Lancet, July 24, 1852

seizing it with facility. This does not occur now. The curved lithotrite easily seizes flat calculi; and, unless they are very hard, the action of the screw or pinion crushes them with equal facility.

I have thus described to you, gentlemen, the principal obstacles which may render the manual part of the operation of lithotrity more or less difficult in its execution. Let us next turn to the accidents.

(To be continued.)

The Lumleian Lectures,

Delivered at the Royal College of Physicians for the Session 1852,

By JAMES ALDERSON, M.D., F.R.S.

ON THE EFFECTS OF LEAD UPON THE SYSTEM.

Remarks on the state of science. Hydropathy—Homœopathy—Mesmerism. Valuable fruits of science. Ozone. Epidemics. Quarantine. History of lead-disease. Citois; Sir George Baker; Hippocrates; Nicander; Dioscorides; Pliny; Paulus Ægineta; Avicenna and Rhazes. Use of lead among the ancients. Vitruvius; Horace; Celsus. Forms of the disease.

I HOPE it will not be thought out of place to preface the subject which is to occupy us during the present and the two following lectures by a few passing allusions, embracing some of the prominent features of medical science as it exists in our times. I propose afterwards to sketch the history of the subject on which we are to treat, and to describe the symptoms and the exciting causes of one form of the disease—viz. Lead Colic—reserving for the two following lectures the History of Paralysis, the General Pathology of the Disease, and other topics connected with the subject.

It is no new remark, that ever since opinions have been recorded, a generation has scarcely passed without a prevalent idea that times so portentous had never yet been known. Whether the expectation of something surpassing former experience related to political changes, to a discovery of the yet hidden laws of nature, to some suddenly-to-be-developed source of wealth, or to the immediately-approaching end of all things, some such belief has ever been upheld, and has kept inquiring minds strung to the highest pitch of hopeful excitement. This propensity, often delusive, but powerfully incentive both to action and to laborious study, is natural to a being like man, who feels that the range of intellectual power has not yet reached its utmost limit—who can retrace the successive bounds which have marked its continually widening span—who feels that from every point of pure truth, once attained, fresh vigour, as well as fresh aid, is gained for further efforts—and who also at every point obtains a view of vaster objects to encompass. Whether it may owe its origin to a weak point in the moral constitution, inclining generations, like individuals, to delight in believing themselves distinguished,—or whether it may spring more rationally from the inference, that as intellectual progress, like mechanical power, proceeds at a continually increasing ratio, so, from accumulated knowledge, some unimagined revelations may constantly be expected,—still it has its use, and could we repress it wholly, we should scarcely be inclined to do so. We have no wish, therefore, to deny that this characteristic of former ages is as prominently marked at the present period, if not more so than it ever has been yet.

It is not now my province to trace the evidence of this beyond the field of philosophy, but there we may observe it in excess, bearing, also, many of the features which have been prominent in times of greatest note: we have the same craving after marvels, and the same hasty acceptation of improved novelties: among the genuine seekers after truth, we have still the same feverish anxiety for new results, almost changing the calm demeanour of legitimate study into the likeness of an alchemist seeking for the philosopher's stone or the elixir vitæ; and amongst the deluded or wilfully deceived we have the same wild statements of discoveries bordering on the miraculous.

This latter class—these false philosophers, however, though they appear to stand forth as an unprecedented feature of the age, exemplify this love of novelty only in the meretricious style in which their systems are re-dressed up for modern taste; in themselves, they are but reproduced fallacies, with which the foreground of every picture of the state of science in bygone times has been disfigured.

Preissnitz has only been a modern Musa, who has also fallen on the not very foolish thought, that patients enervated by stimulants and heating treatment might possibly find benefit in cold. His reward has scarcely reached his prototype's—if we contrast the profits of a Wasser-Cur with the statue, the ring, and the equestrian order of Augustus. Preissnitz, however, may have been quite as fully satisfied with his less dignified incomings; and we leave his memory and his so-called system with more willingness in repose, since he has but lately fallen a sacrifice to perseverance in his own delusions; whether a victim to faith in himself, or to the obstinate maintenance of a show of consistency, is scarcely worth our while to inquire.

The prototype of homœopathy is to be found, *though more obscurely*, in the ancient doctrine of signatures. The old absurdity of the red bed for scarlet fever is reproduced in the application of drugs calculated to excite the very symptoms which are to be removed, and the invention for modern wonderment is added in the so many millioneth subdivision of the remedy, thus endeavouring to make the jargon of a system popular by an almost comic outrage on common sense. The subject claims but an infinitesimal application of sober criticism, and, like the last-named practice, reminds us too much of the vendors from the booths to require further notice.

