about the usual season, the discharge is greater than it ought to be: some young persons who never had the least appearance of them, have had this evacuation during their illness:" and further on, "It has happened in this distemper that hæmorrhage from the nose and mouth have suddenly carried off the patient; I have heard of the like accident from bleeding at the ear; but these fatal discharges most commonly happen

* In a case I recently saw, the child's father asked if there were not some matter which ought to be let out, and, when answered in the negative, directed our attention to the white spot, which he imagined we must have overlooked.

after the patient has been ill several days, and it seems more probable that they proceed from the separation of a slough from the branch of an artery, rather than from a fulness of the vessels, or an effort of nature to relieve herself by a salutary crisis. (*Op. Cit.;* pp. 212, 3.) He quotes Heredia's* opinion to the same effect. This explanation is offered merely as a probability, and we now know that it is not only improbable but entirely inconsistent with our present knowledge. Again, we never find any mention made of the uvula being destroyed, the soft palate perforated or eaten away, the palatial bones denuded; some or all of which must have repeatedly happened in the course of such a gangrene. Again, we now know that the fœtor of the breath, which was considered by all these writers as a strong proof of the existence of gangrene, is no criterion whatever, and that it occurs in cases in which gangrene is entirely absent.

In spite, then, of Fothergill's assertion, and without attempting to explain how he came to make such a mistake—though this might not be so very difficult—I conceive that the arguments I have adduced prove unanswerably that the opinion here expressed, respecting those appearances of the fauces which he has described, is the correct one, and that, consequently, Fothergill and others must have mistaken exudation on the mucous membrane for sloughs of its substance.

* *Petri Michaelis de Heredia Complutensis archiatri—Philippi IV, Hispaniarum regis—Opera medicinalia.* Lugduni: 1673. Folio.

CHAPTER II.

SYMPTOMATOLOGY.

For convenience' sake we may make an arbitrary division of the disease into three stages, and consider, first, the initial symptoms, or those which attend its commencement; when the complaint is fully established, which I take it to be when the exudation has appeared in the throat, the second stage may be said to commence, and this comprises those symptoms which mark the duration or continuance of the disorder; the third stage being the terminal one, embracing the symptoms which indicate the conclusion of the case, whether this be favourable or the reverse.

Even a moderate experience of one epidemic teaches that the invasion of diphtheritis presents several varieties—though the differences are in degree rather than in kind—it cannot, therefore, be a matter of much surprise that various authors describing various visitations should occasionally disagree. Sometimes even now the symptoms of invasion are so insignificant that they are attributed to a slight cold or some equally trifling cause, and the parents of a child may be only awakened to a sense of its danger by the supervention of croup or some other formidable complication.

Those authors who describe (as most do) any phænomena antecedent to the special throat ones, agree in stating them to be such as usually attend febrile disorders. Fothergill says, "It generally comes on with such a giddiness of the head as commonly precedes fainting, and a chillness or shivering like that of an ague fit; this is soon followed by great heat, and these interchangeably succeed each other during some hours, till at length the heat becomes constant and intense." (*Op. Cit.;* p. 202.) Ghisi also speaks of high fever occurring before the ulcers, as he calls the exudation on the fauces. (*Bretonneau: Op. Cit.;* p. 459.) Alaymus, on the contrary, says, "Ut plurimum hic morbus vel absque febre, vel cum levissimâ incipit." (*Chomel: Op. Cit.;* p. 48.) Chomel himself, as well as Dubourg and Astruc, whose letters are appended to the work of the first-mentioned author, observes that rigors more or

less severe, followed by a corresponding fever, ushered in this complaint. Cullen, too, and Johnstone bear similar testimony: the words of the former* are—"This disease (Cynanche maligna) is usually attended with a considerable pyrexia; and the symptoms of the accession of this, such as frequent cold, shiverings, sickness, anxiety, and vomiting, are often the first appearances of the disease." (Vol. i, p. 203.) It is unnecessary to quote Dr. Johnstone's† remarks, inasmuch as they appear to be copied from Fothergill, with whom of course he agrees. Bard does not say much about the initial symptoms, but signifies in several places (*Op. Cit.;* pp. 6, 7, 9, 10, &c.) that fever was present.

During the rigor and subsequent reaction we may note proofs of the disturbance of various functions; for example, vomiting, purging, delirium, headache, and probably others; but as their occurrence is variable, and they are only common phænomena in such conditions, it is not necessary to dwell upon them further than to say that some or perhaps all of them may be absent in particular cases, or even in the entire of an epidemic,‡ and that whatever symptoms do occur at this period may be referred to the causes above-mentioned, and are severe in proportion to the amount of fever. There are several important points connected with the initial fever as a whole which may be conveniently set down in this place. 1st. The febrile reaction is often, perhaps generally, out of proportion to, I mean less than, the preceding depression or rigors. 2nd. The initial fever, though frequently slight, is nevertheless almost invariably present. 3rd. It precedes the faucial exudation. 4th. It bears no proportion whatever to the amount of this exudation.

I do not particularly insist upon the accuracy of the first point, but rather suggest it as a matter for future observation; it is not of great consequence to decide at present, as I do not purpose to found any argument upon it. With regard to the second remark, all authors who carefully describe the symptoms agree upon this point; and those who pass it by seem to do so from not attaching any great importance to its presence or absence, and I am not aware of any one who positively disputes its correctness. Cases are frequently narrated in which the patient has been "ailing" or "poorly" for some days before the disease

* *First Lines of the Practice of Physic.* By William Cullen, M.D., late Professor of the Practice of Physic in the University of Edinburgh. A new edition, &c. Edinburgh: 1803. Two volumes 8vo.

† *A Treatise on the Malignant Angina or Putrid and Ulcerous Sore Throat; to which are added some Remarks on the Angina Trachealis.* By J. Johnstone, M.D., Physician at Worcester. Worcester: 1779. 8vo.

‡ The following note from Fothergill bears upon this point: "The vomiting and purging were but seldom observed to accompany this disease at its first appearance amongst us, as I have been informed by some physicians of eminence who saw it early; but it is generally agreed that these symptoms almost constantly attended, in the manner here described, during the years 1747 and 1748, the time in which these observations were collected; and I have since found that the above-mentioned symptoms have not so regularly appeared as at that time." (*Op. Cit.;* p. 202; *Note.*) It is well to observe that fever was more pronounced in the epidemic described by Fothergill than it has been in later visitations.

had been recognized, and where the nature of this premonitory sickness is sufficiently described to enable us to decide on its nature, it will always be found that its features are such as I have set down. Cases, on the other hand, not unfrequently present themselves in which an apparently sudden outburst of the disease has brought the sufferer into great discomfort or evident danger; but although we may fail to obtain any previous history, it does not follow that the illness commenced when it appeared to do so. The same thing often happens under similar circumstances in other complaints: in a case of perforation of the stomach or uræmic convulsions or coma, we incur the suspicion of trifling by making inquiries as to the preëxistence of slight dyspeptic or renal symptoms, the connexion of which with the terrible pain or the manifest gravity of his present state, the patient's friends cannot comprehend, or are not sufficiently collected to call to mind, if, indeed, they were acquainted with them.* These are not solitary instances of the necessity of bearing in mind the various sources of fallacy which beset medical investigations, a knowledge of which would prevent many an erroneous diagnosis. The bearing of this question on the pathology of the disease I reserve for its appropriate place. Lest, however, the fact of cases occurring without febrile symptoms should prejudice the reader's mind, I beg him to remember that, paradoxical as it may appear, some of the worst cases of fever present no febrile symptoms. Thus, small-pox, measles, and scarlet fever, sometimes slay their victims without any pyrexia or reaction. Such fevers are truly pestilential, and probably have constituted those visitations which in different times and countries have been denominated "Plagues." The following quotation from Fracastorius† shows that this point did not escape the acumen of our medical forefathers: "Hinc illa contingere, quæ in pestiferis apparent febribus, non sentire scilicet ægrum se febrire, pulsus non magnos, non citatos percipi, maximam mortalium partem perire." (P. 263.)

The third point I mention again in this place for the purpose of drawing attention to it, as it is of much importance.

The last point may be considered in conjunction with the throat phænomena generally, which I shall now proceed to. With the appearance of exudation upon the fauces, the initial stage may be said to conclude; the disease is then fully developed. At what time, then, does this take place? There are difficulties in the way of determining this point which have not yet been surmounted; but as yet little or no importance has been attached to the settlement of it: when this

* Some little time ago, I saw an elderly female who was in great torture from what I conceived to be cystitis, consequent upon a metastasis of gout from the bronchi to the bladder. She would then answer no questions whatever relative to her bronchitis. At my second visit, the bladder, I found, had been relieved; but the bronchitis had returned. At this time, it was as impossible to divert her mind from her pectoral symptoms as it had been before from her vesical ones.

† Hieronymi Fracastorii Veron. liber i, *De sympathiâ et antipathiâ rerum. De contagione, et contagiosis morbis, et eorum curatione*, Libri tres. Lugduni: 1550. Duo.

has been recognized, it is to be hoped that sufficient data may be collected to decide it, for it is most pertinent to the nature of diphtheritis. It is a matter which depends almost entirely upon medical observation: we can derive little or no assistance from mothers or nurses. In slight cases, many days may elapse before medical advice is procured: there are very few in which twenty-four hours does not elapse; and of the apparently most acute cases, some, if not many, have been longer in existence than is supposed. How soon, then, the exudation may occur I cannot tell; but I think we may say that forty-eight hours is the limit of delay: with what, if any qualification this statement is to be taken, will be discussed at a subsequent period.

The first stage of the throat mischief is the tumefaction and congestion of the mucous membrane and tonsils. The swelling of these is caused partly by fulness of their vessels, and partly, I think, by submucous œdema, as I have found upon *post mortem* examination. The redness may vary, as previously stated, from a slight increase of the natural pinkness of the parts to a deep purple; and it may affect only one tonsil or the whole mucous membrane of the buccal cavity. The tumidity of these parts is, for the most part, in direct proportion to their vascularity. The places upon which we may first discern the exudation are, as Fothergill says, "the tonsils and the angles above the tonsils." When very small in amount, it appears in the form of white dots or specks upon either tonsil, and the disease has hence acquired the popular name of "specked throat." These specks seem to be formed in the follicles of the tonsil, from which they may be distinctly seen to protrude: when the lymph is spread over the rest of the fauces, it presents a uniform whitish surface, thus giving rise to another vulgar name—"the white throat;" it is then, as it were, anchored down by those portions within the follicles, which is certainly one cause of the difficulty sometimes experienced in stripping it off. The thickness of this coating may vary from that of an exceedingly delicate lamina to several lines. *(Bretonneau.)* That it is really lymph spread *upon* the mucous membrane is proved, first by microscopical examination, which shows it to consist of the fibrillar and corpuscular elements of plastic lymph in varying proportion; and secondly by the possibility of stripping it off either during life or after death, the mucous membrane underneath remaining perfect. Since this was written I have seen* a Clinical Lecture by Dr. Laycock, of Edinburgh, whose views will be understood by reading the subjoined passage: "The immediate cause of death was the exhausting intractable diarrhœa. Now this supervened coincidently with an attack of diphtheria or diphtherite. At the onset of the disease, and just before death, we found in the pellicle formed on the tongue and fauces the sporules and mycelium of the *oidium albicans* a

* *Medical Times and Gazette;* May 29, 1858.

parasitic fungus found also in *muguet*—the epidemic aphtha or diphtheria of infants in France. This is an interesting fact at the present moment, when diphtherite is prevalent, more especially as the pellicle was also found abundantly after death in the œsophagus. I have little doubt that this pellicle was due to the action of the parasite on the enfeebled mucous surfaces of the mouth, fauces, &c. It acts like all its tribe, as an irritant, inducing increased formation of epithelial scales and effusion of mucus, exudation corpuscles, or plasma: intermingled amongst these are the sporules and the mycelium of the microscopic fungus, as you see in this drawing of *muguet;** the whole constitutes a pellicle or membrane, as it has been termed, varying in thickness and tenacity according to the surface attacked, and according to the condition of the patient." Dr. Laycock enlarges upon these views at some length, and applies them to the explanation of epidemic diphtheritis, which he looks upon as malignant scarlet fever or measles, plus *muguet*. I have, since reading the above, had an opportunity of examining the secretions in the following case: A young girl, who had been ill for a week, came under my notice before she had been submitted to any treatment; the uvula was nearly covered with a tenacious pellicle: this I was unable to detach. I obtained, however, some of the white fur with which the tongue, especially at its base, was thickly coated: this, which was not at all coherent, contained vast quantities of the minute so-called alga *leptothrix buccalis*,† but not a trace of the *oidium*. I also examined one of the white specks with which the left tonsil was sparsely studded; on the outer surface of this the *leptothrix* was discoverable in very small quantity, but not a trace of *oidium*. These examinations were most minute and protracted. Mr. Jauncey, however, informs me that he has examined one case which corroborated Dr. Laycock's observations. This is not the place, even were sufficient data in existence, to discuss the real relation between these organisms and diphtheritis; but it is one which will obtain, as it deserves investigation.‡ The adhesion of the lymph to the subjacent mucous membrane is sometimes so intimate that, in removing it, we may tear away some portion of the membrane, causing more or less hæmorrhage, and leaving a raw surface.

With regard to the absence of proportion between the amount of fever and the quantity of the exudation, I shall, for the sake of brevity, simply state that my own observation leads me to conclude, what no authority contradicts, viz., that there is no uniform, if any, correspondence between the amount of fever and the extent or thickness of the exudation.

* From *Robin's Histoire Naturelle des Vegetaux Parasites qui croissent sur l'Homme, &c.* Plate i, figs. 3—7.

† For a figure and description of this see p. 177 of *The Microscope and its Applications to Clinical Medicine.* By Lionel S. Beale, M.B., &c. London: 1854. 8vo.

‡ For the connexion between aphthæ or *muguet*, and the *oidium albicans*, see a summary of M. Gubler's conclusions in the writer's "Report on the Progress of Pathology and Practical Medicine" in *The Midland Quarterly Journal* for January, 1858.

Fothergill says, "Some grow easier from the first day of the attack." Now, I have suspected sometimes that a certain diminution of the general symptoms is coincident with the first appearance of the exudation. This is noted merely as a point to which future observation may be usefully directed.

The disease is now fully established, and we accordingly enter upon a consideration of those symptoms which attend its continuance.

The complaint, if mild at the commencement, may run on for five or six days and then terminate favourably in a manner to be described presently; or, if severe at the onset, it may terminate either favourably or the reverse without presenting any additional symptoms except those which indicate complications of a fatal character, the description of which will, therefore, be deferred till we come to the consideration of the terminal symptoms.

