tion accompanied by short whining grunts; struggles occasionally, and opens mouth widely. 2 p.m.—Another dose of ether and a cold douche given, but without any effect. Slight power of using the muscles of the body remains, but all co-ordinating power is gone. 2.30.—Lying on left side as though asleep; occasional twitching of head. Pulse 26. 2.36.—Convulsions of jaws and fore legs, with failing respiration. 2.50.—Perfectly motionless, and, but for the slow respiration, apparently dead. 3 p.m.—Died in about six hours after inoculation.

Body opened immediately; blood from the large vessels coagulated firmly within a few minutes. Lungs perfectly free from congestion; rather blanched. Liver and abdominal viscera healthy; intestines contracting peristaltically. Heart contracting slowly; no coagula in its cavities.

The blood was examined shortly after death with Professor Macnamara’s 1-25th and 1-50th of an inch object-glasses. The red corpuscles were shrivelled and crenate, but after being soaked for some little time in a slightly ammoniacal solution of carmine, they assumed their normal form and appearance. No indications existed of new cell-formations containing germinal matter, although they were most carefully sought for. The only cells that we could find were the healthy red and white corpuscles.

In this case, where death occurred in six hours, and where sufficient time had been given for blood-changes, I think that if the changes described by Professor Halford always take place, they ought to have been detected; but it would be premature to come to a conclusion from so few experiments. I propose to test the matter still further, with reference not only to the action of the poison, but also to the efficacy of reputed antidotes. I am indebted to Dr J. Anderson of the Indian Museum, not only for the means of making these experiments, but also for much valuable assistance in conducting them.

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Part Second.

REVIEWS.

Lectures on Surgery. By James Spence, F.R.S.E.; Surgeon to the Queen in Scotland; President of the Royal College of Surgeons, Edinburgh; Professor of Surgery in the University of Edinburgh, etc. Part I. Edinburgh: Adam & Charles Black.

For many years Mr Spence has successfully taught surgery in Edinburgh, at first as an Extra-Academical Lecturer, latterly as Professor in the University. He has also long since made his reputation as an operative surgeon in the Royal Infirmary of Edin-
burgh. An extensive and varied experience in the higher departments of surgery has necessarily caused the accumulation, in a mind well fitted for its reception, of a mass of valuable surgical knowledge. Hitherto the medical public have only had the opportunity of becoming acquainted with the valuable reports of his hospital practice, or with the details of important cases, graphically narrated and pointing to useful practical deductions; but now Mr Spence has summarized his knowledge, and, in the volume before us, has commenced a series of Lectures on the Principles and Practice of Surgery which bids fair to extend his reputation as an eminent practical surgeon, and a judicious and efficient teacher.

The Lectures are written in an easy and familiar style, and bear upon them the impress of being the result of that mature experience, unbiased by preconceived notions or theories, which entitles a writer to speak with authority.

The present publication embraces chiefly what may be called the preliminary details of Surgery, including Inflammation and its products; Tumours; Syphilis; Wounds; Burns and Scalds; and Tetanus: and when treating of these subjects, Mr Spence has indulged in no undue prolixity, confining himself to what is essentially necessary to be thoroughly understood. When the more practical questions come to be discussed, we may rest assured that abundant materials will be forthcoming for proving and illustrating his views; and that the science of surgery will be much benefitted by the acquisition of new and important facts.

Being intended chiefly as a text-book for students attending his class, Professor Spence's Lectures do not treat at length of the numerous theoretical views that have been broached regarding some of the subjects which have come under consideration in the First Part, and accordingly the remarks on Primary Syphilis and on Pyaemia may appear somewhat curt; still, however, what is said is well said; and it is worthy of remark that one who has had so much opportunity for observation throws a grave doubt over the existence of a duality of poison in Primary Syphilis, while he points out that Pyaemia, the so-called scourge of hospitals, should be considered as having no less a constitutional than a local origin.

The illustrations are cleverly drawn, and some of them rendered still more demonstrative by being coloured. We notice an originality and quaintness about several of the figures which render them peculiarly impressive; for instance, the attitude and agonized expression in the face of the youth having his chronic abscess carbolically tapped; and the Risus Sardonicus so well marked in the case of Tetanus. Both these drawings do much credit to the limner, Dr John Smith.

In conclusion, we need only express the opinion, that if the subsequent Parts are as carefully written and as cleverly illustrated as No. I, not only students, but the profession generally, will obtain a valuable acquisition to their surgical library, while Professor Spence will add greatly to his already well-earned sound surgical reputation.
A Collection of the Published Writings of the late Thomas Addison, M.D., Physician to Guy's Hospital. Edited, with Introductory Preface to several of the Papers, by Dr Wilks and Dr Daldy. The New Sydenham Society. London: 1868.

We most cordially commend the decision of the Council of the New Sydenham Society, which led to the publication of this historically interesting and practically valuable book. Few names have, of late years, been better known to the profession than that of the eminent physician, whose contributions to its literature, too few in number, have nevertheless been, one and all, highly and justly esteemed. A brief but kindly and discriminating biography of Dr Addison precedes the collection of his papers. He was born of humble parents at Long Benton, near Newcastle, about 1793; attended the village school in the place of his birth, and afterwards the grammar-school at Newcastle, and ultimately migrated to Edinburgh, where he graduated M.D. in 1815, selecting for the subject of his inaugural thesis “De Siphilide et Hydrargyro.” There is no intimation in the biographical sketch, of Dr Addison having practised his profession in any other locality than the metropolis. He was appointed assistant-physician to Guy's Hospital in 1824, and three years subsequently nominated to the chair of Materia Medica in that important medical school. It is stated, in proof of his popularity as a lecturer, that his lecture-fees must have amounted at one time to seven or eight hundred a year. In 1837 Dr Addison received the appointment of physician to the hospital, and was at the same time selected as the colleague of the late distinguished Dr Bright, in the duties of the chair of Medicine. From that time down to 1860, when, to use his own words, “a considerable breakdown” in his health having occurred, he was compelled to resign all active professional employment, he laboured ardently and constantly as a hospital physician and clinical teacher, while it is probably not too much to declare that, during these three-and-twenty years, no name contributed more to the fame and influence of “Guy’s,” than did that of Thomas Addison.

It is indeed to be regretted that a physician who observed so well and thought so profoundly as Dr Addison did, has published so little. If, however, we endeavour to weigh the value of what he has left us of matured observation, we can have no hesitation in concluding that his contributions, scanty though they be, offer a very favourable contrast to many publications of a vastly more pretentious character, with which we are, alas, only too familiar!

“Tenet insanabile multos scribendi cacoethes.”

That memoir of Dr Addison which is most extensively known, and will, in all probability, be the one most frequently referred to, and upon which his future fame will chiefly depend, is entitled,
"On the Constitutional and Local Effects of Disease of the Supra-Renal Capsules." It is a brief memoir; so brief, indeed, as to justify the able editors of the present volume in stating, that its brevity "may excite surprise in the minds of some of our readers unacquainted with its origin and the process of its production." These, however, they unfold; and in doing so, afford the amplest proof of the truly scientific spirit, and the enviable modesty of its accomplished author. Our readers do not require to be informed that Dr Addison was the earliest observer who directed attention to the pathological condition of the supra-renal capsules. His inability to connect a malady which he had styled "Idiopathic Anemia" with any known morbid state or structure, led Dr Addison to the discovery of a diseased condition of these little bodies. Of this malady the clinical features were anaemia or bloodlessness, a sense of intense prostration, and a remarkable change in the pigmentation of the skin—portions having, in particular, assumed a dark brown tint, the so-called bronzing. It resulted that when Dr Addison, in the absence of any other pathological condition capable in any measure of explaining the peculiar morbid state, found the supra-renal capsules the seat of a remarkable change, the association between the previously carefully observed state and the particular lesion took possession of his mind, and led him to connect the two intimately together, so intimately; indeed, as finally to determine that they stood in the relation of cause and effect—that the lesion of the supra-renal capsules was the cause of the peculiar cachexia, including the darkening of the skin. It is scarcely necessary to add, that since the original publication of the memoir in question, in May 1855, many observers both in this country and on the Continent, likewise also in America, have abundantly confirmed the correctness of Dr Addison's important conclusion, amounting, as it does, to a really great discovery. No one has done more to strengthen this still growing conviction than one of the two editors of the "collection," Dr Wilks. In the volume of Guy's Hospital Reports for 1862, Dr Wilks has furnished a very able résumé of our knowledge regarding the "Morbis Addisonii," while he has more particularly pointed out that the lesion which leads to the production of the peculiar train of symptoms is a special lesion of the supra-renal capsules, one altogether sui generis. It is thus described by Dr Wilks:—"When the disease is recent, the organ is somewhat enlarged, and changed into a material which is semi-translucent, of a gray colour, softish, homogeneous, and which, when examined microscopically, is found to be without structure, or sometimes slightly fibrillated, or containing a few abortive nuclei or cells. This lardaceous kind of material is the first deposited, and resembles what is often seen in the early stages of scrofulous enlargement of the lymphatic glands; subsequently it undergoes a decay or degeneration, as in these glands, and changes into an opaque yellowish substance; and thus the two materials are
constantly found associated. At a later period, as in a scrofulous gland, this may soften into a putty-like matter, or it may dry up, leaving the mineral part as a chalky deposit, scattered through the organs. These, then, are the changes—first, the deposition of a translucent, softish, homogeneous substance; subsequently the degeneration of this into a yellowish-white opaque matter; and afterwards a softening into a so-called abscess, or drying-up into a chalky mass.” We have been the more anxious to fix our readers’ attention on the characters of the true “Morbus Addisonii,” seeing that Dr Wilks and other competent observers have deliberately stated, that the lesion in question “has essential peculiarities of its own; that no other disease or degeneration of the organ is capable of producing the same associated train of symptoms; indeed, that no other primary disease of the organ has been seen.” This view, of the importance of which there can be no doubt, has been arrived at by a careful study of facts since the death of Dr Addison, by whom, indeed, a wholly different opinion had been expressed; for we gather from his remarks, that if the supra-renal capsules were involved in cancer or tubercle, symptoms corresponding to those described by him would result. The slowness manifested by some observers in accepting the existence of “Addison’s Disease” may, in part at least, be explained on the ground now adverted to. The integrity of the supra-renal bodies may be affected, and no cachexia, such as Dr Addison described, be induced; but in every case in which the lesion clearly defined by Dr Wilks has existed, the anaemia, prostration, and altered pigmentation have been declared. We altogether sympathize in the concluding words of the editors’ prefatory remarks:—“Like most other great discoveries, the full recognition of its importance has been slowly adopted, and the progressive investigation of its clinical nature languidly prosecuted; for nearly a quarter of a century has elapsed since the original paper was read before the South London Medical Society. Yet, even now, it does not find a place in the nosology of some writers, although the evidence of its distinct and essential nature as a malady sui generis is conclusive, whether it be deduced from observations made in this country or throughout the continent of Europe.”