The monster delusion of the century, however, may detain us somewhat longer. It, too, has not sprung to life in our generation, though it has equally received the stamp which marks the time in which it flourishes, in having had its marvels multiplied by engrafting it upon another so-called science, resuscitated for the purpose from fast-approaching oblivion.

The amalgamation has, as might be supposed, made but a motley figure of the two absurdities; the mesmerizing system came with pretensions to a power actually superhuman, which, applied by instruments the most puerile, was sufficient to remodel the physical condition of man, and overturn his whole moral state. We have been told that a few starings or grimaces, or holding of another human being's thumbs, was enough to cause the spirit "to shuffle off its mortal coil," and endue a creature with a sort of omnipresence and omniscience. We start at all this pure essential spirituality, and are then presented with a strange contradiction in the assertion that the recipient of these marvellous powers remains still prostrated beneath the mesmerizer's will, and that the functions both of mind and sense, which can be exercised without their proper organs, may still be excited and directed by his touch upon certain imaginary organs in the brain, mapped out upon the skull. There is excuse enough in the face of these absurdities to release us from the weary task of trying to disengage the few grains of truth from the mountain of nonsense which composes this so-called science, especially as one of the earlier features of its history is repeated and brought forward in a form most whimsical at the present moment. Each professor in his turn has accused his predecessor of imposture. Mesmer denounced Hell, and D'Eslon, Mesmer; and the electro-biologist now in his nightly exhibition defies all the world to prove that his philosophy is connected in the most remote degree with that of the mesmerists. After the often-repeated investigations, and as many confutations, by really learned and impartial men, it is hard to be continually appealed to, as we are, to bestow time which might be far more usefully employed than in sifting the tricky evidence. I conceive that the same test which was given us to distinguish between true and false prophets may without impropriety be applied to discriminate between true and false philosophers: "You may know them by their fruits." Tried by this rule, we shall find that while our men of real science have bestowed on this generation two benefits which are actual blessings to society,—that while the natural revulsion of the frame under surgical assistance is altogether spared, and while most distant friends have gained the consolation of immediate communication—we may search in vain for one single well-attested practical benefit from the inventors of this system, who claim a mysterious control over the most subtle and potent agencies. It is pleasant to pass from these "speciosa miracula" of empiricism to glance at the practical advantages which we are daily deriving from the advance of science in the legitimate path of sound induction.

Even in this honoured course, a tendency to the same excited mode of study is observable, and may be traced in the frequent and hurried announcements of new discoveries, especially among the chemists, followed by as rapid abandonment of the new positions. In our own profession, the same excitement is displayed in the eagerness to discard older theories, and seek for the elucidation of all diseases in the state of some particular organs, thus referring to individual

parts the governing influence over the general system. The bearing of this latter subject is worthy of deeper reflection than the present time permits me to bestow. I shall rather occupy a few moments in referring to some points in which general philosophy and medical science are working unitedly with the most flattering prospects.

Inquiries have been extended, by which we already possess new results scarcely exceeded in importance by those two discoveries just alluded to, although these latter appear to bear a striking pre-eminence from the practical uses to which they have been so promptly adapted. The microscopists have infused fresh vigour into our physiological as well as pathological researches, and have already disclosed many mysteries of nature, whilst the field of future discovery appears to be almost unlimited. Chemistry has not only displayed to us some new properties of magnetic power, and, under Faraday's researches, shown that we are absolutely surrounded by the influence, and that (I quote his words) "oxygen is in the air what iron is in the earth;" but it has also opened out a discovery which affords hope of elucidating one of the most difficult subjects of medical philosophy. Schönbein's experiments, showing that a compensating substance exists in the atmosphere, capable of destroying the oxidible miasmatic bodies thrown into it by putrefying organic matter, is a subject of the highest interest, of which we can hardly yet estimate the full value, as bearing on the much-vexed question of the propagation of epidemic disease.