The condition of the throat during the second stage is varied naturally only by the increased or dimininished extent and thickness of the lymphy coating, and its becoming stained, as sometimes happens, with blood. Artificially, it may be coloured by drinks, or in the absence of these, desiccated by respiration, or made ragged and irregular by the removal of portions by various means. It does not otherwise ordinarily diminish much till the disease is drawing to a close. The fœtor of the breath formerly considered as a strong evidence of gangrene, can be simply, and perhaps sufficiently, accounted for by the partial decomposition of the exudation, exposed as it is to the conditions most favourable to such a process, viz., warmth, air, and moisture; it seems to be most prominent in those cases where the lymph is most plentiful, and the mouth is least often cleansed by drinks or gargles. I have been informed that cases occur in which the fœtor is well marked, although the exudation may beat a minimum; even in such cases the secretions of the mouth may be the source of the odour, but we cannot deny that it might possibly depend upon pulmonary exhalation.

The mucous membrane lining the cavities of the nose, as a rule, participates in the disease; the earliest indication of this is a slight increase in the natural moisture of the part, which distils a transparent, thin, colourless fluid, the nares may be observed to be unusually red inside, the fluid soon becomes semipurulent, often offensive, and occasionally sanious; the nasal cavities have been known to present an exudation of as great consistence as that in the throat. An affection of the skin of the nose and upper lip generally accompanies the implication of the nares; this is almost always described as ulceration, but it commences, I suspect, as a true herpetic eruption, though cases seldom occur in which we can acertain this, since the vesicles are very soon ruptured by the interference of the patient, when they become directly covered by a scab formed of the dried secretion, and do ultimately become converted into

superficial ulcers, and even covered by concrete lymph. This condition results probably quite as much from the constant rubbing and picking of the nose, as from the simple transcurrence of the morbid nasal secretions to which most authors exclusively attribute it. That artificial irritation of various parts will be followed by such results, we know from the occurrence of similar ones in and upon blistered surfaces.

The conjunctivæ may be engaged, giving the eyes a "ferrety" look; but I have never met with an instance of what has been described under the name of "Diphtheritic Conjunctivitis" in ordinary diphtheritis.*

As might have been anticipated the voice is changed, and becomes what is called "nasal." Bard speaks of this "peculiar change in the tone of the voice" as being "so singular as to be almost pathognomonic" (*Op. Cit.;* p. 7); but its chief importance consists in this, that it will probably (as it always ought) lead the practitioner to inspect the air passages, and may thus be the means of detecting the nature of a case which would otherwise have been misunderstood.

The swelling of the neck comes on so early, in some cases, that it might have been described without impropriety as an initial symptom: thus, Grisolle† says, "enlargement of the ganglia precedes, but may be simultaneous with, the exudation" (tome i, p. 259); but, on the other hand, Dubourg, of Fijac, observed this swelling to occur on the sixth or seventh day, towards the close of the disease. My own experience leads me to conclude that the period of its advent is variable, but usually early. This swelling does not arise, as used to be taught, from any affection of the salivary glands, but from enlargement of the absorbents, œdema of the cervical cellular tissue, and probably from congestion of these and, perhaps, other tissues of the neck. The immobility of the head and neck, which is a consequence of this condition, gives the patient (as in other diseases where it occurs) a very odd appearance, especially when he attempts to move; and this oddness is much increased if the swelling, as sometimes happens, affect one side only of the neck.

A great increase of dysphagia often attends this enlargement, dependent partly upon the interference with action of the muscles which elevate the larynx, and partly (in some cases probably) upon pressure on the æsophagus; much pain and tenderness is often present, and the patient's distress may then be further aggravated by being compelled to maintain a sitting posture, the pain caused by the pressure of the head and neck against the pillow being unbearable. The skin may be, but is not commonly, red and inflamed. As the swelling of the neck depends upon several anatomical alterations, any of which may exist

* In discussing the real relation between diphtherite and croup I shall allude further to this form of ophthalmia.

† *Traité Elementaire et Pratique de Pathologie interne.* Par A. Grisolle, &c. Edition v. Paris: 1852. Two volumes 8vo.

separately from or conjointly with the others, it is worthy of inquiry whether the different symptoms which accompany this swelling in different cases may not really depend upon these anatomical peculiarities; for example, may not a simple enlargement of the absorbent glands occur early, without much inflammation, and consequently without increasing the pyrexia; and, on the other hand, may not that swelling which comes on late, which is attended by great pain and increases the pyrexia, be indicative of a kind of diffuse inflammation of the cellular tissue, from which the œdema of that structure might arise. The coexistence of these various morbid conditions after death (which I have ascertained) does not afford any argument against this view, which, however, I do not pretend to assert the correctness of, but mention merely for the purpose of drawing the attention of future observers to a doubtful point, the settlement of which might throw much light upon the disease, and influence both our treatment and prognosis.

The skin generally is not very hot and is often moist, and with a very hot skin there may, nevertheless, be considerable perspiration; nor is this an unfavourable symptom, provided it occur at this period of the case. The fever does not progressively increase during this stage; such as was the initial fever such is, speaking generally, the fever of this period; indeed, as before said, there may even be an abatement of it after the first onset. Bretonneau speaks of the disease remaining for several days at a standstill, until, as it appears to me, those symptoms supervene, which are indicative of complications, too often of a fatal character. There is not in favourable instances a gradual progression of the fever, such as for example we often see in typhoid or typhus, even when they run a mild course, or form what is termed in hospital language, "a pretty smart attack," yet without causing at any time a fear (except by anticipation of possible complications or turns) for the ultimate result.

During this stage small ulcerations of different parts of the skin may appear, and these may be covered with lymph (*Bard*, p. 9), as may also raw blistered surfaces, a fact alluded to by many writers. The urine presents no constant appearances, but it is most commonly described as being somewhat scanty and of a pale colour; sometimes, however, depositing lithates when cold, and these not often pink or high-coloured, but of a buff or fawn-colour, constituting the "furfuraceous" or "branny" deposit of the older writers; and these terms are as descriptive of the appearance of this kind of deposit as any with which I am acquainted. The occurrence of hæmaturia at a later stage has long been known; but it was supposed, and perhaps rightly, to indicate merely a purpuric condition of the blood, and to proceed probably from the mucous membrane of the urinary bladder. This opinion I held, in common I believe with everyone else, till an opportunity was afforded me of examining the body of one dead of diphtheritis. I then found changes in the kidney, which

will be more particularly described when we come to consider the morbid anatomy and pathology of the complaint, in consequence of which I made a practice of more minutely examining the urine during life than I had previously done. This led to the discovery that albuminuria was not unfrequently present, when there was no reason to suspect its existence from simple inspection of the water. That this differs materially from the hæmaturia above alluded to, appears from the absence of any other evidence of purpura, from the absolute absence of blood corpuscles as proved by microscopical examination, as well as by the colour of the urine which may be neither red nor smoky. There are two circumstances which may lead us to suspect this complication, now that we are aware of its possibility; namely, a diminution in the quantity of the excretion, or the sudden disappearance of the lithate of ammonia. The illomened disappearance of deposits from the urine, in somewhat similar diseases, has not escaped the observation of old writers. Thus, Fracastorius, in a chapter, "*De veré pestiferis febribus*," speaks of the urine becoming apparently normal, and free from the deposits which had previously existed, a short time before death, in such as in some other fevers, "quæ res inexpertos quosdam medicos sæpe fefellit, incipientes bene sperare ex eâ urinæ mutatione." (*Op. Cit;* p. 340.) At present, however, I can suggest no substitute for the careful examination of the urine at each visit, for there may never have been any deposit; and I am not sure that a slight increase in the *quantity* of the urine does not *sometimes* attend the earliest period of the kidney complication. It is oftentimes very difficult in children to estimate accurately the quantity of urine passed, and if diarrhœa be present, impossible; and diarrhœa, I am disposed to think, sometimes comes on at this epoch, and it is an important point for future observation to determine in what relation these two symptoms stand to each other.

I had never met with any hint, either from authors on this subject, or from my professional friends, which indicated that they had discovered or suspected the existence of this most momentous complication; that it should have been so long overlooked is perhaps best accounted for by the apparently normal condition of the urine and the absence of dropsy, which I have *never* known to be present, nor have any authors, within my knowledge alluded to dropsy as a symptom of diphtheritis. It is with great satisfaction that I am able to state that the correctness of my observation has been confirmed by many of my medical friends, since a fact of this kind depending upon the veracity or capability of one observer only is often received with much distrust. Albumen has been found in the urine of patients suffering from diphtheritis, by Dr. Evans, Messrs. Clayton, Jauncey, Moore, and Robins, and others, of this town, and also by Mr. C. P. James, of Leiston, in Suffolk; who has published* a most

* In the *Medical Times and Gazette.*

interesting account of an epidemic which occurred in that neighbourhood. An anonymous writer in the *Lancet* some little time ago intimated that he was in possession of certain facts which indicated a connexion between diphtheritis and acute desquamative nephritis, but he has not yet, as far as I know, communicated them to the profession, nor was this letter published till some time after I had made the *post mortem* examination above alluded to, the parts removed at which I exhibited to the Queen's College Medico-Chirurgical Society on the 15th of December, 1857. Several corroborative cases were observed immediately after; one, indeed, by Mr. Robins the next day. The specific gravity of such urine varies, as might have been expected; but I think it may be laid down pretty certainly that there is a diminution in the total amount of solid excreta, or, in other words, that the special functions of the kidneys are interrupted. Although this urine is often perfectly pellucid and free from deposit, yet, in some instances, we find what I certainly should have been disposed to anticipate in all, viz., tube casts and renal epithelium. The tube casts may be of three forms, so far as I have at present observed, viz.: firstly, what have been called "small waxy casts;" secondly, casts of similar size, but granular, probably from commencing disintegration; and, thirdly, ordinary epithelial casts. Besides these objects, and perhaps even more common than them, are small masses of fibrine of irregular shape, not moulded in the renal tubes; we generally find, also, epithelium from the bladder and other portions of the urinary passages. The tube casts and the glandular epithelium often contain fat, in a state of sub-division, more or less minute. Having discovered, then, the existence of albuminuria in a particular case, what do we learn from it? Is it a necessarily fatal sign? To this I am able to answer, certainly not. This is, so far, encouraging; but, on the other hand, since I have been acquainted with its existence, I have only been able to hear of one fatal case in which search had been made for it without success. We might formulate this assertion by saying, all fatal cases present albuminuria, but all cases presenting albuminuria are not fatal. One, or even several exceptional cases do not prove that fatal cases are not necessarily made so by kidney mischief; for we know that in chronic Bright's disease, the danger is by no means of necessity in proportion to the amount of albumen in the water, for in not a few instances the albuminuria is absent for a longer or shorter time before death. The danger is really proportionate to the incapability of the kidneys to discharge their function. The presence of albumen in the urine is a common physical sign of a condition of the kidneys which interferes with their functional activity. I admit that in the present disease the quantity of albumen in the urine is generally—but, I again repeat not necessarily—in direct proportion to the functional disability of the kidney, or, perhaps, even more accurately to the retention within

the body of those matters which should be excreted by the kidney; for we must not overlook the possibility of the renal offices being supplemented by other organs. This disability is to be estimated more perfectly by ascertaining the quantity of solids in the urine, from a comparison of its quantity and specific gravity; a proceeding which, as I have before said, circumstances often render difficult. The best practical test is the vital one—the effects produced upon the other functions necessary to life, as learnt from the symptoms which ensue. Proceeding in this way, we find that this complication may come on insidiously, not at once, and, indeed, sometimes not for weeks, reaching an extent which seriously affects the renal offices. Under such circumstances, all we can say of the cases is, that they seem during its continuance to be at a stand still: the throat mischief may be but limited, but it does not diminish; the vital depression may not be extreme, but it is persistent. In the only two really chronic cases that I have seen—one of which died at the end of five weeks, and the other did not begin to amend till nearly eight weeks after the first invasion—albuminuria was present, and they answered in every respect to the description which has been given by many authors of cases protracted for several weeks. It is worthy of notice that in the fatal case, which was not under my immediate observation, the albumen disappeared a day or two before death; I am not able to state whether this disappearance was coincident with any other improvement, or the reverse, in the physical condition of the urine. In the other case, the disappearance of the albumen was concomitant with an increased excretion of urinary elements, and the first indications of returning health.

When symptoms do arise contemporaneously with the kidney complication, they are those which have been universally described by writers as characteristic of this disease.

Thus, Cullen says, the "symptoms of putrid fever constantly increase." (*Op. Cit.;* vol. i, p. 205.) Bard speaks of the symptoms already described, continuing "in some for five or six days without alarming their friends;" and then, of a "stage of the disease" which was attended with a very great and sudden prostration of strength. (*Op. Cit.;* p. 7.) I have lately seen a case in which the occurrence of albuminuria was accompanied by symptoms which might have been most accurately described in the words used by Bard. (Pp. 7, 8.) "The patients, though commonly somewhat comatous from the beginning, became now much more so; yet, even when the disorder was at the worst, they retained their senses, and would give distrustful answers when spoken to; although on being left to themselves they lay for the most part in a lethargic situation, only raising up now and then to receive their drink. Great restlessness and jactation came on towards the end of the disease, the sick perpetually tossing from one side of the bed to the other, but

they were still so far comatous as to appear to be asleep immediately upon changing their situation and posture."

It is certain that these symptoms of debility and depression of the vital powers do not necessarily depend upon either the amount of throat disease or the degree of fever, for they are by no means proportionate to either of them; in one case which I saw, the throat was all but cured before any general symptoms, of importance, made their appearance. Réné Moreau speaks of "lethargy" as one of the symptoms of the Neapolitan epidemic. *(Letter on Bronchotomy, appended to Bartholinus'* account.)* Bartholinus himself speaks of "stupor."

Chomel and others speak of the rapid wasting which accompanies this disease; but I have several times observed that, even when this appeared to be the case during life, examination *(post mortem)* revealed a considerable quantity of adipose structure still remaining. The relation of this point to the absence of dropsy, I shall reserve till we come to discuss the pathology of the affection. The duration of the second stage is, as I have already stated, most uncertain; it may last for one day only, or be extended almost indefinitely. Roche mentions one case which lasted for eight months, another, on the authority of M. Girouard, of two years continuance. (*Op. Cit.;* pp. 551, 2.) It may be doubted whether such cases presented during all that time the local symptoms only, or the general ones also; but cases have certainly been seen in which both local and general phænomena remained for several weeks. Chomel says, "the fever lasts dangerous even beyond the forty-fifth day." (*Op. Cit.;* p. 41.)