The important paper of Dr Addison which we have now noticed, occupies the last place in the volume presently under consideration. In it there are other twelve memoirs. These are as follows:—1. Observations on the Anatomy of the Lungs; 2. Observations on the Diagnosis of Pneumonia; 3. Observations on Pneumonia and its consequences; 4. On the Pathology of Phthisis; 5. On the difficulties and fallacies attending Physical Diagnosis in Diseases of the Chest. To the five papers, the titles of which have now been given, the editors have supplied an interesting preface; and, in doing so, have vindicated the claim of Dr Addison to be considered one of the true pioneers in “unravelling the tangled problem of slow lung disorganization.” The 6th paper is, Observations on Fatty De-
generation of the Liver. With this interesting morbid condition the name of Dr Addison is inseparably connected. His description of the condition of the integuments, believed by him to be pathognomonic, in persons so suffering; is familiar to all who have paid any attention to the subject. The remaining papers are—7. On the Disorders of Females connected with Uterine Irritation; 8. Case of Ovarian Disease removed by the accidental rupture of the Cyst; 9. On a certain Affection of the Skin, Vitiligoidea—\(a\). Plana, \(b\). Tuberosa; 10. On the Keloid of Alibert and on true Keloid; 11. On the Disorders of the Brain connected with Diseased Kidneys; 12. On the influence of Electricity as a remedy in certain Convulsive and Spasmodic Diseases.

A Practical Treatise on Bright's Diseases of the Kidneys. By T. Grainger Stewart, M.D., F.R.S.E., Fellow of the Royal College of Physicians, Lecturer on General Pathology, Surgeons' Hall, etc. Edinburgh: Adam and Charles Black. 1868.

By his contributions to the subject of renal disease, Dr Grainger Stewart is already favourably known. Commencing some years ago with the study of the waxy affection of the kidney, which is less generally understood, he has since extended his investigations to the other forms of renal lesion included under the general designation of Bright's disease. His papers published from time to time in this and other medical journals, have attracted attention by their ingenious views, and certain original observations. The purpose of the present volume is to bring together, in an accessible form, the results of his inquiries. It does not profess to be an exhaustive treatise on Bright's disease; but it purposes to give an outline of those views in regard to the affections described, which the author believes to be most correct, at the same time that it records, on certain points, the opinions and observations which are peculiar to the author himself. These intentions the work before us ably fulfils. It is written fluently yet succinctly; contains a large amount of information in a small compass; and is clear in its statements of opinion and fact on every topic touched upon. The text is embellished by some well-executed plates, illustrative of the morbid structures, as seen with the microscope. Both as to matter and form, Dr Stewart's treatise is well worthy the attention of the profession.

By "Bright's diseases" in the plural, Dr Stewart means what are more commonly called the different forms of Bright's disease. In the classification of these forms, authors differ, but in recent times, Virchow's arrangement has been generally followed. According to this, as the kidney consists of tubules, interstitial tissue, and bloodvessels, so three forms of Bright's disease are recognised, one originating in each of these structures. This
division Dr Stewart adopts; the disease affecting the tubules he calls the *Inflammatory form*; that beginning in the vessels, the *Waxy or amyloid form*; and that in which the interstitial tissue is involved, the *Cirrhotic, contracting, or gouty form*. This classification is an improvement of the division into fatty, waxy, and contracting kidney, which Dr Stewart gave in his earliest paper, and it is, in its main features, the same as that followed by Roberts, Dickinson, and other writers.

In addition to these forms, Traube, Virchow, and other distinguished German authors have attached much importance to two albuminuric renal affections; one due to congestion from obstructed circulation, the other to catarrh of the straight tubules. Dr Stewart refers to the description of these conditions given by Rosenstein in his excellent work on diseases of the kidney, but is not disposed to admit them as distinct forms of Bright’s disease.

In treating of the different forms, separate chapters are devoted to the morbid anatomy, clinical history, particular symptoms, complications, causes, and treatment of each.

The first or *inflammatory* form, Dr Stewart divides into three stages,—1st, of inflammation; 2d, fatty transformation; 3d, atrophy. He has omitted the varieties desquamative, acute, and chronic, which he gave in his papers on the subject. We think, however, that Dr Stewart has made too little of the distinction between the acute and chronic forms of this affection. The second stage, of fatty transformation, is that to which Dr Stewart says the term “large fatty kidney” is commonly applied. It is, however, better known as the “large white kidney.” In admitting a small or atrophied kidney as the third stage of his inflammatory form,—i.e., a stage succeeding the large white kidney—Dr Stewart differs from most English authors. This is an important point, on which opposite opinions are still held by various observers.

In his chapter on Treatment, the author advocates diuretics, and mentions, in addition to the more usual remedies, the advantages he has derived from the inhalation of the oil of juniper, as recommended by Sir J. Simpson.

The *waxy* or *amyloid* form of kidney disease is, it is well known, a constitutional and cachectic affection, usually occurring as a consequence of exhausting diseases, scrofula, prolonged suppuration, diseased bones, syphilis, etc. It is usually accompanied by a similar waxy degeneration of the spleen, liver, and intestinal mucous membrane. In the kidney the waxy or amyloid change begins in the bloodvessels and spreads to the tubules and epithelium. Dr Stewart describes three stages. In the first, the organ is of natural size and the vessels alone affected. In the second, the kidney is enlarged in consequence of fibrinous effusion into the tubules. Dr Stewart is of opinion that this transudation of fibrin is facilitated by the waxy condition of the bloodvessels—a view which it is difficult to reconcile with the fact that the calibre of the vessels is dimin-
ished, sometimes nearly to complete obstruction, by the waxy thickening of their walls. In the third stage, the gland is atrophied and granular. Dr Stewart, in common with other recent authors, assumes that the third or atrophied stage is a more advanced condition of the enlarged kidney of the second stage. There are, however, reasons to doubt this sequence. The atrophied kidney with waxy vessels and Malpighian bodies is often met with in cases where the waxy lesion does not affect other organs, and where it is therefore improbable that the waxy affection of the kidney is far advanced. It would be out of place here, however, to discuss fully the relation of the affection of the tubules to the waxy lesion of the vessels.

In regard to the waxy form of Bright's disease, Dr Grainger Stewart has the merit of having directed special attention to the characters of the urine. It had long been known that in certain chronic forms of Bright's disease the quantity of urine is greatly increased, while the specific gravity is lowered. Dr Stewart propounded the opinion that this is a special feature of waxy disease of the kidney, which, according to his observations, is frequently indicated by diuresis before albumen can be detected in the secretion. Polyuria he accordingly regarded as an important diagnostic mark of the waxy or amyloid kidney. Rosenstein, on the other hand, has emphatically denied that the flow of urine is always augmented at the outset of waxy disease. But experience has shown that it is at least a frequent and important symptom, in conjunction with others. It is certain, however, that the increased quantity of urine will not alone serve to distinguish waxy from other affections of the kidney, and especially from the small contracted kidney. On this point, Case 27, of the contracted kidney, recorded by Dr George Balfour, is particularly instructive. Polyuric cases of Bright's disease—i.e., those attended with great excess of urinary secretion—form an interesting class deserving of still further and special study.

The third form, or cirrhotic kidney, is the small contracted kidney of authors, the gouty kidney of Todd. In it, the cortical substance is diminished, and the fibrous tissue hypertrophied. The increase of fibrous element is not regarded as the result of inflammation, but is ascribed to what is now called "fibroid degeneration." Some interesting cases of the affection are described.

In the different forms, the chief symptoms are considered under the three heads of the urine, dropsy, and symptoms connected with the nervous system. The causes and complications are subsequently described, and some interesting statistical data are given in regard to their relative frequency. This arrangement gives much clearness and precision to the descriptions. The treatment recommended for the different forms is, on the whole, sound and judicious.