Having shown that electricity so changes the elements which result from the decomposition of organic compounds, that the presence or very existence of these elements becomes no longer cognizable by the senses, he refers this ascertained fact to a certain allotropic modification of the atmosphere—supposing, that, by the agency of electricity, the same results are worked out on a larger scale which we arrive at when we disinfect small volumes of air containing miasmata with chlorine fumigations. This so-called allotropic change was first supposed by Schönbein to arise from the generation of a peroxide of hydrogen, a substance which was discovered by Thenard as long ago as 1818, and was noticed by our President in his "Medical Chemistry," in 1826. In this highly philosophical work, we find the subject, in a passing manner, handled in a style which seems almost prophetic of the present discovery; and Gregory, in his recent work on Chemistry, of 1847, treating on this subject, has adopted the very words of Dr. Paris. The supposition that the change was referable to the presence of the per- or bin-oxide of hydrogen, (a substance which is wholly without odour,) has been abandoned, and Schönbein, as well as others, hold that the phenomenon consists in chemically excited oxygen; but, whether the final cause be yet sufficiently brought to light or not, the ascertained existence of the change is enough for our present purpose.

The old and popular impression, that thunderstorms have a purifying effect on the atmosphere, obtains now a scientific confirmation; and we are, at the same time, in a position to hope that the subject, further developed, may lead to the disclosure of the connexion between animal and physical agencies. Experience in the use of the telegraph has taught us the value of water as a connecting link to complete the circuit in the galvanic battery; and this fact appears to me to suggest the hypothesis, that a state of atmosphere may exist along the course of rivers, and even in tracts across the ocean itself, favourable to the development of epidemic disease, that development being the consequence of a deficiency in the peculiar modification which is necessary to render it harmless. Should this suggestion be found tenable, and be hereafter supported by statistical observation, the result would afford us better data than we have ever yet possessed, on which to form a conclusion as to the value or expediency of quarantine regulations. The quarantine system has hitherto been supported in the face of conflicting evidence, because, in the obscurity of our knowledge of the relations between physical and animal agencies, men have not dared to relax a caution, the advantages of which could not be disproved, but which has been manifestly inadequate to the purpose for which it was contrived. Could the acknowledged evils, both personal and commercial, be conscientiously remitted, in consequence of clearer views as to the propagation of disease, the assistance thus rendered by chemical science would count among the brightest triumphs of true philosophy.

While hastily recurring to subjects such as these, we feel it is impossible not to perceive that our times abound, if not in greater intellectual fruition, yet at least in prospects such as have no earlier parallel; and feeling so, we cease to wonder at the anxious eagerness with which inquiry is pursued. There is a point of view, however, in which the eager mode of pursuing the investigations which we have noticed as a characteristic of the age, has a salutary as well as an exciting tendency. Intervals occur when there is a natural recoil from overstrained curiosity to a state when more sober mental exercise becomes at once enjoyment and relief. This is a period favourable to the growth of true practical wisdom, since it affords leisure for the dispassionate review of accumulated facts, and for a calm inquiry into the alliance between truth and nature. Though we may all be captivated by the brilliant realities of general science, I feel sure, that to leave this discursive introduction, and commence our immediate subject, will not be unacceptable. And let me hope that the observations which I have prepared, with the best industry I could bestow, may not be devoid of that practical utility which it is the especial province of this learned corporation to seek and to promote.

The subject of colic and paralysis the result of the absorption of lead, commends itself to the notice of this assembly by the same peculiarities which have deterred the great body of medical practitioners from bestowing much time and attention upon it—it is, in one form at least, a disease almost exclusively confined to the labouring class, and therefore a fit subject for the benevolent consideration of those who are the true guardians of the public health, and especially of the health of that part of the public who need the protection which they have not the power of obtaining for themselves.

Colica pictonum, considered as a disease depending on the absorption of lead dissolved in cider, was first brought before the medical profession in this country in the year 1767. In that year, Sir George Baker, a physician of great talent and celebrity, read an essay before the College of Physicians on the cause of the endemic colic of Devonshire. The disease had been previously noticed in the same locality by Drs. Musgrave and Huxham, but without suspicion of its real origin—nay, even Citois, from whose accurate observation of the symptoms in the wine district of Poictou, the malady derived the name whereby it is still known, deemed it only the effect of the unripe, austere wines of the province.

To Sir George Baker belongs not only the credit of accurate and persevering research in tracing the disease to its source, but the higher honour of having called in the force of public opinion effectually to remedy the evil which he had exposed. We, too, may be encouraged in a kindred research by remembering how many forms of the same disease are yet rife amongst us, the prevention of which, by well-arranged sanitary measures, may be found as certainly practicable as their cure is difficult and precarious. Considering the various forms in which lead is a deleterious agent, we could have no doubt, *à priori*, that some of its effects would have been noticed by the ancients, and we find, accordingly, allusions to the poisonous action of lead in various classical and semi-classical writers. Yet, after inspecting all, or nearly all, the passages of ancient authors which can be brought to bear on the subject, I have found but few deserving of particular notice.