During the whole of these two stages, and, indeed, up to the close of the disease, it is a most remarkable fact that, although there may be a difficulty in swallowing, from the fauces being obstructed by lymph, &c., there is, nevertheless, in the majority of cases, no soreness or pain in deglutition; in the small minority where this symptom is not absolutely wanting, it is very trifling, and much less than we could have expected in so serious a throat disease. It is worthy, too, of remark, that this peculiarity is characteristic of all the epidemics of which we have accounts, and has been noted by all writers as a matter for wonder.

According to the division which I have made, the appearance of symptoms indicating the conclusion of the disease puts a period to its second, and inaugurates its third, or final, stage. Two questions have now to be answered—at what time and in what manner does the end come? To answer these, we must discriminate in the first, no less than in the last, instance, between those terminations which are favourable and those which are fatal. Patients rarely recover, or become freed from the

* *Thomæ Bartholini Casp. fil. de Anginâ puerorum Campaniæ Siciliæque Epidemicâ exercitationes. Accedit de Laryngotomia,* Cl. v. Renati Moreau, &c., Epistola. Lutetiæ Parisiorum: 1646. Duo.

disease till after several (from five to eight) days have elapsed; though, as Fothergill observes, the symptoms of recovery may appear on the third, fourth, or fifth day; he, indeed, says that they *generally* do so, but this is going further than the experience of the present epidemic would warrant; and, as I have already stated, they may continue ill for several weeks, or even months. From the sixth to the eighth day has been considered by most authors as the critical stage of the disease; and it seems to me not unlikely that future investigation will decide this more positively in the affirmative, by showing that the protracted cases are really examples of a disease having a definite duration, being lengthened by the occurrence of a local complication. This point is very lucidly treated by Dr. Jenner in his admirable lectures upon the identity of typhoid and typhus fevers. It is most likely also that the other law concerning the relation between primary and secondary affections will be found to hold true of diphtheritis and its complications, viz., that the chance of local lesions is in direct proportion to the duration of the primary disease.

A fatal termination may happen much earlier: Roche says even in twenty-four hours. (*Op. Cit;* p. 551.) Cullen says that death often takes place on the third day, sometimes later, but mostly before the seventh day. (*Op. Cit;* vol. i, p. 205.) Statements upon this matter must be received with caution, as we have already seen the frequent latency and insidiousness of the complaint. The disappearance of the disease may take place either suddenly or progressively; the latter most commonly. The crisis, when it occurs, takes place by perspiration, or by the kidneys. Of the former, Chomel gives one instance, that of his seventh patient; but it is to be observed of critical evacuations, firstly, that they are unusual; secondly, that they are mostly but the commencement of the cure, and rarely, as elsewhere, serve to carry off the disease altogether; and, thirdly, that they may be expected when the febrile symptoms are well marked, rather than when these are insignificant.

The gradual termination is indicated by a progressive diminution of all the symptoms: the redness of the eyes and puffiness of the face disappear; the skin becomes less hot; the swelling of the neck lessens; the exudation comes off in greater or less fragments, and ceases to be reproduced; the nares look less red, and discharge less; the swelling of the fauces vanishes; the patient manifests more power, and loses the hebetude and depression which had previously been marked in his countenance; the pulse diminishes in frequency, and gains in force; the urine becomes more copious, and of a higher specific gravity, sometimes depositing lithate of ammonia, and if it had before contained albumen, this becomes less, and finally disappears; quiet sleep supplants delirious dreaming; the appetite returns;* and convalescence is established.

* Fothergill makes the curious remark, that the appetite returns sooner in this complaint than in any other with which he is acquainted.

As to a favourable, so to a fatal termination, may the case progress by gradual and stealthy descent. Under these circumstances we perceive an increased hebetude, sleepiness, almost amounting to coma. I have already quoted Bard's account of this condition. The pulse becomes feebler, and if quickened, which is not uncommon, there is no increase of power; from the dulling of its perceptions the child is often more amenable to treatment, such, at least, as does not involve much exercise of its own mental faculties, than it had previously been, and this leads us to hope, when it should only increase our apprehension. It is difficult to word-paint the phænomena of such a case, but they may be illustrated by observing that a child under such circumstances resembles a lighted taper under a bell-glass; which as the oxygen—its *materies vitæ*—is consumed, fades away and dies. It is difficult to say at what precise moment its brilliancy declines, or even when it ceases altogether, but gradually all and each of these little signs which indicate life diminish in vigour, and finally cease.

The expression used by older writers to signify this mode of death was, "that all the symptoms of malignancy, or putridity, increased." More modern writers agree that such patients die "poisoned."

The similarity of these symptoms, and also of others to be noticed presently, to those attending some cases of death from albuminuria is very striking, and I have seen more than one case in which they increased, *pari passu*, with the diminution of the renal excretion. Without prejudging the question of the relationship between scarlatina and diphtherite, which we shall have to consider hereafter, I may refer to the gigantic work of Dr. Copland* for information upon the presence of albuminuria in malignant scarlet fever—a complication of the latter disease upon which he much insists, and to which he attributes many of its phænomena. An admirable paper† by Dr. Fenger, of Copenhagen, upon the "Masked Forms of Bright's Disease," may also be consulted with much advantage.

The fatal termination may be produced in a more violent and abrupt manner by some of those complications to which I have before alluded. These, or some of them, may come on under different circumstances: first, while the patient is to all appearance progressing favourably; second, when his condition is already unfavourable, the powers of life being evidently depressed; and third, they may occur so late as to belong in reality to the article of death. They may also occur either singly, conjointly, or successively. Among the most formidable of these, are those in which the air passages are involved, and of these there are

* *A Dictionary of Practical Medicine, &c.* By James Copland, M.D., F.R.S., &c., &c. London, N.D. Art: "Scarlatina."

† It appeared originally in the *Hospitals Meddelelser*, Anden Række, Kjobenhavn, 1856, p. 39; and subsequently in the *Dublin Hospital Gazette*, September 1, 1856, p. 234; and also in *Braithwaite's Retrospect*, vol. xxxiv, July to December, 1856, p. 148.

several varieties. In the first place, the tumidity of the fauces and the quantity of false membrane may so obstruct the entrance of air into the lungs as to place the patient in imminent danger of suffocation. There is no great difficulty, as Bretonneau rightly observes, in diagnosing this condition; the stridor comes on gradually, is generally worse during sleep or when the throat is allowed to get dry, and may, by a practised ear, be detected to emanate from the fauces, and not from the larynx; the voice and cough, though peculiar and unnatural, are not croupy; an inspection of the throat will show that it is blocked up; and appropriate treatment soon relieves, or even removes, the faucial obstruction and its symptoms. The same means will also diminish the difficulty of swallowing, which attends such a state of parts.

It is not impossible that death might occur from the dislodging of one of those masses of lymph, which look, as Boerhaave* says (§ 984), like a lump of lard or bacon fat in the bottom of the throat. This might either close up the opening of the glottis or fall into the larynx, and so produce suffocation.

Fothergill speaks also (p. 221) of a copious flux of pituitous matter to the glands and other parts about the fauces, which seemed to be the cause of sudden death in the case of a girl, aged 12. He found a large quantity of viscid phlegm in the mouth after death. Huxham also insists upon the necessity of ridding the patient of this secretion. I should have mentioned sooner, perhaps, that such a secretion may be favourably critical; this Bard speaks of in the following passage: "Out of sixteen cases attended with this remarkable suffocation in breathing, seven died—five of them before the fifth day, the other two about the eighth. Of those who recovered, the disease was carried off—in one, by a plentiful salivation, which began on the sixth day; in most of the others, by an expectoration of viscid mucus." (*Op. Cit.;* p. 8.) Chomel narrates an instance of "frequent and profuse (or abundant) spitting, even so as to daub a great quantity of napkins in a few hours." (*Op. Cit.;* p. 52.) Fothergill notices this among other favourable signs. (*Op. Cit.;* p. 184.) Cortesius,† on the other hand, as a cause of death, "ad prædictarum partium (Uvulæ, Tonsillarum) inflammationem subsequebatur interdum materia quædam pituitosa a capite tam repente et inopinate descendens, ut miseri ægrotantes subito suffocarentur." (Fothergill: *Op. Cit.;* p. 223; note.)

A consideration of all these accounts, and more especially of Bard's cases, would lead us to suspect that œdema of the glottis may supervene in diphtheritis. This view is borne out by my own actual observation of the existence of submucous œdema of the palate and the adjacent

* *Commentaries upon Boerhaave's Aphorisms, &c.* By Baron Van Swieten, &c. Translated from the Latin. Edinburgh: 1776. Eighteen volumes, 8vo.

† *Joannis Baptistæ Cortesii, medici ac philosophi, in Messaniensi academia praxim ordinariam e prima sédé interpretantis Miscellaneorum Medicinalium Decades denæ.* Messanæ 1625. Fol.

parts, though I have not been fortunate enough to find such a condition of the glottis itself: the attempt to differentiate between this lesion and croup is not a fantastical refinement or a mere scientific amusement; to the success of our treatment and prognosis it is a question of the most practical pertinence.

Unquestionably great as is the importance of croup in regard to the welfare of the patient, it is unnecessary to make more than two or three remarks upon its symptomatology in connexion with diphtheritis. It as commonly happens in apparently mild, as in severe cases, early in the disorder as late. Some traces of its existence may be found by careful *post mortem* examination in most cases, even when it has been latent during life, or its symptoms confounded with those which arise from conditions previously mentioned. Its other characteristics will fall more properly under the head of morbid anatomy, as will also the mention of pulmonary apoplexy, which, as far as I have seen, betrays itself by no symptoms.

The expectoration of casts of the trachea is well known to happen not very unfrequently, but that casts of the minute bronchial tubes should be coughed up is mentioned only by Mr. David Thompson,* of Launceston, in a most valuable practical contribution to our knowledge of this disease; and I cannot but regret that it was published so lately as to deprive me of the advantage of consulting it before I had written the earlier part of this paper. His words are—"In many instances I saw numbers of minute casts expectorated from the lungs, while at the same time a stethoscopic examination gave all the signs of capillary bronchitis. A gentlemen, aged 46, died from this condition of the lungs. His throat was first affected. After a few days, the breathing became impeded, with all the ordinary symptoms of capillary bronchitis in the first stage; the throat continuing to improve. He gradually sank, constantly expectorating casts of the small tubes, precisely similar to the deposit in the trachea. * * * The deaths (thirteen) were all below fifteen years of age, and with two exceptions were all from affections of the air-passages.†

Before leaving the subject of croup, it is worthy of remark that no other phænomena or complication has so universally attended all epidemics of diphtheritis as this. To quote all the proofs of this statement would involve me in the necessity of making extracts from

* *British Medical Journal;* June 5th, 1858; p. 449.

† It may not be amiss to quote two observations of Mr. Thompson bearing upon points which I have already discussed. Firstly, with regard to albuminuria he says—"The sequelæ of the two diseases (scarlatina and diphtherite) "nearly resembled each other. Albuminous urine with casts being present in eight cases of diphtherite, and anasarca proving fatal from convulsions in one." And, secondly, of the exudation he says—"A careful microscopic examination of the white deposit showed nothing different from the usual appearances of exuded lymph." Mr. Thompson does not intimate that albuminuria *accompanied* diphtheritis—he speaks of it only as a *sequela;* still less does he attribute the danger or symptoms of the disease to such a complication.

every writer who has witnessed an outbreak of the complaint; no matter at what distance of time or space, nor in how great a degree the other symptoms of the disease may have been dissimilar. In England,* America,† France,‡ Italy,§ and Spain,‖ specimens of it have been equally common, and unfortunately no less fatal than universal.

Another symptom connected with the respiration, though possibly having a more remote origin ¶ is mentioned by Dr. Jas. Hamilton, jun.,** as occurring in a disease allied to it, if not identical with the one under consideration. He says—"Very unexpectedly slowness of breathing, without either difficulty or wheezing, takes place, with excessive and sudden sinking of the living powers; and it generally happens that, within a day or two from this change, the fatal event takes place. The breathing at first falls to eighteen respirations; then to sixteen; to twelve; and, finally, to ten or eight." The author "considers the slow breathing to be a sure symptom of the fatal termination." Of this peculiar symptom I have no personal knowledge, nor has its occurrence in the present epidemic been reported to me.

Convulsions, though not of frequent occurrence, are, as far as my information goes, invariably fatal. They are most likely to be met with in infants, and in cases where cerebral symptoms have been previously present in a marked degree.

Two other symptoms often precede death in whatever manner it may come, viz., diarrhœa with or without tenesmus, and frequent micturition. The fatal import of diarrhœa has been noticed by many writers, most emphatically perhaps by Fothergill. It may accompany either of the three stages of the disease: it is of least consequence during the first stage, of worse omen during the second, and one of the most infelicitous prognostics when presenting itself about the time that we are looking for the disease to terminate. I apprehend that it is not only an evidence, but also a cause of the interruption of certain functions necessary to life; and if this view be correct, we may cease to wonder that its access should be so much dreaded.

Frequency of micturition is often present, especially during the last few hours of life, even when the quantity of urine is very small; and it affords us another example of the peculiarity which Bard has noted as attending the coma of this disease, namely, that although apparently profoundly comatose, children may be often temporarily aroused, soon to

* Huxham, Johnstone, and nearly all describers of the present epidemic.

† Bard and Douglas.

‡ Chomel, Bretonneau, and many others.

§ Cortesius, Alaymus, Bartholinus, &c.

‖ Mercatus and Heredia.

¶ See Dr. Graves' remarks on "Cerebral Respiration," at page 154, vol. i, of *Clinical Lectures on the Practice of Medicine.* By Robert J. Graves, M.D., M.R.I.A., &c., &c. Edited by J. Moore Neligan, M.D., &c. Dublin: 1848. 8vo.

** Quoted in the *Medico-Chirurgical Review*, &c. Edited by James Johnson, M.D., &c. First volume for 1827, p. 223.

relapse when undisturbed. This frequency of micturition is often a source of fallacy to us when trying to discover whether any alteration in the quantity of the urine took place during the last few hours of life. Nurses will often say that there was a considerable increase; for, say they, "He was up to make water every five minutes all through the night." Children are often reported to have arisen for this purpose shortly before death; nay, I have known several to die whilst on the nightstool for this purpose. Purpura is a very common fore-runner of death: it often amounts merely to a few petechiæ on the abdomen or insteps, which, unless carefully searched for, may readily escape notice; but not so the profuse and frightful hæmorrhages which are described in the histories of all epidemics, and have been by no means unfrequent during this present one in Birmingham. Hæmorrhages may take place from any of the mucous membranes, and in a few moments the patient may be dead, or survive only to sink away in the course of a few hours.

It is worthy of remark, that no cases are reported in which this purpura has fallen on the serous membranes, nor has any instance come to my knowledge in which *post mortem* examination has discovered any abnormality in any of the serous membranes.