After describing the three forms of Bright's disease, Dr Stewart adds supplementary chapters of considerable interest. The first treats of the simple fatty degeneration of the kidney, which is not a form of
Bright's disease, although often mistaken for it. The second chapter details instructive cases of acute atrophy of the liver, and describes what Dr Stewart regards as a primary acute atrophy of the kidney similar to the corresponding affection of the liver. The whole of the chapter merits attention. The remarks on the connexion of these lesions with blood-poisoning, and the reference to the obscure case of fatal steatosis of the liver and kidneys recorded by Rokitansky and others, open up considerations of much interest to pathologists and physicians.

The last chapter is devoted to an account of the views entertained by different observers in regard to the nature of the waxy or amyloid degeneration. The account does not profess to be a complete history, and Dr Stewart refers for more details to a work by Dr Pagenstecher, and to an article in this Journal for the present year. Dr Stewart alludes, no doubt, to a passage in the review of Dr Dickinson's work in this Journal, as no special article has been devoted to the subject in these pages. In that review, while giving a general history of the discovery of the waxy lesion, attention was directed to the fact, which is not generally known, that fifteen years ago the principal characters of the waxy degeneration were studied and ascertained in Edinburgh, before the date of the discoveries of Virchow and the Berlin school, and quite independently of them.

After enumerating the various special tissues in which the waxy degeneration has been found (omitting, however, the fibrous), Dr Stewart describes the iodine test, and quotes the well-known chemical analyses of Kekulé and Friedreich, which proved the original opinion to be the correct one, viz., that the waxy material is a nitrogenous substance closely allied to albumen, and is not, as Virchow supposed, similar to starch or cellulose.

Dr Stewart then discusses the question: Is the waxy material the result of an infiltration or deposition from the blood; or is it a true degeneration or metamorphosis of existing tissues? Dr Stewart upholds the latter view that it is a degeneration merely, not derived from the blood at all. But while Dr Stewart adduces arguments in favour of this opinion, we doubt if he has sufficiently weighed the facts which are opposed to it. One chief character of organs affected with the waxy disease is their increase in size, which is often very considerable. It is quite plain that this augmented bulk must depend on the addition of new material. In regard to the kidney, Dr Stewart argues that the new material is not the waxy substance, but a secondary deposit of fibrinous material in the tubules. Even in the kidney, this explanation is not satisfactory; but it totally fails when applied to the liver and spleen. In these organs the hypertrophied parts can be seen to consist of the waxy material, exhibiting its well-known characters of transparency and coloration with iodine. The individual cells even can be seen to be enlarged and swollen by the waxy material. These facts are quite inexplicable by a simple degeneration of tissue.
The author next alludes to Dr Dickinson’s view, that the waxy material consists of dealkalized fibrin, and is almost invariably the consequence of prolonged suppuration in some part of the body. We find that Dr Stewart is opposed to the statement that prolonged suppuration is the most common antecedent of the waxy disease, and, in refutation of it, he adduces the particulars of 18 cases observed by himself. But this number of cases, in a limited field of observation, is, we fear, too small to serve as a foundation for general conclusions.

From the review we have given, our readers will perceive the varied and important nature of the contents of Dr Stewart’s volume. We again commend it to the attention of our readers. It is appropriately dedicated to Professor Christison, under whose influence and example the investigation of Bright’s disease has always been a favourite pursuit with Edinburgh physicians.

Report on Leprosy by the Royal College of Physicians of London. 1867.

Leprosy (Elephantiasis Graecorum), though now almost unknown in Great Britain, is unfortunately a disease widely distributed throughout the whole world, old and new; while in some of the colonies of Great Britain it is largely prevalent; and, according to the official information received from the Governor-in-Chief of the Windward Islands, “this fearful malady is on the increase in these colonies.”

Acting upon the suggestion of the Governor of these islands, the Secretary of State for the Colonies, in May 1862, communicated with the Royal College of Physicians of London, and invited their co-operation and assistance in obtaining and collating reports from the colonies respecting the character and progress of the disease of leprosy. This the College gladly acquiesced in, and appointed a committee to frame a series of interrogatories on the subject, undertaking at the same time to “collate, digest, and report upon whatever information respecting the disease of leprosy in the islands under Governor Walker’s (above referred to) government, or elsewhere, might be submitted to their consideration.” They further suggested to the Colonial Secretary, that “as the disease is known to exist not only in many foreign countries, but also in various British colonies in the East and elsewhere, that it is very desirable that the interrogatories should be sent to all the colonies of the empire.” Accordingly, the Duke of Newcastle, at that time Secretary of State for the Colonies, brought the subject under the notice of the Earl Russell, the Secretary of State for Foreign Affairs, and of Sir Charles Wood, Secretary of State for India, with a request that the interrogatories should be forwarded to Her Majesty’s Consuls in the
East, and to the authorities in India and its dependencies. To these interrogatories upwards of 250 replies have been received from medical men in different parts of the world (more than one-half have come from India), exclusive of those from Her Majesty's Consuls, and of communications from the Governors of British colonies.

After much consideration, the committee deemed it best to frame their Report, upon the voluminous evidence submitted to them, in sections, corresponding with the interrogatories,—presenting, in the first place, an arranged selection of the replies under the successive interrogatories, and then giving, in like succession, the conclusions they have formed on the subject-matter of each interrogatory, from a review of the whole evidence before them.

By the official character which has been given to the inquiry, much valuable and highly important information has thus been communicated, which, without this, could not have been so readily obtained, or placed at the disposal of the Royal College of Physicians. We shall endeavour to put our readers in possession of the main facts regarding this terrible scourge brought out in the Report, as succinctly and clearly as we can, referring those who wish for more detailed information to this masterly Report itself. And, first, as to its

Geographical Distribution.—1. British North America.—The only division where leprosy is known is New Brunswick, and there it appears to be limited to a small part of the province, and to be of comparatively recent origin,—since 1815.

2. British West India Colonies.—In all of these leprosy prevails to a greater or less extent. In Jamaica it has been long known and carefully studied, especially by Dr Fiddes of Kingston, who published in this Journal, for June 1857, a valuable paper on the subject. In Barbadoes, as was to be expected, it has been long known, and it is very common throughout the island. The replies from Honduras and from the Turk's Islands (annexed to the government of Jamaica) state that leprosy is unknown in these dependencies.

3. South America.—In British Guiana leprosy is very common, and has for several years excited much attention; and according to Hirsch, it is met with throughout the whole extent of Guiana—Dutch, French, and British—while in Dutch Guiana it has been recently stated that this malady has decidedly increased.

4. Africa.—At the Cape of Good Hope this affection has been prevalent for long, principally among the Hottentots and half-castes, and has been known from an early period of the colony as a Dutch settlement. In Natal it is stated that it has not been seen. At Sierra Leone it is met with. From the Report, it is doubtful whether it is the true leprosy, which is said to exist in Tangiers; while at Tunis, and in the districts in and around Tripoli and Bengazi, it is positively asserted that the disease is unknown. Over the consular
district of Cairo leprosy is scattered, being most common in Cairo, but even there it is rare.

5. Palestine and Syria.—Jerusalem. Here the disease is confined entirely to the Mohammedans; and all lepers live by begging, laying out before them on the ground vessels, into which the charitable cast their alms. In one part of the city, within and close to the wall, there are some clay-built cottages, not more than a dozen, for the reception of those patients (usually denominated lepers), for whose benefit large endowments have been left by benevolent persons in past times. These dwellings have a mud wall surrounding them on three sides, the fourth side being the wall of the city; and the doors and windows are turned towards the wall. No medical attendance is provided.

In the district of Caïffa—which includes the towns of Tiberias, Safed, and Nazareth—only three cases, all in one family, have been met with for many years past.

In the consular district of Beyrout, with the exception of Cyprus, the disease is all but unknown; and those districts of the island of Cyprus where it prevails most, are all situated in a humid plain.

Damascus.—It is known in this consular district, and is found chiefly among the poorer classes of the mountain peasantry, both Moslems and Christians. It is not known to have attacked the townspeople of Damascus, nor of the other large towns in Syria. The districts most subject to it are the tablelands and highlands, such as the mountains of Lebanon and Anti-Lebanon, and the Haurân, but very rarely on the seacoast. The popular belief in Syria is, that leprosy is caused by the sexual intercourse of the parents during the period of menstruation in the mother. This idea is negatively supported by the fact of the non-appearance of the disease among the Jews of this country, who are most scrupulous in their observance of the Mosaic law of purification. On the other hand, sexual intercourse during the menstrual period, if it occur in the villages, may also occur in the towns, and yet leprosy is not seen in the latter places.

Aleppo.—In the city itself the disease is scarcely ever seen, but it is occasionally met with in the adjacent villages. In Alexandretta, Latakia, and Tripoli, this malady is unknown.

6. Islands in Archipelago.—In Rhodes the disease is chiefly confined to the Greek population. At Smyrna, for the last twenty years, leprosy has been very rare. At Scio it has been known from time immemorial, and is still seen sporadically; it is endemic in Mytilene, and it prevails extensively in Samos. In Crete it has existed for centuries, and at present there are not fewer than 1000 lepers in this island out of a population of 250,000.