Hippocrates has but some cursory remarks, which rather include than specify the particular effects of lead. Nicander,* however, who wrote nearly a hundred years before the Christian era, in a didactic poem on poisons and their antidotes, notes several peculiar symptoms produced by the action of litharge—constipation, flatulence, suppressed secretions, griping pains, burning heat in the limbs, and, finally, a livid paleness of complexion, which he fancifully compares to the dull hue of lead. Again, in describing the action of ceruse, he alludes to these further symptoms—adhesion of opaque white mucus to the gums and cheeks, and inability to move the limbs. Dioscorides,† who flourished about the middle of the first century (A. C.), writes nearly to the same purpose; but the terseness of his prose deserves a literal translation: "The drinking of litharge causes oppression to the stomach, belly, and intestines, with intense wringing pains; sometimes it even wounds the intestines by its severe pressure; it suppresses the urine, while the body swells and acquires an unsightly leaden hue." Pliny‡ adds nothing to the above but some remarks on the noxious quality of the fumes of lead. Paulus Æginetа§ exactly follows Dioscorides. Vitruvius‖ dwells at some length on the disadvantage of receiving water through lead, arguing thus, that lead must be unwholesome, since it produces ceruse, the noxious effects of which were generally recognised; and also drawing the same inference more logically from the pallid complexion of the workers in lead.

* Nicander, Ἀλεξιφάρμακα, l. 600 (circa.)
† Dioscorides, Ἀλεξιφάρμακα, cap. 27.
‡ Pliny, Nat. Hist., lib. 34, cap. 18.
§ Paulus Ægineta, lib. 5, cap. 59, 61.
‖ Vitruvius de Arch. Vet., lib. 8, cap. 6 (vulg. 7.)

rom the writers of the Arabian school, Avicenna and axes,* I shall not quote, as the substance of their remarks been anticipated in the passages which I have cited re.

hese, though interesting, and, as far as they go, not in-rect, do not evince any great extent or accuracy of ob-ation: they seem to imply that the attention of the ers had been awakened by the singularity of the pheno-a rather than rivetted by their frequency.

he truth is, that lead was in very little use amongst the ents. Their reservoirs of water were of marble and ent; their domestic utensils, when not of their own in-able pottery, were of copper, with its various compounds, ich they early learnt to line with tin,) or of metals yet precious. In decorative painting, their pure atmosphere ouraged the use of fresco, in which the oxides of lead, so ntial in oil-painting, might be readily dispensed with. The ensive use of lead-piping alluded to by Horace,† as well as Vitruvius (*ut supra*), would doubtless bring into more ce a certain class of morbid effects, and the entire silence elsus as to these is probably owing to his having followed ek authorities. Still, had the medical profession of the ent day no stronger motive for the close investigation of subject than their predecessors under the Cæsars, it would e little of practical utility to recommend it to an assembly the present. But, unhappily, the victims of that poisonous acy which in days of yore was but suspected or casually arked, are now to be numbered by hundreds—nay, sands—in all classes, and especially among the artisans everal trades hereafter to be particularized.

is a fact now so clearly understood as to become familiar, when lead, whether in fumes or in powder, is diffused in atmosphere, it may be absorbed into the system. After a able period of exposure to its influence, an impairment of e of the functions of the body becomes manifest by ain signs and symptoms. The effects of the imbibed on are by no means constant: different individuals are cted in dissimilar ways. In one colic will be the result, nother paralysis; in a third the effect may be merely nalous pains in the limbs or in the body, which without history of the case might seem obscure in their origin and re; in a fourth, the morbid influence may be manifest in form of epilepsy or convulsions, and a modification of the lysis is sometimes found in the forms of amaurosis and ness. These several varieties have been separated by the ich into distinct forms of disease, for each of which have elaborated a high-sounding designation, such as hralgia," "encephalopatic," &c.

ll these various results of the action of lead may, however, et up in different individuals under the same identical mstances, labouring in the same workshop, and exposed he same deleterious influences. It is more reasonable, equently, to regard them as a series of symptoms loped differently, according to the peculiarity of indi-al constitution or of the especial mode of absorption of poison. The classification will be more convenient, as as more efficient for the purposes of treatment, if we le the subject into the two leading forms of Colic and lysis. Colic has usually been called the acute, and lysis the chronic form; but I have considerable doubt of accuracy of this distinction. There are well-recorded nces of paralysis being set up after a very short period of sure to the noxious influence, without any intervention olic, while, on the other hand, long-continued and ently-repeated attacks of colic occur without paralysis rvening. Colic is undoubtedly the form of most frequent rrence, and that with which practitioners are most iar, especially in this country. Happily, also, it is the which is the most amenable to treatment—indeed, so geable that it is rarely fatal.