I have seen no case of purpura in which the kidney affection had not previously shown itself.

It must not be supposed, because these symptoms have been separately described here, that we meet them equally uncombined in practice: the greater part of them, or at all events examples of each kind, may and do appear in the course of a single case; thus we see a patient depressed by the disease and semi-comatose, afterwards suffering from a copious hæmorrhage, then croup, and finally convulsions.

The pathology and treatment of this complaint I shall endeavour to elucidate at some future period. In the meantime, it cannot fail to strike the most careless reader or observer that a disease attacking so many organs either directly or indirectly, and in which the primary local mischief is so disproportionate to the subsequent danger must be something more than a simple throat disease, although it may *ostensibly* commence in that anatomical region; and that we shall most conduce to a successful plan of treatment by a comprehensive survey of its phænomena and a more accurate perception of its pathology.

THE END.

London, New Burlington Street,
January, 1859.

MR. CHURCHILL'S

Publications,

IN

MEDICINE, SURGERY,

AND

SCIENCE.

"It would be unjust to conclude this notice without saying a few words in favour of Mr. Churchill, from whom the profession is receiving, it may be truly said, the most beautiful series of Illustrated Medical Works which has ever been published."—*Lancet.*

"All the publications of Mr. Churchill are prepared with so much taste and neatness, that it is superfluous to speak of them in terms of commendation."—*Edinburgh Medical and Surgical Journal.*

"No one is more distinguished for the elegance and *recherché* style of his publications than Mr. Churchill."—*Provincial Medical Journal.*

"Mr. Churchill's publications are very handsomely got up: the engravings are remarkably well executed."—*Dublin Medical Press.*

"The typography, illustrations, and getting up are, in all Mr. Churchill's publications, most beautiful."—*Monthly Journal of Medical Science.*

"Mr. Churchill's illustrated works are among the best that emanate from the Medical Press."—*Medical Times.*

"We have before called the attention of both students and practitioners to the great advantage which Mr. Churchill has conferred on the profession, in the issue, at such a moderate cost, of works so highly creditable in point of artistic execution and scientific merit."—*Dublin Quarterly Journal.*

A CLASSIFIED INDEX

TO

MR. CHURCHILL'S CATALOGUE.

ANATOMY.

CHEMISTRY.

CHOLERA.

CLIMATE.

DEFORMITIES, &c.

DENTISTRY.

DISEASES of the URINARY and GENERATIVE ORGANS, and SYPHILIS.

DISEASES OF WOMEN AND CHILDREN.

HYGIENE.

MATERIA MEDICA and PHARMACY.

MEDICINE.

MEDICINE—*continued.*

MICROSCOPE.

MISCELLANEOUS.

NERVOUS DISEASES AND INDIGESTION.

OBSTETRICS.

OPHTHALMOLOGY.

PHYSIOLOGY.

PSYCHOLOGY.

PULMONARY and CHEST DISEASES, &c.

SCIENCE.

SURGERY.

DR. ACLAND.

MEMOIR ON THE CHOLERA AT OXFORD IN THE YEAR 1854; with Considerations suggested by the Epidemic. 4to. cloth, with Maps, 12*s*.

MR. ACTON, M.R.C.S.

I.

THE FUNCTIONS AND DISORDERS OF THE REPRODUCTIVE ORGANS IN YOUTH, IN ADULT AGE, AND IN ADVANCED LIFE. Considered in their Physiological, Social, and Psychological Relations. Second Edition. 8vo. cloth, 7*s*.

II.

PROSTITUTION: Considered in its Moral, Social, and Sanitary Bearings, with a View to its Amelioration and Regulation. 8vo. cloth, 10*s*. 6*d*.

DR. WILLIAM ADDISON, F.R.S.

I.

CELL THERAPEUTICS. 8vo. cloth, 4*s*.

II.

ON HEALTHY AND DISEASED STRUCTURE, AND THE TRUE PRINCIPLES OF TREATMENT FOR THE CURE OF DISEASE, ESPECIALLY CONSUMPTION AND SCROFULA, founded on MICROSCOPICAL ANALYSIS. 8vo. cloth, 12*s*.

DR. ALEXANDER, F.R.C.S. BY EXAM.

RHEUMATISM: its Nature, Causes, and Cure.
GOUT: its Nature, Causes, Cure, and Prevention.
Post 8vo. cloth, 7*s*. 6*d*.

THE ANATOMICAL REMEMBRANCER; OR, COMPLETE POCKET ANATOMIST. Fifth Edition, carefully Revised. 32mo. cloth, 3*s*. 6*d*.

DR. ALEXANDER ARMSTRONG, R.N.

OBSERVATIONS ON NAVAL HYGIENE AND SCURVY. More particularly as the latter appeared during a Polar Voyage. 8vo. cloth, 5*s*.

MR. F. A. ABEL, F.C.S., & MR. C. L. BLOXAM.

HANDBOOK OF CHEMISTRY: THEORETICAL, PRACTICAL, AND TECHNICAL. Second Edition. 8vo. cloth, 15*s*.

DR. ADAMS, A.M.

A TREATISE ON RHEUMATIC GOUT; OR, CHRONIC RHEUMATIC ARTHRITIS. 8vo. cloth, with a Quarto Atlas of Plates, 21*s*.

DR. ADDISON.

ON THE CONSTITUTIONAL AND LOCAL EFFECTS OF DISEASE OF THE SUPRA-RENAL CAPSULES. 4to. cloth. Coloured Plates, 21*s.*

MR. ANDERSON, F.R.C.S.

THE CAUSES, SYMPTOMS, & TREATMENT OF ECCENTRIC NERVOUS AFFECTIONS. 8vo. cloth, 5*s.*

MR. T. J. ASHTON.

ON THE DISEASES, INJURIES, AND MALFORMATIONS OF THE RECTUM AND ANUS. Second Edition. 8vo. cloth, 8*s.*

MR. ATKINSON.

MEDICAL BIBLIOGRAPHY. Vol. I. Royal 8vo. 16*s.*

DR. WILLIAM BALY, F.R.S., & DR. WILLIAM W. GULL.

REPORTS ON EPIDEMIC CHOLERA; its Cause and Mode of Diffusion, Morbid Anatomy, Pathology and Treatment. Drawn up at the desire of the Cholera Committee of the Royal College of Physicians. With Maps, 8vo. cloth, 16*s.*

DR. BARLOW.

A MANUAL OF THE PRACTICE OF MEDICINE. Fcap. 8vo. cloth, 12*s.* 6*d.*

DR. BARNES.

THE PHYSIOLOGY AND TREATMENT OF PLACENTA PRÆVIA; being the Lettsomian Lectures on Midwifery for 1857. Post 8vo. cloth, 6*s.*

MR. BATEMAN.

MAGNACOPIA: A Practical Library of Profitable Knowledge, communicating the general Minutiæ of Chemical and Pharmaceutic Routine, together with the generality of Secret Forms of Preparations; including Concentrated Solutions of Camphor and Copaiba in Water, Mineral Succedaneum, Marmoratum, Silicia, Terro-Metallicum, Pharmaceutic Condensions, Prismatic Crystallization, Crystallized Aromatic Salt of Vinegar, Spa Waters; newly-invented Writing Fluids; Etching on Steel or Iron; with an extensive Variety of *et cætera*. Third Edition. 18mo. 6*s.*

DR. BASCOME.

A HISTORY OF EPIDEMIC PESTILENCES, FROM THE EARLIEST AGES. 8vo. cloth, 8*s.*

MR. LIONEL J. BEALE, M.R.C.S.

I.

THE LAWS OF HEALTH IN THEIR RELATIONS TO MIND AND BODY. A Series of Letters from an Old Practitioner to a Patient. Post 8vo. cloth, 7*s.* 6*d.*

II.

HEALTH AND DISEASE, IN CONNECTION WITH THE GENERAL PRINCIPLES OF HYGIENE. Fcap. 8vo., 2*s.* 6*d.*

DR. BEALE, F.R.S.

I.

HOW TO WORK WITH THE MICROSCOPE. Crown 8vo. cloth, 5*s*.

II.

THE MICROSCOPE, IN ITS APPLICATION TO PRACTICAL MEDICINE. With a Coloured Plate, and 270 Woodcuts. Second Edition. 8vo. cloth, 14*s*.

III.

ON THE ANATOMY OF THE LIVER. Illustrated with 66 Photographs of the Author's Drawings. 8vo. cloth, 6*s*. 6*d*.

IV.

ILLUSTRATIONS OF THE SALTS OF URINE, URINARY DEPOSITS, and CALCULI. 37 Plates, containing upwards of 170 Figures copied from Nature, with descriptive Letterpress. 8vo. cloth, 9*s*. 6*d*.

DR. BARCLAY.

A MANUAL OF MEDICAL DIAGNOSIS. Fcap. 8vo. cloth, 8*s*. 6*d*.

DR. BASHAM.

ON DROPSY, CONNECTED WITH DISEASE OF THE KIDNEYS (MORBUS BRIGHTII), and on some other Diseases of those Organs, associated with Albuminous and Purulent Urine. Illustrated by numerous Drawings from the Microscope. 8vo. cloth, 9*s*.

MR. BEASLEY.

I.

THE BOOK OF PRESCRIPTIONS; containing 3000 Prescriptions. Collected from the Practice of the most eminent Physicians and Surgeons, English and Foreign. Second Edition. 24mo. cloth, 6*s*.

II.

THE DRUGGIST'S GENERAL RECEIPT-BOOK; comprising a copious Veterinary Formulary and Table of Veterinary Materia Medica; Patent and Proprietary Medicines, Druggists' Nostrums, &c.; Perfumery, Skin Cosmetics, Hair Cosmetics, and Teeth Cosmetics; Beverages, Dietetic Articles, and Condiments; Trade Chemicals, Miscellaneous Preparations and Compounds used in the Arts, &c.; with useful Memoranda and Tables. Fourth Edition. 24mo. cloth, 6*s*.

III.

THE POCKET FORMULARY AND SYNOPSIS OF THE BRITISH AND FOREIGN PHARMACOPŒIAS; comprising standard and approved Formulæ for the Preparations and Compounds employed in Medical Practice. Sixth Edition, corrected and enlarged. 24mo. cloth, 6*s*.

DR. HENRY BENNET.

I.

NUTRITION IN HEALTH AND DISEASE. Post 8vo. cloth, 5*s*.

II.

A PRACTICAL TREATISE ON INFLAMMATION AND OTHER DISEASES OF THE UTERUS. Third Edition, revised, with Additions. 8vo. cloth, 12*s*. 6*d*.

III.

A REVIEW OF THE PRESENT STATE OF UTERINE PATHOLOGY. 8vo. cloth, 4*s*.

DR. BILLING, F.R.S.

I.

ON DISEASES OF THE LUNGS AND HEART. 8vo. cloth, 6*s*.

II.

FIRST PRINCIPLES OF MEDICINE. Fifth Edition, Revised and Improved. 8vo. 10*s*. 6*d*.

DR. O'B. BELLINGHAM.

ON ANEURISM, AND ITS TREATMENT BY COMPRESSION. 12mo. cloth, 4*s*.

MR. HENRY HEATHER BIGG.

I.

THE MECHANICAL APPLIANCES NECESSARY FOR THE TREATMENT OF DEFORMITIES. Post 8vo. cloth, 4*s*.

II.

ARTIFICIAL LIMBS; THEIR CONSTRUCTION AND APPLICATION. With Engravings on Wood. 8vo. cloth, 3*s*.

MR. P. HINCKES BIRD, F.R.C.S.

PRACTICAL TREATISE ON THE DISEASES OF CHILDREN AND INFANTS AT THE BREAST. Translated from the French of M. Bouchut, with Notes and Additions. 8vo. cloth. 20*s*.

DR. GOLDING BIRD, F.R.S.

I.

URINARY DEPOSITS; THEIR DIAGNOSIS, PATHOLOGY, AND THERAPEUTICAL INDICATIONS. With Engravings on Wood. Fifth Edition. Post 8vo. cloth, 10*s*. 6*d*.

II.

ELEMENTS OF NATURAL PHILOSOPHY; being an Experimental Introduction to the Study of the Physical Sciences. Illustrated with numerous Engravings on Wood. Fourth Edition. By Golding Bird, M.D., F.R.S., and Charles Brooke, M.B. Cantab., F.R.S. Fcap. 8vo. cloth, 12*s*. 6*d*.

MR. JAMES BIRD.

VEGETABLE CHARCOAL: its MEDICINAL and ECONOMIC PROPERTIES; with Practical Remarks on its Use in Chronic Affections of the Stomach and Bowels. Second Edition, 8vo. cloth, 3*s*. 6*d*.

MR. BISHOP, F.R.S.

I.

ON DEFORMITIES OF THE HUMAN BODY, their Pathology and Treatment. With Engravings on Wood. 8vo. cloth, 10*s*.

II.

ON ARTICULATE SOUNDS, AND ON THE CAUSES AND CURE OF IMPEDIMENTS OF SPEECH. 8vo. cloth, 4*s*.

III.

LETTSOMIAN LECTURES ON THE PHYSICAL CONSTITUTION, DISEASES AND FRACTURES OF BONES. Post 8vo., 2*s*. 6*d*.

DR. BLAKISTON, F.R.S.

PRACTICAL OBSERVATIONS ON CERTAIN DISEASES OF THE CHEST; and on the Principles of Auscultation. 8vo. cloth, 12*s*.

DR. JOHN W. F. BLUNDELL.

MEDICINA MECHANICA; or, the Theory and Practice of Active and Passive Exercises and Manipulations in the Cure of Chronic Disease. Post 8vo. cloth, 6s.

MR. WALTER BLUNDELL.

PAINLESS TOOTH-EXTRACTION WITHOUT CHLOROFORM; with Observations on Local Anæsthesia by Congelation in General Surgery. Second Edition, 2s. 6d. cloth. Illustrated on Wood and Stone.

MR. JOHN E. BOWMAN.

I.

PRACTICAL CHEMISTRY, including Analysis. With numerous Illustrations on Wood. Third Edition. Foolscap 8vo. cloth, 6s. 6d.

II.

MEDICAL CHEMISTRY; with Illustrations on Wood. Third Edition. Fcap. 8vo. cloth, 6s. 6d.

DR. BRINTON.

THE SYMPTOMS, PATHOLOGY, AND TREATMENT OF ULCER OF THE STOMACH. Post 8vo. cloth, 5s.

DR. JAMES BRIGHT.

ON DISEASES OF THE CHEST AND AIR PASSAGES; with a Review of the several Climates recommended in these Affections. Second Edition. Post 8vo. cloth, 7s. 6d.

MR. ISAAC BAKER BROWN, F.R.C.S.