In the Ionian Islands leprosy has long existed; but in Corfu it is rare, as it appears principally in villages in the mountainous parts of the island, more rarely in the towns and plains.
7. *Turkey in Europe.*—The only locality in the mainland from which any account of the existence of leprosy has been received is the district of Salonica, on the seacoast of which, and of the adjacent provinces of Thessaly and Macedonia, it is said to be endemic. It is stated to be unknown in Servia and Wallachia; while in and around Constantinople, the disease is seldom met with.

8. *Persia.*—In the north-western province of the kingdom this affection is with certainty known to exist, and it is more than probable that it is common in many other districts.

9. *China.*—Leprosy prevails extensively throughout the Chinese empire, especially in the southern provinces. In and around Canton, and in the neighbouring districts, it is very common. At Shanghae also, and in the vicinity, it is of frequent occurrence. Very few cases are seen at Hong-Kong, but large numbers at Macao, to which island the lepers from the mainland flock, in consequence of the kind treatment they receive from the Portuguese authorities there.

10. *Japan.*—All that can be said about this country is, that leprosy is believed to exist among the inhabitants; but no exact information on the subject has yet been obtained. The same may be said of the large Chinese island of Formosa.

11. *Australia.*—The Chinese have carried this loathsome disease with them into one, if not more, of our Australian colonies. It is chiefly in the gold districts, in and around Ballarat, Castlemaine, and Beechworth, that cases of tubercular leprosy have been met with among the emigrants. It has not been seen in South or West Australia, in Queensland, nor in Tasmania.

12. *New Zealand.*—The committee are of opinion that the disease described by the late Dr Thomson of the 58th Regiment as prevailing among the natives, and styled by them Ngerengere, is a form of true leprosy. It appears to be dying out as civilisation advances.

13. *Mauritius.*—In this island the disease is very common, and occurs among all classes. The elephantine enlargement of the limbs is also met with in Mauritius. In the chain of islands lying between the Cape of Good Hope and Ceylon, including Madagascar, and adjacent islands of St Marie, the French colony of Bourbon or Reunion, and the dependency of Mauritius—the Seychelles group, where there is a leper establishment,—leprosy is remarkably prevalent. For an account of tubercular leprosy in the island of Madagascar, we beg to direct the attention of our readers to a very able paper by Dr Davison, which appeared in this Journal in July 1864.

India continues to be, as it has been for ages, one of the principal seats of leprosy in the world. No province of the empire, from Point de Galle to Peshawur, or from the Indus to the Straits of Malacca, seems to be exempt from the evil; and nowhere certainly might it be more advantageously studied. Hitherto the subject
has excited but little attention, either in a scientific or social point of view.

Ceylon.—Leprosy is not an uncommon affection among the lower orders of the natives. It has been occasionally seen among the Europeans and the burgher classes. The disease appears to be on the increase during the last fifteen years, chiefly, it is stated, from the influx of Malabars into Ceylon. There is a government asylum specially appropriated to the leprous poor, beautifully situated on the banks of a river four miles from Colombo town. The arrangements are said to be excellent, and the inmates are supplied with everything that might contribute to health and comfort, small luxuries indulged in by the natives not being denied them, yet they are a discontented, dissatisfied body, morose, and indulge in drink, and opium or bang.

Bombay Presidency.—Leprosy is well known in this presidency, including Aden, but it is said to be rather uncommon in Scinde. It is certainly common in most parts of the Concan, particularly to the south and east of Bombay. In some villages the proportion of one leper to 80 or 100 total inhabitants is not excessive.

Madras Presidency.—Leprosy is a disease of frequent occurrence throughout this presidency, more especially in all the large towns on the eastern and western coasts, but more particularly in the latter. At stations somewhat inland, though known, it cannot be said to prevail.

Bengal Presidency.—Leprosy is known in the province of Bengal, and generally throughout India, though not so extensively in the upper and midland parts of India as in the lower provinces, and especially in the districts bordering upon the sea. This malady is held in great dread by the Europeans and natives, and the more respectable and alarmed of the former generally have their servants inspected every month by a native doctor, to ascertain if there is any one affected with the disease. Instances are recorded where the disease has been sufficient to disinherit a Mussulman from succession to his property; and among the Eurasians instances have been known of an engagement to marry being broken off, in consequence of its being discovered that one of the parties was afflicted with leprosy.

Etiology.—It has been satisfactorily brought out that, while the better-conditioned classes are far from being exempt from leprosy, the great majority of patients afflicted with this disease are, in all countries, drawn from amongst the lowest and the poorest of the people; and though these cases of leprous disease are most frequently met with in Low and Malarial Districts, especially on or near the seashore, yet this affection is by no means confined to such localities, as it often occurs in inland and hilly districts. With respect to the Dwellings of the sufferers, "they are for the most part, in every country, as miserable and unwholesome as they well can be, while their Personal Uncleanliness is on a par with the filthiness
of their abodes. Ablution of the body seems to be seldom, if ever, thought of, so that the skin is often incrusted with the impurities of years. Their clothing, too, equally foul, is seldom taken off by night or by day, and is kept on as long as it will hold together. The Food of the classes chiefly affected with leprosy is almost invariably described as being poor and innutritious, generally unwholesome, and often quite insufficient in quantity. The frequent or constant use of fish, much salted and often tainted or semi-putrid, is perhaps more frequently referred to as a cause of the disease than any other article of food. The want or deficiency of fresh meat and vegetables in the diet is very generally noticed, while the consumption of rancid oil in large quantities is considered by some to be an aggravating, if not an exciting cause; and in India the use of certain sorts of pulses, especially when in an unsound or damaged state, as they frequently are when eaten by the poor, is widely believed to favour the recurrence of leprous disease."

In Norway, the lepers themselves very generally ascribe their malady to constant exposure in the cold, damp, and wet weather of the Climate, frequent at all seasons, and especially in the long severe winters. If to these conditions we add, remark Drs Danielssen and Boeck, that personal cleanliness is very much neglected among our peasants, we can readily discover causes capable of engendering the disease, where other circumstances favour its occurrence. Such appear to be the chief exciting causes.

Leprosy is very generally considered to be a disease quite unconnected with any other, though in India it is held by some to be related to syphilis; and in Barbadoes, it has been remarked that it shows itself most commonly in the children of syphilitic parents; though this statement would merely go to prove that leprosy selects by preference those of debilitated constitution. By some other observers, scrofula and leprosy are regarded as allied affections.

By far the most serious predisposing cause appears to be the Hereditariness of the disease. On this point there is an almost unanimous concurrence of opinion, though it does also show itself at times in persons in whom no hereditary tendency can be traced. Mr Erasmus Wilson suggests the possibility of the leprosy poison being introduced into the system of otherwise healthy individuals by vaccination, by lactation, and along with the syphilitic poison; as in two cases which came under his observation, leprosy showed itself after vaccination; and in the other, it followed an attack of syphilis, in which latter case it was determined that the source of the syphilitic poison was a leprous woman. This suggestion has not yet been worked out. But so deeply grounded is the belief in the heredity of this disease in the minds of the Punjaubees, that they were in the habit of burying alive not only the leper himself, but also his relations and friends. It does not necessarily follow, however, that the same form of the disease is transmitted from
parent to child, nor that all the members of the family should be afflicted with leprosy; for instances frequently occur where only one child inherits the disease. One generation may be missed over, while the malady shows itself again in the next. In China, it is held that the disease becomes mild in the third generation, and wears itself out in the fourth; while in Norway it has been remarked that it manifests itself in the second and fourth generations with much greater intensity than in the first and third.

As to the Age at which leprosy develops itself, it appears to occur most frequently about puberty; and occasionally, though rarely, signs of the tuberculated form have been seen in the offspring of lepers at or soon after birth. But indeed scarcely any period of life is exempt.

Sex.—The general belief seems to be, that leprosy is more frequent in the male than the female. Others are of opinion that it occurs quite as frequently in the one sex as in the other; and the cause of the apparent excess of male lepers they ascribe to the fact that, in countries where this disease is most common, the women live much more secluded than the men, and are more unwilling to expose themselves when afflicted.

Contagion.—The all but unanimous conviction of the most experienced observers in different parts of the world is quite opposed to the belief that leprosy is contagious, or communicable by proximity or contact with the diseased. The evidence derived from the experience of the attendants in leper asylums is especially conclusive on this point. Thus, Dr Saturnin reports from Trinidad that he has never seen a single instance of the contagiousness of leprosy, though “ulcers with ichorous discharge are dressed several times a day by the surgery man, who has been employed in the leper asylum for twelve years. The washerwoman, who has been there for sixteen years, and handles the clothes of the lepers, and the medical superintendent, delivering women in labour, amputating limbs, and performing other surgical operations, have escaped.” Dr Browne, physician to the lazaretto at Barbadoes, also reports that he has not met with any cases of contagion. “None of those in attendance, during the last nine years, upon the inmates of the lazaretto, have contracted the disease; and I, after receiving a wound from a knife moistened with the fluids of an inmate, have escaped, although the wound was followed by great constitutional irritation and loss of the finger.” And Drs Danielssen and Boeck state that, “among hundreds of lepers whom we have seen daily, not a single instance has occurred of the disease spreading by contagion. We know many married persons, one of whom is leprous, cohabiting for years without the other becoming afflicted. At St George’s Hospital, many of the attendants on the inmates have lived there for more than thirty years, and are quite free from any trace of disease. As the result of our observations, we have only to deny the contagiousness of leprosy.”
The few instances that have been reported in a contrary sense either rest on imperfect observation, or they are recorded with so little attention to the necessary details, as not to affect the above conclusion.