(To be continued.)

Avicenna, vol. 5, Fen. 6, Quarti; Tract. 1, cap. 4, 5. Rhazes, lib. 8, 1.

† Purior in vicis aqua tendit rumpere plumbum,
Quam quæ per pronum trepidat cum murmure rivum?'
L. I., Epist. 10.

Francis—

"Is water purer from the bursting lead,
Than gently murmuring down its native bed?"

SSAY ON HYDROPHOBIA.—It will be seen, by an tisement in this day's LANCET, that the sum of £50 is d for the best essay on Hydrophobia, its Nature and Treat-

ON

TWO CASES OF OVARIAN ABSCESS.

WITH REMARKS.

BY T. H. TANNER, M.D., L.R.C.P.

IN July, 1849, a poor woman, forty-four years of age, the mother of three children, the youngest eighteen months old, came under my care at the Farringdon General Dispensary, suffering from the symptoms to be presently mentioned. Her history was, that seven weeks previously she was kicked by her husband over the lower part of the abdomen, which gave rise to so much sickness and suffering, that she was obliged to remain in bed for two days. The pain then diminished, but returned with increased severity, accompanied with rigors, at the end of a fortnight, when her catamenia appeared, though more scantily than usual. She had some medicine from the parish surgeon, which gave her relief, and she was enabled to continue doing her household work, until the following monthly period, when she became much worse, complaining especially of acute pain at the bottom of her abdomen and towards the left side, of lancinating pains down the thigh of the same side, and of inability to keep any food, &c. upon her stomach. The menstrual flow was very scanty, and ceased five days ago.

On examining the abdomen, I found it swollen, tympanitic, and tender on pressure, especially in the left iliac region, on pressing into which, a tumour, about the size of an orange, could be felt. On examining per vaginam, this swelling could be more distinctly felt on the left side of the uterus; it appeared rather moveable, that is to say, as if it could be pushed upwards, and on pressure an indistinct sensation of fluctuation was communicated to the finger. The cervix uteri was healthy. Her bowels were costive, and she experienced much pain on going to stool, and was never free from "bearing-down pains."

My diagnosis was, that the left ovary was enlarged, and that suppuration had probably taken place. As there were no indications for immediate local treatment, and as the woman was exceedingly weak, I ordered her tonics and nourishment, and directed her to keep as quiet as possible. This treatment was continued until the morning of the 12th of August, when I was suddenly called to visit her, as she was said to be dying.

On my arrival I found that she had rallied, and learnt from her that the catamenia had appeared on the previous evening, that the flow was rather more abundant than it had been on the previous occasion, and attended with less pain until this morning, when, on getting out of bed, she felt something give way in her stomach, and became very faint. Feeling a strong desire to go to stool shortly afterwards, she did so, and passed about half a pint of unhealthy-looking pus mixed with a little blood. She had felt easier since taking some hot gin-and-water. On examining the abdomen, the tumour could not be felt in its usual situation; but as pressure gave her pain, and caused a sensation of sickness, it was only employed with gentleness.

The further progress of this case was very satisfactory; although much depressed by a troublesome attack of diarrhœa, yet, as she was fortunately able to obtain nourishing food, and had a good appetite, she gradually gained strength, and at the end of three months was quite well. I should mention that she continued to pass small quantities of pus with her stools for some time after the first discharge, and that she always felt much relief on doing so. On examining the abdomen at the end of the three months, no swelling nor enlargement whatever could be felt; but on making a vaginal examination, a slight hardness could be felt at the left side of the uterus, pressure on which gave a little pain.

Before making any remarks on the peculiar features of this case, it will be better to relate the second example of the same disease which has come under my notice, but which unfortunately has terminated in a very different manner. On the evening of the 28th January, 1852, I was hastily summoned to a lady who had been under my care for about two months, suffering from incomplete hemiplegia of the left side of the body, attended with great debility. I was unable to attend for about an hour, and on my arrival found her propped up in bed, excessively prostrated, body and extremities cold, and covered with a clammy sweat, and with a pulse scarcely perceptible; she was gasping and crying out with agony, and appeared to have her sufferings increased on touching her abdomen, to which she pointed as the seat of her pains; while her countenance was distorted, and bore a peculiar expression strongly indicative of approaching death. She appeared, in