I.

ON SOME DISEASES OF WOMEN ADMITTING OF SURGICAL TREATMENT. With Plates, 8vo. cloth, 10s. 6d.

II.

ON SCARLATINA: its Nature and Treatment. Second Edition. Fcap. 8vo. cloth, 3s.

MR. BERNARD E. BRODHURST.

I.

ON LATERAL CURVATURE OF THE SPINE: its Pathology and Treatment. Post 8vo. cloth, with Plates, 3s.

II.

ON THE NATURE AND TREATMENT OF CLUBFOOT AND ANALOGOUS DISTORTIONS involving the TIBIO-TARSAL ARTICULATION. With Engravings on Wood. 8vo. cloth, 4s. 6d.

DR. JOHN CHARLES BUCKNILL, & DR. DANIEL H. TUKE.

A MANUAL OF PSYCHOLOGICAL MEDICINE: containing the History, Nosology, Description, Statistics, Diagnosis, Pathology, and Treatment of Insanity. 8vo. cloth, 15s.

DR. BUDD, F.R.S.

I.

ON DISEASES OF THE LIVER.

Illustrated with Coloured Plates and Engravings on Wood. Third Edition. 8vo. cloth, 16s.

II.

ON THE ORGANIC DISEASES AND FUNCTIONAL DISORDERS OF THE STOMACH. 8vo. cloth, 9s.

DR. BURGESS.

THE MEDICAL AND LEGAL RELATIONS OF MADNESS; showing a Cellular Theory of Mind, and of Nerve Force, and also of Vegetative Vital Force. 8vo. cloth, 7*s*.

DR. BURNETT.

I.

THE PHILOSOPHY OF SPIRITS IN RELATION TO MATTER. 8vo. cloth, 9*s*.

II.

INSANITY TESTED BY SCIENCE. 8vo. cloth, 5*s*.

DR. BRYCE.

ENGLAND AND FRANCE BEFORE SEBASTOPOL, looked at from a Medical Point of View. 8vo. cloth, 6*s*.

DR. JOHN M. CAMPLIN, F.L.S.

ON DIABETES, AND ITS SUCCESSFUL TREATMENT. Fcap. 8vo. cloth, 3*s*.

MR. ROBERT B. CARTER, M.R.C.S.

I.

ON THE INFLUENCE OF EDUCATION AND TRAINING IN PREVENTING DISEASES OF THE NERVOUS SYSTEM. Fcap. 8vo., 6*s*.

II.

THE PATHOLOGY AND TREATMENT OF HYSTERIA. Post 8vo. cloth, 4*s*. 6*d*.

DR. CARPENTER, F.R.S.

I.

PRINCIPLES OF HUMAN PHYSIOLOGY. With numerous Illustrations on Steel and Wood. Fifth Edition. 8vo. cloth, 26*s*.

II.

PRINCIPLES OF COMPARATIVE PHYSIOLOGY. Illustrated with 300 Engravings on Wood. Fourth Edition. 8vo. cloth, 24*s*.

III.

A MANUAL OF PHYSIOLOGY. With numerous Illustrations on Steel and Wood. Third Edition. Fcap. 8vo. cloth, 12*s*. 6*d*.

IV.

THE MICROSCOPE AND ITS REVELATIONS. With numerous Engravings on Wood. Second Edition. Fcap. 8vo. cloth, 12*s*. 6*d*.

MR. CHARLES CHALMERS.

ELECTRO-CHEMISTRY, with Positive Results; and Notes for Inquiry on the Sciences of Geology and Astronomy: with a Tract of Miscellanies. 8vo. cloth, 3*s*. 6*d*.

DR. CHAMBERS.

DIGESTION AND ITS DERANGEMENTS. Post 8vo. cloth, 10*s*. 6*d*.

DR. G. C. CHILD.

ON INDIGESTION, AND CERTAIN BILIOUS DISORDERS OFTEN CONJOINED WITH IT. Second Edition. 8vo. cloth, 6*s*.

MR. H. T. CHAPMAN, F.R.C.S.

I.

THE TREATMENT OF OBSTINATE ULCERS AND CUTANEOUS ERUPTIONS OF THE LEG WITHOUT CONFINEMENT. Second Edition. Post 8vo. cloth, 3*s.* 6*d.*

II.

VARICOSE VEINS: their Nature, Consequences, and Treatment, Palliative and Curative. Post 8vo. cloth, 3*s.* 6*d.*

MR. J. PATERSON CLARK, M.A.

THE ODONTALGIST; OR, HOW TO PRESERVE THE TEETH, CURE TOOTHACHE, AND REGULATE DENTITION FROM INFANCY TO AGE. With plates. Post 8vo. cloth, 5*s.*

DR. CONOLLY.

THE CONSTRUCTION AND GOVERNMENT OF LUNATIC ASYLUMS AND HOSPITALS FOR THE INSANE. With Plans. Post 8vo. cloth, 6*s.*

LEWIS CORNARO.

SURE METHODS OF ATTAINING A LONG AND HEALTHFUL LIFE. Thirty-eighth Edition. 18mo., 1*s.*

MR. COOLEY.

COMPREHENSIVE SUPPLEMENT TO THE PHARMACOPŒIAS.

THE CYCLOPÆDIA OF PRACTICAL RECEIPTS, AND COLLATERAL INFORMATION IN THE ARTS, PROFESSIONS, MANUFACTURES, AND TRADES, INCLUDING MEDICINE, PHARMACY, AND DOMESTIC ECONOMY; designed as a Compendious Book of Reference for the Manufacturer, Tradesman, Amateur, and Heads of Families. Third and greatly enlarged Edition, 8vo. cloth, 26*s.*

MR. BRANSBY B. COOPER, F.R.S.

LECTURES ON THE PRINCIPLES AND PRACTICE OF SURGERY. 8vo. cloth, 21*s.*

MR. W. WHITE COOPER.

ON NEAR SIGHT, AGED SIGHT, IMPAIRED VISION, AND THE MEANS OF ASSISTING SIGHT. With 31 Illustrations on Wood. Second Edition. Fcap. 8vo. cloth, 7*s.* 6*d.*

MR. COOPER.

A DICTIONARY OF PRACTICAL SURGERY; comprehending all the most interesting Improvements, from the Earliest Times down to the Present Period. Seventh Edition. One very thick volume, 8vo., 1*l.* 10*s.*

MR. HOLMES COOTE, F.R.C.S.

A REPORT ON SOME IMPORTANT POINTS IN THE TREATMENT OF SYPHILIS. 8vo. cloth, 5*s.*

SIR ASTLEY COOPER, BART., F.R.S.

ON THE STRUCTURE AND DISEASES OF THE TESTIS.

Illustrated with 24 highly finished Coloured Plates. Second Edition. Royal 4to.

Reduced from £3. 3*s*. *to* £1. 10*s*.

DR. COTTLE.

A MANUAL OF HUMAN PHYSIOLOGY FOR STUDENTS;

being a Condensation of the Subject, a Conservation of the Matter, and a Record of Facts and Principles up to the present Day. Fcap. 8vo., 5*s*.

DR. COTTON.

I.

ON CONSUMPTION: Its Nature, Symptoms, and Treatment.

To which Essay was awarded the Fothergillian Gold Medal of the Medical Society of London. Second Edition. 8vo. cloth, 8*s*.

II.

PHTHISIS AND THE STETHOSCOPE: a concise Practical Guide

to the Physical Diagnosis of Consumption. Foolscap 8vo. cloth, 3*s*. 6*d*.

MR. COULSON.

I.

ON DISEASES OF THE BLADDER AND PROSTATE GLAND.

The Fifth Edition, revised and enlarged. 8vo. cloth, 10*s*. 6*d*.

II.

ON LITHOTRITY AND LITHOTOMY; with Engravings on Wood.

8vo. cloth, 8*s*.

III.

ON DISEASES OF THE JOINTS. 8vo. *In the Press.*

MR. CURLING, F.R.S.

I.

OBSERVATIONS ON DISEASES OF THE RECTUM. Second

Edition. 8vo. cloth, 5*s*.

II.

A PRACTICAL TREATISE ON DISEASES OF THE TESTIS,

SPERMATIC CORD, AND SCROTUM. Second Edition, with Additions. 8vo. cloth, 14*s*.

MR. JOHN DALRYMPLE, F.R.S., F.R.C.S.

PATHOLOGY OF THE HUMAN EYE. Complete in Nine Fasciculi:

imperial 4to., 20*s*. each; half-bound morocco, gilt tops, 9*l*. 15*s*.

DR. DAVEY.

I.

THE GANGLIONIC NERVOUS SYSTEM: its Structure, Functions,

and Diseases. 8vo. cloth, 9*s*.

II.

ON THE NATURE AND PROXIMATE CAUSE OF IN-

SANITY. Post 8vo. cloth, 3*s*.

DR. HERBERT DAVIES.

ON THE PHYSICAL DIAGNOSIS OF DISEASES OF THE

LUNGS AND HEART. Second Edition. Post 8vo. cloth, 8*s*.

DR. HALL DAVIS.

ILLUSTRATIONS OF DIFFICULT PARTURITION. Post 8vo. cloth, 6*s.* 6*d.*

DR. JOHN DAVY, F.R.S.

FRAGMENTARY REMAINS, LITERARY AND SCIENTIFIC, of SIR HUMPHREY DAVY, Bart., LL.D., late President of the Royal Society; with a Sketch of his Life, and Selections from his Correspondence. 8vo. cloth, 10*s.* 6*d.*

MR. DIXON.

A GUIDE TO THE PRACTICAL STUDY OF DISEASES OF THE EYE. Post 8vo. cloth, 8*s.* 6*d.*

DR. DOBELL.

DEMONSTRATIONS OF DISEASES IN THE CHEST, AND THEIR PHYSICAL DIAGNOSIS. Illustrated with Coloured Plates. 8vo. cloth, 12*s.* 6*d.*

DR. TOOGOOD DOWNING.

NEURALGIA: its various Forms, Pathology, and Treatment. THE JACKSONIAN PRIZE ESSAY FOR 1850. 8vo. cloth, 10*s.* 6*d.*

DR. DRUITT, F.R.C.S.

THE SURGEON'S VADE-MECUM; with numerous Engravings on Wood. Seventh Edition. Foolscap 8vo. cloth 12*s.* 6*d.*

MR. DUNN, F.R.C.S.

AN ESSAY ON PHYSIOLOGICAL PSYCHOLOGY. 8vo. cloth, 4*s.*

DR. JOHN C. EGAN.

SYPHILITIC DISEASES: THEIR PATHOLOGY, DIAGNOSIS, AND TREATMENT: including Experimental Researches on Inoculation, as a Differential Agent in Testing the Character of these Affections. 8vo. cloth, 9*s.*

SIR JAMES EYRE, M.D.

I.

THE STOMACH AND ITS DIFFICULTIES. Fourth Edition. Fcap. 8vo. cloth, 2*s.* 6*d.*

II.

PRACTICAL REMARKS ON SOME EXHAUSTING DISEASES. Second Edition. Post 8vo. cloth, 4*s.* 6*d.*

DR. FENWICK.

ON SCROFULA AND CONSUMPTION. Clergyman's Sore Throat, Catarrh, Croup, Bronchitis, Asthma. Fcap. 8vo., 2*s.* 6*d.*

MR. FERGUSSON, F.R.S.

A SYSTEM OF PRACTICAL SURGERY; with numerous Illustrations on Wood. Fourth Edition. Fcap. 8vo. cloth, 12*s.* 6*d.*

SIR JOHN FORBES, M.D., D.C.L. (OXON.), F.R.S.

NATURE AND ART IN THE CURE OF DISEASE. Second Edition. Post 8vo. cloth, 6*s*.

DR. D. J. T. FRANCIS.

CHANGE OF CLIMATE; considered as a Remedy in Dyspeptic, Pulmonary, and other Chronic Affections; with an Account of the most Eligible Places of Residence for Invalids in Spain, Portugal, Algeria, &c., at different Seasons of the Year; and an Appendix on the Mineral Springs of the Pyrenees, Vichy, and Aix les Bains. Post 8vo. cloth, 8*s*. 6*d*.

C. REMIGIUS FRESENIUS.

ELEMENTARY INSTRUCTION IN CHEMICAL ANALYSIS, AS PRACTISED IN THE LABORATORY OF GIESSEN. Edited by LLOYD BULLOCK, F.C.S.

QUALITATIVE. Fourth Edition. 8vo. cloth, 9*s*.

QUANTITATIVE. Second Edition. 8vo. cloth, 15*s*.

MR. FOWNES, PH.D., F.R.S.

I.

A MANUAL OF CHEMISTRY; with numerous Illustrations on Wood. Seventh Edition. Fcap. 8vo. cloth, 12*s*. 6*d*.

Edited by H. BENCE JONES, M.D., F.R.S., and A. W. HOFMANN, PH.D., F.R.S.

II.

CHEMISTRY, AS EXEMPLIFYING THE WISDOM AND BENEFICENCE OF GOD. Second Edition. Fcap. 8vo. cloth, 4*s*. 6*d*.

III.

INTRODUCTION TO QUALITATIVE ANALYSIS. Post 8vo. cloth, 2*s*.

IV.

CHEMICAL TABLES. Folio, price 2*s*. 6*d*.

DR. FULLER.

ON RHEUMATISM, RHEUMATIC GOUT, AND SCIATICA: their Pathology, Symptoms, and Treatment. Second Edition. 8vo. cloth, 12*s*. 6*d*.

DR. GAIRDNER.

ON GOUT; its History, its Causes, and its Cure. Third Edition. Post 8vo. cloth, 8*s*. 6*d*.

MR. GALLOWAY.

I.

THE FIRST STEP IN CHEMISTRY. Second Edition. Fcap. 8vo. cloth, 5*s*.

II.

A MANUAL OF QUALITATIVE ANALYSIS. Second Edition. Post 8vo. cloth, 4*s*. 6*d*.

III.

CHEMICAL DIAGRAMS. On Four large Sheets, for School and Lecture Rooms. 5*s*. 6*d*. the Set.

MR. ROBERT GARNER, F.L.S.

EUTHERAPEIA; or, AN EXAMINATION OF THE PRINCIPLES OF MEDICAL SCIENCE, including Researches on the Nervous System. Illustrated with 9 Engravings on Copper, and Engravings on Wood. 8vo. cloth, 8*s*.

DR. GRANVILLE, F.R.S.

ON SUDDEN DEATH. Post 8vo., 2*s*. 6*d*.

MR. GRAY, M.R.C.S.

PRESERVATION OF THE TEETH indispensable to Comfort and Appearance, Health, and Longevity. 18mo. cloth, 3*s*.

MR. GRIFFITHS.