Indeed, so soon convinced were the College of Physicians of the non-contagious nature of this disease, from the nature of the replies they received, that, at a very early period of the inquiry, they were able to assure the Secretary of State for the Colonies that "there was no evidence which, in their opinion, justified any measures for the compulsory segregation of lepers." Supported by this expression of opinion, the Duke of Newcastle forthwith issued a circular to the Governors of the Colonies, intimating his opinion "that any laws affecting the personal liberty of lepers ought to be repealed; and that in the meantime, if they shall not be repealed, any action of the Executive Government in enforcement of them, which is merely authorized and not enjoined by the law, ought to cease."

That leprosy is rarely if ever transmissible by sexual intercourse, when one of the parties has no tendency whatever to the disease, is the opinion of the great majority of the respondents who have had the largest opportunities of observation.

Symptoms.—Two forms of leprosy are most generally described, called, respectively, the "tubercular," and the "anaesthetic" or "non-tubercular" form. But to these two Dr Carter of the Bombay army adds a third form, which he designates "white leprosy, or shvet kusta," probably a variety of the leuke of the Greeks, the baras or beres of the Arabs; it is called khoor by the Sindees. "This form," he says, "is not distinguished as yet by modern writers, but, in my opinion, the distinction of this form of the disease is not only warranted, but necessary." As, however, these forms frequently coexist or succeed one another in the same patient, they must be regarded as modifications of one morbid condition.

I. Tubercular Leprosy.—This is the form of the affection best known in the west, though it is not the commonest in India. It is the elephantiasis, leontiasis, etc., of the Greeks, the lepra of the translators of the Arabian writers. It presents the following characteristic symptoms:—

1. Tumefaction, or tubercular thickening of the skin, principally of the face, also of the extremities; less marked on the trunk.

2. The affected skin is discoloured, dark-bronzed, shining, its sensibility much diminished or entirely lost.

3. The mucous membrane of the mouth and fauces ultimately becomes affected, and the voice altered.

4. Contraction of the fingers and toes is a frequent symptom, and the phalanges may drop off from ulcerated fissures forming over the articulations, or from sphacelation supervening on ulceration; the entire hand or foot may thus be lost. The constitutional disturbance is much greater in this than in the other forms.

II. Anaesthetic Leprosy.—This is the most frequent form in India,
It is styled by the Hindoos guleet-kusta, sunbahiree, and is also known by the name of articular leprosy. Its symptoms are,—

1. Anaesthesia of the skin of the face, ears, and extremities, followed in the latter case by atrophy, interstitial absorption, and occasionally ulceration of the benumbed parts, notably of the fingers and toes, with little or no constitutional disturbance.

2. Large circular superficial ulcers may form on the lower extremities.

3. The affected fingers and toes become contracted, the joints enlarged, the ends of the fingers broad, flat, or clubbed.

Premonitory Symptoms.—Before the appearance of any visible or external symptoms, there is often, for a longer or shorter period, a feeling of general malaise. This is obscurely marked and ill defined, without any uniform or regular course, and is usually indicated by recurrent ague-like chills, occasional feverishness and sense of internal heat; by pains, or creeping pricking sensations or formation, and itching in the limbs; by a numbness in a hand or foot, or in one or more of the fingers or toes, and by general weakness and depression both of mind and body. Sometimes, especially in certain cases of the non-tuberculated form, there is in the early stage of the disease an intense burning sensation, and a painful tingling along the course of one or more of the nerves of the limb, increased by pinching or tapping the skin over the affected part, and sometimes accompanied by a dry fissured state of the skin, falling off of the hair, and shrivelling of the nails.

Prior to the eruption of the elevated, discoloured, and shining spots, characteristic of the tubercular form, there is not unfrequently an erythematous redness of the parts about to be affected—usually the face—attended with a feeling of heat or burning, a puffiness of the features, and increased sensibility of the skin. The duration of these symptoms varies much in different cases before the appearance of the characteristic eruption of cutaneous tubera or nodules.

This hyperaesthesia, Drs Daniellsen and Boeck remark, is sometimes limited to patches of the skin, at other times it affects extensive surfaces, as entire limbs and a great part of the face. It may gradually increase to such a degree, that on the slightest touch the patient experiences an almost electrical shock. Every movement causes pain, as if he were pricked with a thousand pin-points. This extreme sensitiveness may continue for several years; but eventually it gradually diminishes, until it ceases altogether; and then it is succeeded by anaesthesia of the affected parts, and this becomes more and more complete.

Diagnosis.—Leprosy may be defined to be a constitutional, non-contagious, hereditary affection, essentially chronic in its nature, exhibiting itself by certain kinds of cutaneous eruption and discolouration, with a tendency to ulceration or death of the affected parts, and with disorders of enervation, more particularly the impairment or loss of sensibility.
It is for the most part regarded as a disease *sui generis*, quite independent of and unconnected with any other disease. Yet, owing to the fact that the Elephantiasis Arabum (the "Barbadoes" or "Cochin leg") is common in many countries where leprosy is endemic, and that in some places it is frequently found in leprous patients, it has been conjectured by a few observers that the two diseases are allied affections. But they appear to have no real affinity to each other. The circumstance of the two diseases bearing the same generic name (elephantiasis) in medical writings has doubtless contributed to this opinion, which identity of title, according to Mr Wilson, arose in this wise:—"The Barbadoes leg was, from the enormous size to which the limb affected with the disease grows, the discoloration and roughness of the skin, compared by the Arabian physicians to the foot of the elephant, and called daool feel, or dal fil, the elephant disease. The Greeks and Romans, having no knowledge of this disease, in translating the works of the Arabian authors, mistook it for the disease familiar to themselves, and called it Elephantiasis." Leprosy differs from Barbadoes leg in this, that it is a constitutional disease, and is not confined to any particular portion or member of the body, while the latter is a purely local affection, confined to the lower extremities, and enlarges the limb to such an extent that it assumes proportions perfectly "elephantine," while the constitutional disturbance, for the most part, is of minor importance, and no spots or cutaneous anaesthesia are ever present.

With some forms of syphilis, particularly the tubercular affections, the tuberculated form of leprosy has been frequently confounded; and indeed, in their outward characters, they appear to resemble each other very closely. The diagnosis will of course be more difficult when the two morbid states exist in the same patient, as they not unfrequently do in many parts of India and elsewhere. "But," say Drs Danielssen and Boeck, "the error is very serious; for besides the loss of time incurred in the use of inappropriate treatment, the administration of anti-syphilitic medicines is apt to occasion very hurtful consequences, which may speedily lead to the death of the patient."

But the diagnosis will be greatly aided by calling to remembrance the objective characters of syphilis, and more especially its most striking and distinguishing character—viz., the contagious nature of its origin.

The spots indicative of the tuberculous form have been in the early stage mistaken for pityriasis. But this confusion will speedily be cleared up.

Pathology.—The reports of post-mortem examinations made by Dr Carter of Bombay are of great interest, and tend to confirm the general accuracy of the researches of Drs Danielssen and Boeck, who were the first to investigate this field of pathological inquiry, and to whom the profession is so much indebted for the light they
have thrown on the nature and medical history of leprosy. To those of our readers interested in the subject, we commend the perusal of their masterly work, translated by order of the Norwegian Government into French in 1848, and entitled "Traité de la Spédalskhed, ou Eléphantiasis des Grecs." Dr Carter has during the last few years paid special attention to this subject, and has embodied the result of his investigations in an able paper, which will be found in the eighth volume of the Transactions of the Medical and Physical Society of Bombay, new series. It has also appeared as a pamphlet; and for further information on almost every point taken up by the commission, we refer our readers to this monograph.

It is in the morbid changes which the nerves undergo in leprosy that the chief interest centres. "Enlargement and diminished opacity are the fundamental changes which the nerves exhibit. The general cellular investment, the ordinary seat of neuromatous swellings, inflammatory and other formations, is here but little altered; the amount of enlargement varies from just above the normal size (at the seat of the disease, above or below it, the nerve may be smaller than natural) to more than twice that; the colour may be gray, reddish-gray, reddish-brown, or very rarely a dead opaque white; the consistence, of all degrees, from almost flabby to semi-cartilaginous, but generally firmer than natural; marked vascularity is uncommon; adhesions have been found, but only under exceptional circumstances."

"The cutaneous nerves are altered in a similar manner, but are sometimes less rounded and firm."

"These changes do not occur indiscriminately in the course of the nerves, but make their appearance at certain selected spots: for the compound trunks, where they are most superficially placed; for the cutaneous nerves, immediately after they have pierced the deep fascia. In both sets of nerves the terminal branches will be found atrophied and pearly in aspect, being, in well-marked cases, evidently incapable of performing their functions."

"The ulnar and radial nerves in the upper, and the musculo-cutaneous in the lower extremities are oftenest affected; they supply the dorsum and inner side of the hand, and the dorsum of the foot. The branches of the fifth cranial nerve on the face appear to be least frequently affected."

"In the skin the morbid change is limited to the dermoid and subjacent tissues; and it consists in the deposit of a plasma in which granules and nuclei subsequently appear; the nerves, vessels, and appendages of the skin being necessarily implicated, thence result many of the symptoms. This deposit is obviously of the same character as that found in the nerves."

"The bones of the hands and feet become affected only where the nerve trunks of compound function, or those supplying the deeper-seated structures, are diseased. The destructive changes observed
in these consist either in interstitial absorption and atrophy of their substance, or in caries or necrosis of the phalanges, etc.

"The mucous membrane of the nares, fauces, and larynx is swollen, occupied with tubercles, soft, and of a yellowish colour, and often ulcerated. The opening of the larynx is frequently the seat of morbid deposit, so that the rima glottidis is sometimes nearly closed up."

With respect to the condition of the blood in leprous patients, the most marked deviation from the standard of health appears to consist in the excessive quantity it contains of albumen and fibrine. These are precisely the principal elements, more particularly the albumen, which are found in the morbid effusion with which all the pathological alterations characteristic of the disease are connected.

Prognosis.—The evidence is all but unanimous that leprosy very rarely, if ever, manifests any tendency to a spontaneous cure. When fully developed, a complete recovery is not to be looked for. It is quite apparent, however, that the progress of the disease may often experience a marked retardation or arrest when the patient is maintained in a favourable hygienic condition. A remarkable example of at least a temporary recovery is described at length by Dr Fiddes of Jamaica, in this Journal for June 1857. In both forms, the disease sometimes remains stationary for many years, and life is occasionally prolonged to old age; but the arrest of the malady is more frequent in the non-tuberculated form. Lepers do not usually die of leprosy, but most frequently of some intercurrent disease, as diarrhoea or dysentery, or of inflammation of the lungs and air-passages. If lepers should happen to be attacked by the intermittent or remittent fevers of the country, they usually succumb. Disease of the kidneys, attended by albuminuria, seems to be not unfrequent; and in some cases the patient sinks from general marasmus and atrophy.

Upon the question of the cure of leprosy, Drs Danielssen and Boeck remark: — "From our experience and knowledge of the malady, we can declare that the more the disease is developed, the more unfavourable must be the prognosis; nevertheless, far be it from us to say that it is incurable, even in its advanced stage; for we have seen that nature had brought about a cure in several instances where the patients were grievously affected."

Treatment.—There is a unanimous accord of opinion among the reporters to the Royal College of Physicians that the greatest benefit is derived from the adoption of hygienic measures, and that by improving the general conditions, physical and moral, of the leprous poor, very much may be done to retard or arrest the malady in its early stages, and also to mitigate its severity when more fully developed.

Medicinal treatment is universally admitted to be of no avail unless combined with the regular use of a nutritive unstimulating diet, suitable clothing, protection against the vicissitudes of weather,
personal cleanliness, and exercise in the open air. There is certainly no medicinal substance, vegetable or mineral, which exerts anything like a direct or specific effect on the malady.

The medicines which have been found most useful are tonics and alteratives; of these, the preparations of iron and of iodine appear to be generally preferred. Arsenic is also mentioned with favour by some observers, but it seems to be of more doubtful utility. Certain oils, especially the oil of the chaulmoogra odorata and cod-liver oil, are reported to have been given with advantage; also sarsaparilla, mudar (calotropis), and other reputed vegetable alterants.

The free administration of mercury in the treatment of leprosy, and of persons having a leprous diathesis, is liable to be productive of very hurtful consequences. The immoderate use of this drug by the native doctors of India is known to give rise to most disastrous effects.

The systematic use of baths, simple, saline, or sulphuretted, appears to be decidedly beneficial.

Counter-irritation over the spine, by the application of a hot iron, is mentioned as having proved useful in diminishing the anaesthetic symptoms.

In some parts of India the use of animal food is strictly prohibited to lepers, those who indulge in the use of it finding that their disease increases within twenty-four hours, and their sufferings become very great.

A Manual of Elementary Chemistry, Theoretical and Practical. By George Fownes, F.R.S. Tenth edition, revised and corrected. London: Churchill and Sons: 1868.

Chemistry for Students. By Alexander W. Williamson, F.R.S. New edition. Oxford: Clarendon Press: 1868.

Notes on the Metals. By Thomas Wood, Ph.D., F.C.S. London: Longmans: 1868.

Fownes's Manual of Chemistry has always been a favourite textbook, and we are sure all teachers will rejoice to see a new edition ably edited by Dr Bence Jones and Mr Watts, who have spared no pains in making it as complete a guide for students of the present time as the former editions were to their predecessors. In the present edition, the chapter on the General Principles of Chemical Philosophy has been rewritten, so as to present a concise view of the modern atomic theory. We are surprised, however, to find that, although this chapter contains a clear and full account of the theory of "atomicity" or "equivalence," no reference is made to the author of this theory, Professor Kekulé; indeed, throughout the book, re-
ferences seem to have been inserted or omitted in a perfectly arbitrary way. The greater part of the Organic Chemistry has been rewritten and forms an excellent account of the present state of that branch of the science. There are, however, a few omissions and inconsistencies, which are the more to be regretted on account of the generally satisfactory character of this part of the book.

Thus, at p. 570, we find a short and incomplete account of Kekulé's very ingenious theory of the constitution of the aromatic substances, without, however, any reference either to the name of the author, or to any source from which the reader could obtain more complete information on this very important subject. Again, under the head of Diatomic Phenols (p. 657) we find only one compound (pyro-catechin) having the formula C₆H₆O₂, hydrochinone and resorcin being omitted; the former is shortly noticed under Quinic Acid, p. 804, but the latter is altogether passed over. At p. 752 only Cannizzaro's reaction of caustic potash on cyanide of benzyl is given for the preparation of alhatolue acid, the much more productive processes of Möller and Streecker and Crum Brown are not referred to. In pages 859-868 there is a very full and accurate resumé of Baeyer's great research on uric acid, but the only authority referred to is Odlings's Lectures on Animal Chemistry. Sulphur is said to act not only as a dyad, but also as a tetrad and hexad, and the sulphurous and sulphuric compounds are generally formulated in accordance with this most probable view; but in treating of the sulpho-acids (pp. 806, 807) the editors fall into the remarkable inconsistency of representing the sulphuric residue (HSO₃) thus—\[\begin{array}{c}O \\ \| \\ \| \\ \| \\ \| \\ \| \end{array}
\begin{array}{c}s \\ \| \\ \| \\ \| \\ \| \\ \| \end{array}
\begin{array}{c}O \\ \| \\ \| \\ \| \\ \| \\ \| \end{array}—\text{OH}, \text{ instead of }—\text{OH}. \text{ These, however, are trifling defects, and do not detract from the general usefulness of the book, which we cordially recommend to teachers and students.}

Professor Williamson has considerably enlarged and greatly improved his "Chemistry for Students" in the new edition. It still presents the peculiarity of being a systematic statement of elementary facts, with scarcely any theoretical deductions, and will be found a useful text-book by all teachers, especially by those who, though adopting unitary formulae, do not fully sympathise with the modern developments of the atomic theory, and prefer to supply their students with theories of their own.

Dr Wood's "Notes on the Metals" is a little book similar in purpose and character to his "Chemical Notes," which we reviewed shortly some months ago.
Dr Inman has been induced to publish "by the gentle pressure of Dr McGowan," and the desire to have a book to which he could refer in order to convince his patients of the correctness of his own views on hygiene. In the preface he lets us know that he had "begun to be disgusted with the results of composing philosophical medical treatises, and with endeavouring to teach those who refused to learn." The book under review is written for the public, whom he hopes to find a more favourable, if less capable, judge. He expects that this avowal will cause some hostility from many "who profess themselves to be members of a liberal profession." Dr Inman does not allow his medical critics to fire the first shot. Not only does he give plain directions "how to avoid the doctor," i.e., how to avoid disease, but he never loses a chance of taking aim at the Faculty; and not thinking his own wit keen enough, he has translated into English the French and Macaronic Latin of Molifcre. Perhaps the great French dramatist, if he had lived in this age, might have been inclined to adapt his witticisms to the altered range of medical science.

We shall now pass on to consider the work itself; apart from all attacks upon the profession to which Dr Inman belongs; and as we have not the slightest desire to ruffle the mental tranquillity of that gentleman, we advise him to attribute any unfavourable criticism to the desire of retaliating on him for the somewhat excessive vigour of his style. Any favourable remark he ought, on the same principle, to attribute to the overpowering cleverness of his work.

His chapter on Married Life contains some useful pieces of information, which married people at least might read with benefit. It would perhaps be better if the author had been content with the very thorough manner in which he has said in this chapter what was perhaps no more than necessary, and not have taken the trouble to repeat indelicate allusions and remarks in other parts of the book.

The author's Dietetic and Hygienic Rules are of a highly jovial character. He asserts that an animal diet, weight for weight, imparts more than double the support to life yielded by a vegetable one. This is assuming that concentrated food is the best, and is, besides, in contradiction with the calculations of organic chemistry. Dr Inman believes what he has read, of a Frenchman living on pulse in vain attempting the work of an English "navvy," till he indulged "in meat and solids;" hence he concludes that a vegetable diet "encourages fatness" (certainly not in Frenchmen), "gives adequate strength and agility, but does not impart endurance" (p. 14); yet at p. 26 he informs us that, in reading accounts which tell of endurance of prolonged fatigue, he has been much struck with the almost unanimous
evidence in favour of vegetable diet, and tea as a beverage. Did Dr Inman never hear of Scotch hinds living mainly on porridge and wheaten or pease-meal cakes, who can work as hard as any English "navvy"? It is quite true that the average power of French labourers is inferior to that of English and Scotch; but it is not true that any alteration in diet will make the Frenchman fit to do the work of the Briton. By the way, French labourers live principally on bread, not upon pulse.