CHEMISTRY OF THE FOUR SEASONS—Spring, Summer, Autumn, Winter. Illustrated with Engravings on Wood. Second Edition. Foolscap 8vo. cloth, 7*s*. 6*d*.

DR. GULLY.

I.

THE WATER CURE IN CHRONIC DISEASE: an Exposition of the Causes, Progress, and Terminations of various Chronic Diseases of the Viscera, Nervous System, and Limbs, and of their Treatment by Water and other Hygienic Means. Fifth Edition. Foolscap 8vo. sewed, 2*s*. 6*d*.

II.

THE SIMPLE TREATMENT OF DISEASE; deduced from the Methods of Expectancy and Revulsion. 18mo. cloth, 4*s*.

DR. GUY.

HOOPER'S PHYSICIAN'S VADE-MECUM; OR, MANUAL OF THE PRINCIPLES AND PRACTICE OF PHYSIC. New Edition, considerably enlarged, and rewritten. Foolscap 8vo. cloth, 12*s*. 6*d*.

GUY'S HOSPITAL REPORTS. Third Series. Vols. I. to IV., 8vo., 7*s*. 6*d*. each.

DR. HABERSHON.

OBSERVATIONS ON DISEASES OF THE ALIMENTARY CANAL, ŒSOPHAGUS, STOMACH, CÆCUM, and INTESTINES. 8vo. cloth, 10*s*. 6*d*.

MR. HARRISON, F.R.C.S.

THE PATHOLOGY AND TREATMENT OF STRICTURE OF THE URETHRA. Second Edition. 8vo. cloth, 5*s*.

DR. MARSHALL HALL, F.R.S.

I.

PRONE AND POSTURAL RESPIRATION IN DROWNING AND OTHER FORMS OF APNŒA OR SUSPENDED RESPIRATION. Post 8vo. cloth. 5*s*.

II.

PRACTICAL OBSERVATIONS AND SUGGESTIONS IN MEDICINE. Second Series. Post 8vo. cloth, 8*s*. 6*d*.

DR. C. RADCLYFFE HALL.

TORQUAY IN ITS MEDICAL ASPECT AS A RESORT FOR PULMONARY INVALIDS. Post 8vo. cloth, 5*s*.

MR. HARDWICH.

A MANUAL OF PHOTOGRAPHIC CHEMISTRY. Fourth Edition. Foolscap 8vo. cloth, 6*s*. 6*d*.

MR. HARE, M.R.C.S.

PRACTICAL OBSERVATIONS ON THE PREVENTION, CAUSES, AND TREATMENT OF CURVATURES OF THE SPINE; with Engravings. Third Edition. 8vo. cloth, 6*s*.

MR. JAMES B. HARRISON, F.R.C.S.

ON THE CONTAMINATION OF WATER BY THE POISON OF LEAD, and its Effects on the Human Body. Foolscap 8vo. cloth, 3*s*. 6*d*.

DR. HARTWIG.

I.

ON SEA BATHING AND SEA AIR. Fcap. 8vo., 2*s*. 6*d*.

II.

ON THE PHYSICAL EDUCATION OF CHILDREN. Fcap. 8vo., 2*s*. 6*d*.

DR. A. H. HASSALL.

I.

THE MICROSCOPIC ANATOMY OF THE HUMAN BODY, IN HEALTH AND DISEASE. Illustrated with Several Hundred Drawings in Colour. Two vols. 8vo. cloth, £1. 10*s*.

II.

THE URINE, IN HEALTH AND DISEASE; or, a Simple Explanation of the Physical Properties, Composition, and Uses of the Urine, of the Functions of the Kidneys, and of the Treatment of Urinary Disorders. With Twenty-four Engravings. Post 8vo. cloth, 5*s*.

MR. ALFRED HAVILAND, M.R.C.S.

CLIMATE, WEATHER, AND DISEASE; being a Sketch of the Opinions of the most celebrated Ancient and Modern Writers with regard to the Influence of Climate and Weather in producing Disease. With Four coloured Engravings. 8vo. cloth, 7*s*.

MR. WILLIAM HAYCOCK, M.R.C.V.S.

A TREATISE ON THE PRINCIPLES AND PRACTICE OF VETERINARY MEDICINE AND SURGERY. 8vo. boards, 6*s.* 6*d.*

DR. HEADLAND.

ON THE ACTION OF MEDICINES IN THE SYSTEM. Being the Prize Essay to which the Medical Society of London awarded the Fothergillian Gold Medal for 1852. Second Edition. 8vo. cloth, 10*s.*

MR. HIGGINBOTTOM, F.R.S., F.R.C.S.

I.

AN ESSAY ON THE USE OF THE NITRATE OF SILVER IN THE CURE OF INFLAMMATION, WOUNDS, AND ULCERS. Second Edition. Price 5*s.*

II.

ADDITIONAL OBSERVATIONS ON THE NITRATE OF SILVER; with full Directions for its Use as a Therapeutic Agent. 8vo., 2*s.* 6*d.*

MR. JOHN HILTON, F.R.S.

ON THE DEVELOPMENT AND DESIGN OF CERTAIN PORTIONS OF THE CRANIUM. Illustrated with Plates in Lithography. 8vo. cloth, 6*s.*

DR. HINDS.

THE HARMONIES OF PHYSICAL SCIENCE IN RELATION TO THE HIGHER SENTIMENTS; with Observations on Medical Studies, and on the Moral and Scientific Relations of Medical Life. Post 8vo., cloth, 4*s.*

DR. DECIMUS HODGSON.

THE PROSTATE GLAND, AND ITS ENLARGEMENT IN OLD AGE. With 12 Plates. Royal 8vo., cloth, 6*s.*

MR. JABEZ HOGG.

THE OPHTHALMOSCOPE: an Essay on its value in the Exploration of Internal Eye Diseases. Second Edition. Cloth, 3*s.* 6*d.*

MR. LUTHER HOLDEN, F.R.C.S.

HUMAN OSTEOLOGY: with Plates, showing the Attachments of the Muscles. Second Edition. 8vo. cloth, 16*s.*

MR. C. HOLTHOUSE.

I.

ON SQUINTING, PARALYTIC AFFECTIONS OF THE EYE, and CERTAIN FORMS OF IMPAIRED VISION. Fcap. 8vo. cloth, 4*s.* 6*d.*

II.

LECTURES ON STRABISMUS, delivered at the Westminster Hospital. 8vo. cloth, 4*s.*

DR. W. CHARLES HOOD.

SUGGESTIONS FOR THE FUTURE PROVISION OF CRIMINAL LUNATICS. 8vo. cloth, 5*s.* 6*d.*

MR. P. HOOD.

THE SUCCESSFUL TREATMENT OF SCARLET FEVER; also, OBSERVATIONS ON THE PATHOLOGY AND TREATMENT OF CROWING INSPIRATIONS OF INFANTS. Post 8vo. cloth, 5*s.*

DR. HOOPER.

THE MEDICAL DICTIONARY; containing an Explanation of the Terms used in Medicine and the Collateral Sciences. Eighth Edition. Edited by KLEIN GRANT, M.D. 8vo. cloth, 30*s.*

MR. JOHN HORSLEY.

A CATECHISM OF CHEMICAL PHILOSOPHY; being a Familiar Exposition of the Principles of Chemistry and Physics. With Engravings on Wood. Designed for the Use of Schools and Private Teachers. Post 8vo. cloth, 6*s.* 6*d.*

DR. HUFELAND.

THE ART OF PROLONGING LIFE. A New Edition. Edited by ERASMUS WILSON, F.R.S. Foolscap 8vo., 2*s.* 6*d.*

MR. W. CURTIS HUGMAN, F.R.C.S.

ON HIP-JOINT DISEASE; with reference especially to Treatment by Mechanical Means for the Relief of Contraction and Deformity of the Affected Limb. 8vo. cloth, 3*s.* 6*d.*

DR. HENRY HUNT.

ON HEARTBURN AND INDIGESTION. 8vo. cloth, 5*s.*

DR. INMAN.

THE PHENOMENA OF SPINAL IRRITATION AND OTHER FUNCTIONAL DISEASES OF THE NERVOUS SYSTEM EXPLAINED, and a Rational Plan of Treatment deduced. With Plates. 8vo. cloth, 6*s.*

DR. ARTHUR JACOB, F.R.C.S.

A TREATISE ON THE INFLAMMATIONS OF THE EYE-BALL. Foolscap 8vo. cloth, 5*s.*

DR. JAMES JAGO, A.B., CANTAB.; M.B., OXON.

OCULAR SPECTRES AND STRUCTURES AS MUTUAL EXPONENTS. Illustrated with Engravings on Wood. 8vo. cloth, 5*s.*

DR. JOHNSTON AND MR. SINCLAIR.

PRACTICAL MIDWIFERY: Comprising an Account of 13,748 Deliveries, which occurred in the Dublin Lying-in Hospital, during a period of Seven Years. 8vo. cloth, 15*s*.

DR. HANDFIELD JONES, F.R.S., & DR. EDWARD H. SIEVEKING.

A MANUAL OF PATHOLOGICAL ANATOMY. Illustrated with numerous Engravings on Wood. Foolscap 8vo. cloth, 12*s*. 6*d*.

MR. WHARTON JONES, F.R.S.

I.

A MANUAL OF THE PRINCIPLES AND PRACTICE OF OPHTHALMIC MEDICINE AND SURGERY; illustrated with Engravings, plain and coloured. Second Edition. Foolscap 8vo. cloth, 12*s*. 6*d*.

II.

THE WISDOM AND BENEFICENCE OF THE ALMIGHTY, AS DISPLAYED IN THE SENSE OF VISION; being the Actonian Prize Essay for 1851. With Illustrations on Steel and Wood. Foolscap 8vo. cloth, 4*s*. 6*d*.

III.

DEFECTS OF SIGHT: their Nature, Causes, Prevention, and General Management. Fcap. 8vo. 2*s*. 6*d*.

IV.

A CATECHISM OF THE MEDICINE AND SURGERY OF THE EYE AND EAR. For the Clinical Use of Hospital Students. Fcap. 8vo. 2*s*. 6*d*.

V.

A CATECHISM OF THE PHYSIOLOGY AND PHILOSOPHY OF BODY, SENSE, AND MIND. For Use in Schools and Colleges. Fcap. 8vo., 2*s*. 6*d*.

DR. BENCE JONES, F.R.S.

I.

MULDER ON WINE. Foolscap 8vo. cloth, 6*s*.

II.

ON ANIMAL CHEMISTRY, in its relation to STOMACH and RENAL DISEASES. 8vo. cloth, 6*s*.

MR. FURNEAUX JORDAN, M.R.C.S.

AN INTRODUCTION TO CLINICAL SURGERY; WITH A Method of Investigating and Reporting Surgical Cases. Fcap. 8vo. cloth, 5*s*.

MR. JUDD.

A PRACTICAL TREATISE ON URETHRITIS AND SYPHILIS: including Observations on the Power of the Menstruous Fluid, and of the Discharge from Leucorrhœa and Sores to produce Urethritis: with a variety of Examples, Experiments, Remedies, and Cures. 8vo. cloth, £1. 5*s*.

MR. KNAGGS.

UNSOUNDNESS OF MIND CONSIDERED IN RELATION TO THE QUESTION OF RESPONSIBILITY IN CRIMINAL CASES. 8vo. cloth, 4*s*. 6*d*.

DR. LAENNEC.

A MANUAL OF AUSCULTATION AND PERCUSSION. Translated and Edited by J. B. Sharpe, M.R.C.S. 3*s*.

DR. HUNTER LANE, F.L.S.

A COMPENDIUM OF MATERIA MEDICA AND PHARMACY: adapted to the London Pharmacopœia, 1851, embodying all the new French, American, and Indian Medicines, and also comprising a Summary of Practical Toxicology. Second Edition. 24mo. cloth, 5*s.* 6*d.*

DR. LANE, M.A.

HYDROPATHY; OR, THE NATURAL SYSTEM OF MEDICAL TREATMENT. An Explanatory Essay. Post 8vo. cloth, 3*s.* 6*d.*

MR. LAURENCE, M.B., F.R.C.S.

THE DIAGNOSIS OF SURGICAL CANCER. The Liston Prize Essay for 1854. Second Edition. Plates, 8vo. cloth, 7*s.* 6*d.*

MR. LAWRENCE, F.R.S.

A TREATISE ON RUPTURES. The Fifth Edition, considerably enlarged. 8vo. cloth, 16*s.*

DR. EDWIN LEE.

I.

THE EFFECT OF CLIMATE ON TUBERCULOUS DISEASE, with Notices of the chief Foreign Places of Winter Resort. Small 8vo. cloth, 6*s.*

II.

THE WATERING PLACES OF ENGLAND, CONSIDERED with Reference to their Medical Topography. Third Edition. Foolscap 8vo. cloth, 5*s.* 6*d.*

III.

THE BATHS OF GERMANY, FRANCE, & SWITZERLAND. Third Edition. Post 8vo. cloth, 8*s.* 6*d.*

IV.

THE BATHS OF RHENISH GERMANY. Post 8vo. cloth, 4*s.*

MR. HENRY LEE, F.R.C.S.

PATHOLOGICAL AND SURGICAL OBSERVATIONS; including an Essay on the Surgical Treatment of Hemorrhoidal Tumors. 8vo. cloth, 7*s.* 6*d.*

DR. ROBERT LEE, F.R.S.

I.

A TREATISE ON THE SPECULUM; with Three Hundred Cases. 8vo. cloth, 4*s.* 6*d.*

II.

CLINICAL REPORTS OF OVARIAN AND UTERINE DISEASES, with Commentaries. Foolscap 8vo. cloth, 6*s.* 6*d.*

III.

CLINICAL MIDWIFERY: comprising the Histories of 545 Cases of Difficult, Preternatural, and Complicated Labour, with Commentaries. Second Edition. Foolscap 8vo. cloth, 5*s.*

IV.

PRACTICAL OBSERVATIONS ON DISEASES OF THE UTERUS. With coloured Plates. Two Parts. Imperial 4to., 7*s.* 6*d.* each Part.

MR. LISTON, F.R.S.

PRACTICAL SURGERY. Fourth Edition. 8vo. cloth, 22*s.*

MR. H. W. LOBB, L.S.A., M.R.C.S.E.

ON SOME OF THE MORE OBSCURE FORMS OF NERVOUS AFFECTIONS, THEIR PATHOLOGY AND TREATMENT. With an Introduction on the Physiology of Digestion and Assimilation, and the Generation and Distribution of Nerve Force. Based upon Original Microscopical Observations. With Engravings. 8vo. cloth, 10*s.* 6*d.*

LONDON MEDICAL SOCIETY OF OBSERVATION.