The Doctor shows little favour to the teetotallers. The Son of Man, he observes, "came eating and drinking, and was called a wine-bibber, the friend of publicans and sinners. What He bore his followers may do." He thinks whisky, whether Scotch or Irish, the most innocuous of all the spirits. According to Dr E. Smith, this distinction rightly belongs to rum, which increases instead of diminishing the respiratory process.

Dr Inman's rule is to allow people to eat whatever they like best, and to drink what seems best to him or her, irrespective of the opinions of others. He quotes, with apparent approval, the experience of a life-insurance director, who had two friends—one of whom never drank anything stronger than tea, and died at seventy-eight; whereas another, who went to bed drunk every night, lived a year longer.

The value of exercise, Dr Inman thinks, has been much exaggerated. He remarks, "Quiescence as complete as is involved by palsy is not incompatible with perfect health, good appetite, and digestion, clear head, and longevity." It strikes us, that if Dr Inman was more disposed to generalize, and avoided laying too much stress upon such extreme cases, he would be a much safer adviser to the public, for whom he writes. Say what he may, many people eat and drink what is very injurious to them; and it is often exceedingly difficult for medical men to convince them, that though such indulgence is not at once followed by some startling fit of illness, they are laying the foundation of very serious diseases.

Dr Inman is disposed very much to restrict the use of baths, which he thinks are too apt to wash away the oily substance secreted by the cutaneous glands; and enters into an argument much too scientific for the public, to whom he appeals, to prove that purgatives weaken the peristaltic power of the intestines, deprive them of the protective covering of mucus, and notably diminish the secretion of bile. This remark he makes to apply to calomel as well as to other aperients. He sets seriously to work to demolish the old proverb, that "cleanliness is next to godliness." The ancient Romans were fond of bathing; but they were not "a healthy lot." Dr Inman examined the ancient tombs about Rome, and found that the oldest age recorded was fifty-six, and the majority died ere they had reached thirty. In modern Rome, on the contrary, where the inhabitants have the good sense to abstain from washing, he tells us longevity is common, and the average duration of life little less
than in England. We are as little disposed to believe this, as the assertion that the Swiss die off in comparatively early life. We recently read an article in the *Revue des Deux Mondes*, in which the author advances that the Swiss are the most long-lived nation in Europe. "In India," says Dr Inman, "where washing and bathing are almost incessant, we see a mass of vice which is to the full as great as that which is common amongst ourselves." He asserts that some monkish orders who abuse the use of water externally are generally healthy; "nor is it to be wondered at," says our author, "for the pig, who seems to revel in filth, is to the full as healthy and vigorous as the fine lady who devotes an hour a day to her ablutions." We believe that there is little need for adding any comments to writing such as this.

The chapter on Change of Air, and the Infant just arrived and its Management, are the best in the book. The latter is especially good. The author, who gives us a good deal of his private history and personal experience, has had the misfortune to lose the half of his children in infancy; and perhaps this saddening experience has subdued both the over-rapidity of his thoughts and the recklessness of his style. The only mistake we have noticed is, that the best substitute for the mother's milk is one part of cream, two or three parts of water, and a little sugar. It is unnecessary to tell our medical readers that cream is but the oleaginous parts of the milk separated from the casein, and that cream alone is totally insufficient to afford due nourishment to any living creature. We have seen children in the last stage of inanition from adopting this unhappy advice; and if they live at all on such a diet, it must be with the help of the proportion of milk which has escaped separation from the cream.

The chapter on Old Age is also deserving of commendation; and Dr Inman's remarks, that colds are oftener produced by passing rapidly from cold to hot air, than from hot to cold air, are worthy of consideration. We have no doubt that people who prefer warm clothing to fires, are much less liable to catch colds.

We have said enough to give an idea of the character of this work, which enters into all the relations and changes of life, from infancy to old age. The author's style is extremely forcible, though somewhat careless; his illustrations are often remarkably good; and we have ascertained, by several trials, that his book is interesting to non-medical readers. Viewed as a literary production, it is deserving of praise; but we cannot think the author wise in calling in the public as a fit judge and arbiter of so many disputed points, where Dr Inman takes one side and the great majority of the profession another. No amount of sagacity and empirical observation can make up for the want of a preliminary training in biology and therapeutics.
Injuries and Diseases of the Jaws. The Jacksonian Prize Essay of the Royal College of Surgeons of England, 1867. By Christopher Heath, F.R.C.S., Assistant Surgeon to University College Hospital, and Teacher of Operative Surgery in University College, London. With numerous Wood Engravings. John Churchill and Sons: London: 1868.

This large and handsome volume is another of the series of excellent monographs which have been called into existence by the stimulus of the Jacksonian Prize, and will be found one of the most interesting and instructive of the series.

The exact subject offered for competition was described in the following sentence: "The Injuries and Diseases of the Jaws, including those of the Antrum, with the treatment by Operations or otherwise." In the twenty-eight chapters into which the work is divided, Mr Heath has gone very fully into detail, and seems to have omitted no subject of importance.

The question being a thoroughly practical one, the answer is likewise practical, avoiding nothing which could bear either on diagnosis or treatment, yet mentioning merely incidentally the many interesting anatomical and developmental questions which relate to the study of the jaws.

The first six chapters are devoted to the subject of Injuries of the Jaws, chiefly Fracture and Dislocation. In endeavouring to determine the usual seat of fracture, Mr Heath has examined the preparations of such injuries preserved in the various London Museums. These in all amount to little more than a dozen, and show such various seats of fracture as not to settle the question of position.

We agree with Mr Heath that the most common position met with in practice is in the neighbourhood of the canine tooth, and backwards as far as the mental foramen.

There are two good specimens in the Museum of the Royal College of Surgeons of Edinburgh. In one the fracture is recent and a double one; one extending obliquely downwards and backwards half an inch behind the left mental foramen—the other nearly perpendicular, separating the right central incisor from the outer incisor. In the other preparation the fracture—extending from the symphysis to the left bicuspids—had evidently taken place many years before death, and repair has been fibrous, after great loss of substance.

Mr Heath gives a very full and clear account of the various plans of treatment for complicated fractures. The only criticism we would make is, that while now and then a case may be found which, from its complexity, may require all the skill of the dental mechanician to treat it, the general rule is, that in fractures of the jaw as in most other things, the simpler and more ready means are also the most satisfactory.

On dislocation of the jaw, though there really remains little new
to be written, either on diagnosis or treatment, Mr Heath makes some excellent observations, and has collected some good and recent cases.

The next two chapters are devoted to Inflammation of the Jaws and their Periosteum, and their results in Necrosis. Mr Heath devotes a page or two to that interesting and by no means rare form, which Mr Salter has called Exanthematous Necrosis, also to the mercurial, syphilitic, and "phosphorus" forms of necrosis. In the mercurial cases, it has often been noticed that it sometimes occurs after the administration of a very small dose of the drug. The writer lately removed nearly the whole alveolar portion of the jaw in a healthy female, in whose case the only explanation was that her son, a druggist's apprentice, had given her two blue pills as a purgative, which had caused profuse salivation.

The chapter on the subject of Cystic Disease of the Antrum is very instructive and fully illustrated. The practical lesson to be learned from its frequency is, that in a case where the slightest doubt exists as to the nature of the tumour, the antrum should be punctured as a preliminary step to the more thorough operation of extirpation of the upper jaw.

Cysts of Teeth and Dentigerous Cysts form the subject of the next chapter. Cysts of teeth are those connected with the roots of permanent and fully developed teeth. These vary much in size—some, as Mr Heath has figured, being little larger than peas, others becoming so large as to fill up the antrum. Dentigerous cysts are in connexion with undeveloped teeth, which from some cause have remained within the jaw. Numerous cases of this condition are given, including one curious one in which an inverted crown of the third molar was found lodged between the expanded fangs of the second molar, the two being united by dentine and having one common pulp cavity. Mr Heath gives some excellent woodcuts illustrating the pathology and diagnosis of these cysts.

He does not touch upon the wider subject of dentigerous cysts in other parts of the body—such as the ovaries and the posterior mediastinum, but wisely confines himself to the dentigerous cysts of the jaws.

Cysts in the lower jaws, unconnected with retained teeth, are next described. These are not uncommon. If single, a free evacuation, aided by removal of some of the inner wall from within the mouth, proves sufficient to effect a cure; but if multiple, and specially if small secondary cysts grow from the cyst-walls, nothing short of excision of the portion of bone affected will be sufficient.

The next chapter, on Diseases of the Gums, includes the important subject of Epulis. Mr Heath rightly insists upon the absolute necessity of not only removing the whole of the morbid growths, but also the periosteum from which it grew; and that this may be thorough, also a scale of alveolar process below. But, with equal pathological accuracy, he shows how it is never necessary, even in
the case of tumours of very large size, to remove the whole thickness of the lower jaw, as the epulis never rises from, even though it may apparently overlap, the base of the bone.