WHAT TO OBSERVE AT THE BED-SIDE, AND AFTER DEATH. Published by Authority. Second Edition. Foolscap 8vo. cloth, 4*s.* 6*d.*

M. LUGOL.

ON SCROFULOUS DISEASES. Translated from the French, with Additions by W. H. RANKING, M.D., Physician to the Suffolk General Hospital. 8vo. cloth, 10*s.* 6*d.*

DR. GEORGE H. B. MACLEOD, F.R.C.S. (EDIN.)

NOTES ON THE SURGERY OF THE CRIMEAN WAR; with REMARKS on GUN-SHOT WOUNDS. 8vo. cloth, 10*s.* 6*d.*

MR. JOSEPH MACLISE, F.R.C.S.

I.

SURGICAL ANATOMY. A Series of Dissections, illustrating the Principal Regions of the Human Body.

The Second Edition, complete in XIII. Fasciculi. Imperial folio, 5*s.* each; bound in cloth, £3. 12*s.*; or bound in morocco, £4. 4*s.*

II.

ON DISLOCATIONS AND FRACTURES. This Work will be Uniform with the Author's "Surgical Anatomy;" each Fasciculus will contain Four beautifully executed Lithographic Drawings, and be completed in Nine Numbers. Fasciculi I. to VII., imperial folio, 5*s.*

DR. MAYNE.

AN EXPOSITORY LEXICON OF THE TERMS, ANCIENT AND MODERN, IN MEDICAL AND GENERAL SCIENCE, including a complete MEDICAL AND MEDICO-LEGAL VOCABULARY, and presenting the correct Pronunciation, Derivation, Definition, and Explanation of the Names, Analogues, Synonymes, and Phrases (in English, Latin, Greek, French, and German,) employed in Science and connected with Medicine. Parts I. to VIII., price 5*s.* each.

DR. WM. H. MADDEN.

THOUGHTS ON PULMONARY CONSUMPTION; with an Appendix on the Climate of Torquay. Post 8vo. cloth, 5*s.*

DR. MARCET.

ON THE COMPOSITION OF FOOD, AND HOW IT IS ADULTERATED; with Practical Directions for its Analysis. 8vo. cloth, 6*s.* 6*d.*

DR. MARTIN.

THE UNDERCLIFF, ISLE OF WIGHT: its Climate, History, and Natural Productions. Post 8vo. cloth, 10*s.* 6*d.*

DR. MARKHAM.

I.

DISEASES OF THE HEART: THEIR PATHOLOGY, DIAGNOSIS, AND TREATMENT. Post. 8vo. cloth, 6*s*.

II.

SKODA ON AUSCULTATION AND PERCUSSION. Post 8vo. cloth, 6*s*.

MR. J. RANALD MARTIN, F.R.S.

THE INFLUENCE OF TROPICAL CLIMATES ON EUROPEAN CONSTITUTIONS. Originally by the late JAMES JOHNSON, M.D., and now entirely rewritten; including Practical Observations on the Diseases of European Invalids on their Return from Tropical Climates. Seventh Edition. 8vo. cloth, 16*s*.

DR. MASSY.

ON THE EXAMINATION OF RECRUITS; intended for the Use of Young Medical Officers on Entering the Army. 8vo. cloth, 5*s*.

DR. MILLINGEN.

ON THE TREATMENT AND MANAGEMENT OF THE INSANE; with Considerations on Public and Private Lunatic Asylums. 18mo. cloth, 4*s*. 6*d*.

MR. JOHN L. MILTON, M.R.C.S.

PRACTICAL OBSERVATIONS ON A NEW WAY OF TREATING GONORRHŒA. With some Remarks on the Cure of Inveterate Cases. 8vo. cloth, 5*s*.

DR. MONRO.

I.

REMARKS ON INSANITY: its Nature and Treatment. 8vo. cloth, 6*s*.

II.

REFORM IN PRIVATE LUNATIC ASYLUMS. 8vo. cloth, 4*s*.

DR. NOBLE.

I.

ELEMENTS OF PSYCHOLOGICAL MEDICINE: AN INTRODUCTION TO THE PRACTICAL STUDY OF INSANITY. Second Edition. 8vo. cloth, 10*s*.

II.

THE HUMAN MIND IN ITS RELATIONS WITH THE BRAIN AND NERVOUS SYSTEM. Post 8vo. cloth, 4*s*. 6*d*,

MR. J. NOTTINGHAM, F.R.C.S.

DISEASES OF THE EAR. Illustrated by Clinical Observations. 8vo. cloth, 12*s*.

MR. NOURSE, M.R.C.S.

TABLES FOR STUDENTS. Price One Shilling the Set.

1. Divisions and Classes of the Animal Kingdom.
2. Classes and Orders of the Vertebrate Sub-kingdom.
3. Classes of the Vegetable Kingdom, according to the Natural and Artificial Systems.
4. Table of the Elements, with their Chemical Equivalents and Symbols.

MR. NUNNELEY, F.R.C.S.E.

I.

ON THE ORGANS OF VISION: THEIR ANATOMY AND PHYSIOLOGY. With Plates, 8vo. cloth, 15*s.*

II.

A TREATISE ON THE NATURE, CAUSES, AND TREATMENT OF ERYSIPELAS. 8vo. cloth, 10*s.* 6*d.*

DR. ODLING.

A COURSE OF PRACTICAL CHEMISTRY, FOR THE USE OF MEDICAL STUDENTS. Arranged with express reference to the Three Months' Summer Course. Post 8vo. cloth, 4*s.* 6*d.*

TRANSACTIONS OF THE ODONTOLOGICAL SOCIETY OF LONDON. With Plates. Vol. I., 8vo. cloth, 8*s.* 6*d.*

MR. PAGET.

A DESCRIPTIVE CATALOGUE OF THE ANATOMICAL MUSEUM OF ST. BARTHOLOMEW'S HOSPITAL. Vol. I. Morbid Anatomy. 8vo. cloth, 5*s.*

DITTO. Vol. II. Natural and Congenitally Malformed Structures, and Lists of the Models, Casts, Drawings, and Diagrams. 5*s.*

MR. LANGSTON PARKER.

THE MODERN TREATMENT OF SYPHILITIC DISEASES, both Primary and Secondary; comprising the Treatment of Constitutional and Confirmed Syphilis, by a safe and successful Method. Third Edition, 8vo. cloth, 10*s.*

MR. JAMES PART, F.R.C.S.

THE MEDICAL AND SURGICAL POCKET CASE BOOK, for the Registration of important Cases in Private Practice, and to assist the Student of Hospital Practice. Second Edition. 3*s.* 6*d.*

DR. THOMAS B. PEACOCK, M.D.

I.

ON MALFORMATIONS, ETC. OF THE HUMAN HEART, with Original Cases. With Eight Plates. 8vo. cloth, 8*s.*

II.

ON THE INFLUENZA, OR EPIDEMIC CATARRHAL FEVER OF 1847-8. 8vo. cloth, 5*s.* 6*d.*

MR. OLIVER PEMBERTON, M.R.C.S.

OBSERVATIONS ON THE HISTORY, PATHOLOGY, AND TREATMENT OF CANCEROUS DISEASES. Part I.—Melanosis. With coloured Plates. Royal 8vo. cloth, 4*s.* 6*d.*

DR. PEREIRA, F.R.S.

SELECTA E PRÆSCRIPTIS. Twelfth Edition. 24mo. cloth, 5*s.*

MR. PETTIGREW, F.R.S.

ON SUPERSTITIONS connected with the History and Practice of Medicine and Surgery. 8vo. cloth, 7*s.*

DR. PICKFORD.

HYGIENE; or, Health as Depending upon the Conditions of the Atmosphere, Food and Drinks, Motion and Rest, Sleep and Wakefulness, Secretions, Excretions, and Retentions, Mental Emotions, Clothing, Bathing, &c. 8vo. cloth, 9*s.*

MR. PIRRIE, F.R.S.E.

THE PRINCIPLES AND PRACTICE OF SURGERY. With numerous Engravings on Wood. 8vo. cloth, 21*s.*

PHARMACOPŒIA COLLEGII REGALIS MEDICORUM LONDINENSIS. 8vo. cloth, 9*s.*; or 24mo. 5*s.*

Imprimatur.

Hic liber, cui titulus, Pharmacopœia Collegii Regalis Medicorum Londinensis. Datum ex Ædibus Collegii in comitiis censoriis, Novembris Mensis 14^to^ 1850.

Johannes Ayrton Paris. *Præses.*

PROFESSORS PLATTNER & MUSPRATT.

THE USE OF THE BLOWPIPE IN THE EXAMINATION OF MINERALS, ORES, AND OTHER METALLIC COMBINATIONS. Illustrated by numerous Engravings on Wood. Third Edition. 8vo. cloth, 10*s.* 6*d.*

THE PRESCRIBER'S PHARMACOPŒIA; containing all the Medicines in the London Pharmacopœia, arranged in Classes according to their Action, with their Composition and Doses. By a Practising Physician. Fourth Edition. 32mo. cloth, 2*s.* 6*d.*; roan tuck (for the pocket), 3*s.* 6*d.*

MR. LAKE PRICE.

PHOTOGRAPHIC MANIPULATION: Treating of the Practice of the Art, and its various appliances to Nature. With Fifty Engravings on Wood. Post 8vo. cloth, 6*s.* 6*d.*

SIR WM. PYM, K.C.H.

OBSERVATIONS UPON YELLOW FEVER, with a Review of "A Report upon the Diseases of the African Coast, by Sir Wm. Burnett and Dr. Bryson," proving its highly Contagious Powers. Post 8vo. 6*s.*

DR. JOHN ROWLISON PRETTY.

AIDS DURING LABOUR, including the Administration of Chloroform, the Management of Placenta and Post-partum Hæmorrhage. Fcap. 8vo. cloth, 4*s.* 6*d.*

DR. RADCLIFFE.

EPILEPSY, AND OTHER CONVULSIVE AFFECTIONS; their Pathology and Treatment. Second Edition. Post 8vo. cloth, 7*s.* 6*d.*

MR. RAINEY.

ON THE MODE OF FORMATION OF SHELLS OF ANIMALS, OF BONE, AND OF SEVERAL OTHER STRUCTURES, by a Process of Molecular Coalescence, Demonstrable in certain Artificially-formed Products. Fcap. 8vo. cloth, 4*s.* 6*d.*

DR. F. H. RAMSBOTHAM.

THE PRINCIPLES AND PRACTICE OF OBSTETRIC MEDICINE AND SURGERY. Illustrated with One Hundred and Twenty Plates on Steel and Wood; forming one thick handsome volume. Fourth Edition. 8vo. cloth, 22*s.*

DR. RAMSBOTHAM.

PRACTICAL OBSERVATIONS ON MIDWIFERY, with a Selection of Cases. Second Edition. 8vo. cloth, 12*s.*

DR. DU BOIS REYMOND.

ANIMAL ELECTRICITY; Edited by H. Bence Jones, M.D., F.R.S. With Fifty Engravings on Wood. Foolscap 8vo. cloth, 6*s.*

DR. REYNOLDS.

THE DIAGNOSIS OF DISEASES OF THE BRAIN, SPINAL CORD, AND THEIR APPENDAGES. 8vo. cloth, 8*s.*

DR. B. W. RICHARDSON.

I.

ON THE CAUSE OF THE COAGULATION OF THE BLOOD. Being the Astley Cooper Prize Essay for 1856. With a Practical Appendix. 8vo. cloth, 16*s.*

II.

THE HYGIENIC TREATMENT OF PULMONARY CONSUMPTION. 8vo. cloth, 5*s.* 6*d.*

DR. W. H. ROBERTSON.

I.

THE NATURE AND TREATMENT OF GOUT. 8vo. cloth, 10*s.* 6*d.*

II.

A TREATISE ON DIET AND REGIMEN. Fourth Edition. 2 vols. post 8vo. cloth, 12*s.*

MR. ROBERTON.

ON THE PHYSIOLOGY AND DISEASES OF WOMEN, AND ON PRACTICAL MIDWIFERY. 8vo. cloth, 12*s.*

MR. WILLIAM ROBERTS.

AN ESSAY ON WASTING PALSY; being a Systematic Treatise on the Disease hitherto described as ATROPHIE MUSCULAIRE PROGRESSIVE. With Four Plates. 8vo. cloth, 7*s.* 6*d.*

DR. ROWE, F.S.A.

I.

ON SOME OF THE MORE IMPORTANT DISEASES OF WOMEN and CHILDREN. Second Edition. Fcap. 8vo. cloth, 4*s.* 6*d.*

II.

NERVOUS DISEASES, LIVER AND STOMACH COMPLAINTS, LOW SPIRITS, INDIGESTION, GOUT, ASTHMA, AND DISORDERS PRODUCED BY TROPICAL CLIMATES. With Cases. Fifteenth Edition. Fcap. 8vo. 2*s.* 6*d.*

DR. ROYLE, F.R.S.

A MANUAL OF MATERIA MEDICA AND THERAPEUTICS. With numerous Engravings on Wood. Third Edition. Fcap. 8vo. cloth, 12*s.* 6*d.*

MR. RUMSEY, F.R.C.S.

ESSAYS ON STATE MEDICINE. 8vo. cloth, 10*s.* 6*d.*

MR. SAVORY.

A COMPENDIUM OF DOMESTIC MEDICINE, AND COMPANION TO THE MEDICINE CHEST; comprising Plain Directions for the Employment of Medicines, with their Properties and Doses, and Brief Descriptions of the Symptoms and Treatment of Diseases, and of the Disorders incidental to Infants and Children, with a Selection of the most efficacious Prescriptions. Intended as a Source of Easy Reference for Clergymen, and for Families residing at a Distance from Professional Assistance. Fifth Edition. 12mo. cloth, 5*s.*

DR. SCHACHT.

THE MICROSCOPE, AND ITS APPLICATION TO VEGETABLE ANATOMY AND PHYSIOLOGY. Edited by FREDERICK CURREY, M.A. Fcap. 8vo. cloth, 6*s.*

DR. SEMPLE.

ON COUGH: its Causes, Varieties, and Treatment. With some practical Remarks on the Use of the Stethoscope as an aid to Diagnosis. Post 8vo. cloth, 4*s.* 6*d.*

MR. SHAW, M.R.C.S.

THE MEDICAL REMEMBRANCER; OR, BOOK OF EMERGENCIES: in which are concisely pointed out the Immediate Remedies to be adopted in the First Moments of Danger from Poisoning, Apoplexy, Burns, and other Accidents; with the Tests for the Principal Poisons, and other useful Information. Fourth Edition. Edited, with Additions, by JONATHAN HUTCHINSON, M.R.C.S. 32mo. cloth, 2*s.* 6*d.*

DR. SIBSON, F.R.S.