The subject of Tumours of the Upper Jaw is then discussed in the next four chapters, under the various heads of Fibrous, Fibro-cellular, and Recurrent Fibroid; Myeloid and Vascular; Cartilaginous and Osseous; and Cancerous. The microscopic appearances and pathological relations of each are carefully given, and then the whole compared and contrasted as regards diagnosis and treatment.

A case of recurrent cartilaginous tumour lately under Mr Heath's care, presents many features of interest, and deserves quotation. The patient, a man aged 34, came under Mr Heath's care in January 1868. His history we abridge. In 1851, Mr Le Gros Clark had removed a tumour as large as a walnut from the right side of his nose. In 1852, Mr Partridge removed another osteo-cartilaginous tumour as large as a large walnut, which involved the nasal process of the upper jaw. In 1860, Professor Gunn of Michigan removed another tumour, including the right upper jaw. A portion of tumour was left at inner side of orbit. This soon returned; the tumour grew rapidly. On admission, his condition was as follows:

"The patient's appearance on admission was most unsightly, the right side of the face being greatly disfigured by a large tumour, by which the eye was thrust completely aside, but without loss of vision. Immediately to the inner side of the eye was one open granulating sore of the size of a florin, the result of the incision for the evacuation of matter already referred to. The tumour appeared externally to consist of two portions, separated by a horizontal sulcus, at the bottom of which the fistulous opening resulting from the second operation was still visible. The upper and more prominent portion had invaded the orbit, reaching to its upper border, and extending beyond the middle line of the nose. A small portion of this had, within the previous two months, projected through the left nasal bone. The lower portion of the tumour involved the ala of the nose and adjacent portion of the cheek, both of which were much distorted; on a small projecting portion of this the skin was adherent. Both nostrils were completely blocked, and had been so for months. Within the mouth it was seen that the whole of the right side of the hard palate had been removed; and in its place there was a smooth, red, oval mass, coming down to the level of the teeth of the opposite side. The scars in the middle line of the lip and on the cheek, resulting from former operations, were still visible. The tumour was solid and not tender to the touch, the most prominent point being apparently osseous. There was no enlargement of the glands in the neck or elsewhere, and the man appeared in good health. The tumour had made decided progress within the previous few months, and he was anxious to have it removed; to which, after a consultation with my colleagues, I agreed."

"On January 8, under chloroform, I made a curved incision
below the eye to the side of the nose, from the extremity of which a vertical incision was carried down the face and round the ala of the nose; and the lip was divided in the cicatrix of a former operation. The flap was then dissected back, and with it a hard prominent nodule of bone, which became detached from the bulk of the tumour. The tumour being thus exposed, I proceeded to enucleate it with the fingers, and by successive efforts removed in this way the upper part of the growth. The portion projecting into the mouth was found to be held by a firm band of tissue in the position of the gum; and after dividing this, I was able to tear out the growth, and also a portion projecting through the posterior nares into the pharynx. The wound having been well sponged out, and haemorrhage having abated, the portion at the inner side of the orbit was removed, and was found to project into the frontal sinuses, which (particularly the right) were considerably expanded. With one of Langenbeck's palate spatulae, I carefully cleared these out, scraping the walls, and then introduced a pledget of lint, covered with a paste of chloride of zinc (to which a string was attached), in order to destroy any remaining portion. This was the only part from which the growth appeared to have arisen, the remainder of the huge cavity left by the removal of the growth being smooth and healthy. The septum narium was found to be completely pushed over to the left, and to have been destroyed at the upper part by a projecting lobule of the growth which had pushed through the nasal bone. The ala of the nose included a small portion of the growth, which was removed, and also the bony nodule attached to the flap, the upper corner of which, being very thin and closely involved in the growth, was cut off. The wound was sponged out with solution of chloride of zinc, and, all haemorrhage having ceased without the application of any ligatures, the lip was brought together with hare-lip pins, and the remainder of the wound with wire sutures. The edges of the gap caused by the opening of an abscess some months back were brought together; but finding that this prevented the patient closing his eye, I subsequently removed these sutures. Collodion was painted over the wound, and the patient, who had a good pulse, was carried to bed.”—Pp. 238–240.

The patient made an excellent recovery, being able to walk about the ward in a fortnight. Unfortunately, however, when taking a walk more than three weeks after the operation, he caught cold in a bitter east wind, took erysipelas, and eventually died about six weeks after the operation, thus depriving Mr Heath of the pleasure of seeing the results of his very bold and ably-considered operation.

In giving the history of the operation of excision of the upper jaw, Mr Heath has followed Butcher's laborious investigation, and has fallen into the same mistake that he did with regard to the operator who first removed the upper jaw in this country. The real dates are as follows:—

Lizars proposed the operation in 1826; Gensoul of Lyons, per-
formed it with success in May 1827; Lizars attempted it, but failed, from the hemorrhage being so excessive, notwithstanding ligature of the carotid, in December 1827; Syme removed it with success, the patient having recovered, in May 1829; Lizars removed it entirely, the patient dying on the nineteenth day, in August 1829; Lizars removed it successfully in 1830.

Tumours of the lower jaw are then described under the same heads as those of the upper. The description is enriched with accounts and diagrams of many remarkable historical cases from Syme, Fergusson, Crampton, Liston, including the author's very interesting one, now in the College of Surgeons' Museum.

The two chapters on Closure of the Jaws and Deformities of the Jaws, include much information on an interesting and little known subject. Mr Heath's own experience is here again very instructive.

An appendix of cases (thirty-two in number) which have been under the care of the author or his friends, or which are classical, is subjoined in illustration of many of the opinions given in the text, and is an important addition to the value of the work.

Mr Heath's name, already so well known, will gain fresh credit from this excellent book, and the school which has so lately been fortunate enough to obtain his services need not fear for her surgical fame in the future, even when she remembers the great operators of the past.

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Clinical Lectures and Reports. By the Medical and Surgical Staff of the London Hospital. Vol. IV.—1867-8. London: John Churchill and Sons.

This volume, from the staff of the London Hospital, forms another valuable contribution to the science of Medicine and Surgery, and reflects much credit on those connected with that famous school. The editors are Drs Clark and Down, and Messrs Hutchinson and Maunder, and in the performance of their duties they have exercised a wise discrimination. Almost every paper selected for publication is of great practical usefulness; and the physician, the surgeon, the accoucheur, the anatomist, and the physiologist, will each find something to interest him in his own special department.

A paper on Lumbar Colotomy by Mr Curling is the first on the list. Four cases are recorded, in which, on account of disease of the rectum, recourse was had to the formation of an artificial anus. This operation, he thinks, is justified by the great relief from pain which follows in cases of cancer of the rectum, and, in some instances, life may even be prolonged by it.

Next in order are four elaborate lectures by Mr Hutchinson on Compression of the Brain, in which the causes, symptoms, and diagnosis are minutely commented upon. There is also a case of Stricture of the ÖEsophagus after swallowing caustic potash, and a short
note of a curious case in which incontinence of urine was the first and almost the only symptom of prostatic retention, with secondary disease of the kidneys, both by the same author. But the most interesting of Mr Hutchinson's numerous communications are two papers on the Study and Treatment of Skin Diseases. They are clear, concise, and practical, and afford, in a very few sentences, a large amount of valuable information on the subject. His lectures on the Ophthalmoscope give all necessary information regarding the use of that instrument.

Mr Maunder contributes no fewer than five papers on surgical topics; his Notes on Operative and Clinical Surgery including many of the principal operations—such as, colotomy, lithotomy, herniotomy, amputation, and the excision of joints.

Dr Meynott Tidy's paper on Human Milk is well worthy of perusal. Strange to say, Dr Tidy has failed to find any trace in the milk of medicinal agents administered to the mother. He has given full doses of iodide of potassium, ferrocyanide of potassium, sulphate of magnesia, and chloride of mercury, but in no case could he find the slightest trace of these salts in the milk.

Hoarseness and Loss of Voice, in relation to nervo-muscular affections of the larynx, forms the subject of an admirable chapter by Dr Morell Mackenzie, which is illustrated by drawings and clinical cases.

Mr Little, Mr Carter, Mr Couper, Mr Waren Tay, and Mr Debenham, furnish papers on various surgical subjects.

Dr Hughlings-Jackson, so well known from his researches in diseases of the nervous system, records the particulars of thirty cases which are intended to illustrate papers on the Physiology of Language, Optic Neuritis, Cerebral Haemorrhage, and Syphilitic Affections of the Nervous System, which the author intends to publish in the next volume of these Reports.

The number of cases on record of paracentesis of the gravid uterus is so small, that accoucheurs and all interested in the diseases of females will read with much interest Dr Head's important case of Irreducible Retroversion of the Womb, in which this operation was resorted to with a successful result. The puncture in this case was made through the rectum, and about twelve ounces of liquor amnii were evacuated. The only other paper we shall notice is by Dr Sutton on the Morbid Anatomy of Cholera as observed at the London Hospital during the epidemic of 1866. The records of fifty post-mortem examinations are detailed, and numerous very valuable facts are given as to the condition after death of the internal organs.

As usual, the volume concludes with a carefully prepared statistical account of the major operations performed in the Hospital during the year.

The work is embellished by numerous well-executed drawings; and, like most of the books which the Messrs Churchill send out, it is very handsomely got up.