MEDICAL ANATOMY. With coloured Plates. Imperial folio. Fasciculi I. to V. 5*s.* each.

DR. E. H. SIEVEKING.

ON EPILEPSY AND EPILEPTIFORM SEIZURES: their Causes, Pathology, and Treatment. Post 8vo. cloth, 7*s.* 6*d.*

DR. SMELLIE.

OBSTETRIC PLATES: being a Selection from the more Important and Practical Illustrations contained in the Original Work. With Anatomical and Practical Directions. 8vo. cloth, 5*s.*

MR. HENRY SMITH, F.R.C.S.

ON STRICTURE OF THE URETHRA. 8vo. cloth, 7*s.* 6*d.*

DR. W. TYLER SMITH.

I.

A MANUAL OF OBSTETRICS, THEORETICAL AND PRACTICAL. Illustrated with 186 Engravings. Fcap. 8vo. cloth, 12*s.* 6*d.*

II.

THE PATHOLOGY AND TREATMENT OF LEUCORRHŒA. With Engravings on Wood. 8vo. cloth, 7*s.*

DR. SNOW.

I.

ON CHLOROFORM AND OTHER ANÆSTHETICS: THEIR ACTION AND ADMINISTRATION. Edited, with a Memoir of the Author, by Benjamin W. Richardson, M.D. 8vo. cloth, 10*s.* 6*d.*

II.

ON THE MODE OF COMMUNICATION OF CHOLERA. Second Edition, much Enlarged, and Illustrated with Maps. 8vo. cloth, 7*s.*

DR. STANHOPE TEMPLEMAN SPEER.

PATHOLOGICAL CHEMISTRY, IN ITS APPLICATION TO THE PRACTICE OF MEDICINE. Translated from the French of MM. BECQUEREL and RODIER. 8vo. cloth, 12*s.*

DR. SPURGIN.

LECTURES ON MATERIA MEDICA, AND ITS RELATIONS TO THE ANIMAL ECONOMY. Delivered before the Royal College of Physicians. 8vo. cloth, 5*s.* 6*d.*

MR. SQUIRE, F.L.S.

THE PHARMACOPŒIA, (LONDON, EDINBURGH, AND DUBLIN,) arranged in a convenient TABULAR FORM, both to suit the Prescriber for comparison, and the Dispenser for compounding the formulæ; with Notes, Tests, and Tables. 8vo. cloth, 12*s.*

DR. SWAYNE.

OBSTETRIC APHORISMS FOR THE USE OF STUDENTS COMMENCING MIDWIFERY PRACTICE. With Engravings on Wood. Fcap. 8vo. cloth, 3*s.* 6*d.*

DR. STEGGALL.

STUDENTS' BOOKS FOR EXAMINATION.

I.

A MEDICAL MANUAL FOR APOTHECARIES' HALL AND OTHER MEDICAL BOARDS. Twelfth Edition. 12mo. cloth, 10*s.*

II.

A MANUAL FOR THE COLLEGE OF SURGEONS; intended for the Use of Candidates for Examination and Practitioners. Second Edition. 12mo. cloth, 10*s.*

III.

GREGORY'S CONSPECTUS MEDICINÆ THEORETICÆ. The First Part, containing the Original Text, with an Ordo Verborum, and Literal Translation. 12mo. cloth, 10*s.*

IV.

THE FIRST FOUR BOOKS OF CELSUS; containing the Text, Ordo Verborum, and Translation. Second Edition. 12mo. cloth, 8*s.*

V.

A TEXT-BOOK OF MATERIA-MEDICA AND THERAPEUTICS. 12mo. cloth, 7*s.*

VI.

FIRST LINES FOR CHEMISTS AND DRUGGISTS PREPARING FOR EXAMINATION AT THE PHARMACEUTICAL SOCIETY. Second Edition. 18mo. cloth, 3*s.* 6*d.*

MR. STOWE, M.R.C.S.

A TOXICOLOGICAL CHART, exhibiting at one view the Symptoms Treatment, and Mode of Detecting the various Poisons, Mineral, Vegetable, and Animal. To which are added, concise Directions for the Treatment of Suspended Animation. Eleventh Edition. On Sheet, 2*s.*; mounted on Roller, 5*s.*

MR. TAMPLIN, F.R.C.S.E.

LATERAL CURVATURE OF THE SPINE: its Causes, Nature, and Treatment. 8vo. cloth, 4*s.*

DR. ALFRED S. TAYLOR, F.R.S.

I.

A MANUAL OF MEDICAL JURISPRUDENCE. Sixth Edition. Fcap. 8vo. cloth, 12*s.* 6*d.*

II.

ON POISONS, in relation to MEDICAL JURISPRUDENCE AND MEDICINE. Fcap. 8vo. cloth, 12*s.* 6*d.*

MR. TEALE.

ON AMPUTATION BY A LONG AND A SHORT RECTANGULAR FLAP. With Engravings on Wood. 8vo. cloth, 5*s.*

DR. THEOPHILUS THOMPSON, F.R.S.

I.

CLINICAL LECTURES ON PULMONARY CONSUMPTION. With Plates. 8vo. cloth, 7*s.* 6*d.*

II.

LETTSOMIAN LECTURES ON PULMONARY CONSUMPTION; with Remarks on Microscopical Indications, and on Cocoa-nut Oil. Post 8vo., 2*s.* 6*d.*

DR. THOMAS.

THE MODERN PRACTICE OF PHYSIC; exhibiting the Symptoms, Causes, Morbid Appearances, and Treatment of the Diseases of all Climates. Eleventh Edition. Revised by ALGERNON FRAMPTON, M.D. 2 vols. 8vo. cloth, 28*s.*

MR. HENRY THOMPSON, M.B. LOND., F.R.C.S.

I.

STRICTURE OF THE URETHRA; its Pathology and Treatment. The last Jacksonian Treatise of the Royal College of Surgeons. With Plates. Second Edition. 8vo. cloth, 10*s.*

II.

THE ENLARGED PROSTATE; its Pathology and Treatment. With Observations on the Relation of this Complaint to Stone in the Bladder. With Plates. 8vo. cloth, 7*s.* 6*d.*

DR. THUDICHUM.

A TREATISE ON THE PATHOLOGY OF THE URINE, Including a complete Guide to its Analysis. With Plates, 8vo. cloth, 14*s.*

DR. TILT.

I.

ON DISEASES OF WOMEN AND OVARIAN INFLAMMATION IN RELATION TO MORBID MENSTRUATION, STERILITY, PELVIC TUMOURS, AND AFFECTIONS OF THE WOMB. Second Edition. 8vo. cloth, 9*s.*

II.

THE CHANGE OF LIFE IN HEALTH AND DISEASE: a Practical Treatise on the Nervous and other Affections incidental to Women at the Decline of Life. Second Edition. 8vo. cloth, 6*s.*

DR. ROBERT B. TODD, F.R.S.

I.

CLINICAL LECTURES ON PARALYSIS, DISEASES OF THE BRAIN, and other AFFECTIONS of the NERVOUS SYSTEM. Second Edition. Foolscap 8vo. cloth, 6*s*.

II.

CLINICAL LECTURES ON CERTAIN DISEASES OF THE URINARY ORGANS, AND ON DROPSIES. Fcap. 8vo. cloth, 6*s*.

MR. JOSEPH TOYNBEE, F.R.S.

A DESCRIPTIVE CATALOGUE OF PREPARATIONS ILLUSTRATIVE OF THE DISEASES OF THE EAR, IN HIS MUSEUM. 8vo. cloth, 5*s*.

MR. SAMUEL TUKE.

DR. JACOBI ON THE CONSTRUCTION AND MANAGEMENT OF HOSPITALS FOR THE INSANE. Translated from the German. With Introductory Observations by the Editor. With Plates. 8vo. cloth, 9*s*.

DR. TURNBULL.

A PRACTICAL TREATISE ON DISORDERS OF THE STOMACH with FERMENTATION; and on the Causes and Treatment of Indigestion, &c. 8vo. cloth, 6*s*.

DR. UNDERWOOD.

TREATISE ON THE DISEASES OF CHILDREN. Tenth Edition, with Additions and Corrections by HENRY DAVIES, M.D. 8vo. cloth, 15*s*.

VESTIGES OF THE NATURAL HISTORY OF CREATION. Tenth Edition. Illustrated with 100 Engravings on Wood. 8vo. cloth, 12*s*. 6*d*.

BY THE SAME AUTHOR.

EXPLANATIONS: A SEQUEL TO "VESTIGES." Second Edition. Post 8vo. cloth, 5*s*.

DR. UNGER.

BOTANICAL LETTERS. Translated by Dr. B. PAUL. Numerous Woodcuts. Post 8vo., 5*s*.

DR. VAN OVEN.

ON THE DECLINE OF LIFE IN HEALTH AND DISEASE; being an Attempt to Investigate the Causes of LONGEVITY, and the Best Means of Attaining a Healthful Old Age. 8vo. cloth, 10*s.* 6*d.*

MR. WADE, F.R.C.S.

STRICTURE OF THE URETHRA; its Complications and Effects. With Practical Observations on its Causes, Symptoms, and Treatment; and on a Safe and Efficient Mode of Treating its more Intractable Forms. 8vo. cloth, 5*s.*

DR. WALLER.

ELEMENTS OF PRACTICAL MIDWIFERY; or, Companion to the Lying-in Room. Fourth Edition, with Plates. Fcap. cloth, 4*s.* 6*d.*

MR. HAYNES WALTON, F.R.C.S.

OPERATIVE OPHTHALMIC SURGERY. With Engravings on Wood. 8vo. cloth, 18*s.*

DR. WARDROP.

ON DISEASES OF THE HEART. 8vo. cloth, 12*s.*

DR. EBEN. WATSON, A.M.

ON THE TOPICAL MEDICATION OF THE LARYNX IN CERTAIN DISEASES OF THE RESPIRATORY AND VOCAL ORGANS. 8vo. cloth, 5*s.*

DR. WEBER.

A CLINICAL HAND-BOOK OF AUSCULTATION AND PERCUSSION. Translated by JOHN COCKLE, M.D. 5*s.*

DR. WEGG.

OBSERVATIONS RELATING TO THE SCIENCE AND ART OF MEDICINE. 8vo. cloth, 8*s.*

DR. WEST.

LECTURES ON THE DISEASES OF WOMEN. 8vo. cloth, 16*s.*

*** Part II., 8vo. cloth, 6*s.*, may be had separately.

MR. T. SPENCER WELLS, F.R.C.S.

PRACTICAL OBSERVATIONS ON GOUT AND ITS COMPLICATIONS, and on the Treatment of Joints Stiffened by Gouty Deposits. Foolscap 8vo. cloth, 5*s*.

MR. WHEELER.

HAND-BOOK OF ANATOMY FOR STUDENTS OF THE FINE ARTS. New Edition, with Engravings on Wood. Fcap. 8vo., 2*s*. 6*d*.

DR. WHITEHEAD, F.R.C.S.

ON THE TRANSMISSION FROM PARENT TO OFFSPRING OF SOME FORMS OF DISEASE, AND OF MORBID TAINTS AND TENDENCIES. Second Edition. 8vo. cloth, 10*s*. 6*d*.

DR. WILLIAMS, F.R.S.

PRINCIPLES OF MEDICINE: An Elementary View of the Causes, Nature, Treatment, Diagnosis, and Prognosis, of Disease. With brief Remarks on Hygienics, or the Preservation of Health. The Third Edition. 8vo. cloth, 15*s*.

DR. JOSEPH WILLIAMS.

INSANITY: its Causes, Prevention, and Cure; including Apoplexy, Epilepsy, and Congestion of the Brain. Second Edition. Post 8vo. cloth, 10*s*. 6*d*.

DR. J. HUME WILLIAMS.

UNSOUNDNESS OF MIND, IN ITS MEDICAL AND LEGAL CONSIDERATIONS. 8vo. cloth, 7*s*. 6*d*.

DR. G. C. WITTSTEIN.

PRACTICAL PHARMACEUTICAL CHEMISTRY: An Explanation of Chemical and Pharmaceutical Processes, with the Methods of Testing the Purity of the Preparations, deduced from Original Experiments. Translated from the Second German Edition, by STEPHEN DARBY. 18mo. cloth, 6*s*.

DR. HENRY G. WRIGHT.

HEADACHES; their Causes and their Cure. Second Edition. Fcap. 8vo. 2*s*. 6*d*.

MR. ERASMUS WILSON, F.R.S.

I.

THE ANATOMIST'S VADE-MECUM: A SYSTEM OF HUMAN ANATOMY. With numerous Illustrations on Wood. Seventh Edition. Foolscap 8vo. cloth, 12*s.* 6*d.*

II.

DISEASES OF THE SKIN: A Practical and Theoretical Treatise on the DIAGNOSIS, PATHOLOGY, and TREATMENT OF CUTANEOUS DISEASES. Fourth Edition. 8vo. cloth, 16*s.*

THE SAME WORK; illustrated with finely executed Engravings on Steel, accurately coloured. 8vo. cloth, 34*s.*

III.

HEALTHY SKIN: A Treatise on the Management of the Skin and Hair in relation to Health. Fifth Edition. Foolscap 8vo. 2*s.* 6*d.*

IV.

PORTRAITS OF DISEASES OF THE SKIN. Folio. Fasciculi I. to XII., completing the Work. 20*s.* each.

V.

ON SYPHILIS, CONSTITUTIONAL AND HEREDITARY; AND ON SYPHILITIC ERUPTIONS. With Four Coloured Plates. 8vo. cloth, 16*s.*

VI.

A THREE WEEKS' SCAMPER THROUGH THE SPAS OF GERMANY AND BELGIUM, with an Appendix on the Nature and Uses of Mineral Waters. Post 8vo. cloth, 6*s.* 6*d.*

DR. FORBES WINSLOW, D.C.L. OXON.

I.

LETTSOMIAN LECTURES ON INSANITY. 8vo. cloth, 5*s.*

II.

A SYNOPSIS OF THE LAW OF LUNACY; as far as it relates to the Organization and Management of Private Asylums for the Care and Treatment of the Insane. In the form of a Chart, varnished, mounted on canvas and rollers, price 6*s.*

MR. YEARSLEY.

I.

DEAFNESS PRACTICALLY ILLUSTRATED; being an Exposition of Original Views as to the Causes and Treatment of Diseases of the Ear. Fifth Edition. Foolscap 8vo., 2*s.* 6*d.*

II.

ON THE ENLARGED TONSIL AND ELONGATED UVULA, and other Morbid Conditions of the Throat. Sixth Edition. 8vo. cloth, 5*s.*

Printed by W. Blanchard & Sons, 62, Millbank Street, Westminster.