use of the remedies last mentioned, he soon got quite well, and, I believe, remains so.

It will be seen from the remarks which have been made that I have employed the blister-treatment both as a means of cure, as ordinarily understood, and of relief. In many of the two former classes of cases it may be regarded as essentially curative, though the cure may be assisted by the employment of constitutional remedies. In the latter cases it can only be considered alleviative, and as an adjuvant, though a very important one, to the cure by constitutional means.

ACUTE YELLOW ATROPHY OF THE LIVER, ABORTION, AND *POST MORTEM* EXAMINATION OF MOTHER AND FÆTUS.

By ALEXANDER OGSTON, M.D., Surgeon to the Royal Infirmary, Aberdeen.

In September 1872, J. R., unmarried, a female domestic servant at a farmhouse in the parish of Turriff, Aberdeenshire, aged 21, took medicine to procure abortion, she being then four months advanced in her third pregnancy. Shortly afterwards, she was one day, after performing her ordinary morning work, and being apparently in perfect health, delivered of a fœtus. Although hæmorrhage was not excessive, her collapsed state immediately after the delivery led to Dr. Mortimer, of Turriff, being sent for. He removed the placenta, and, perceiving slight indications of jaundice, gave an unfavourable prognosis. A few hours afterwards, without having lost more blood, she died.

The *post mortem* examination of her body, performed by Dr. Mortimer and myself, gave the following results. There was jaundice of the whole skin and of both conjunctivæ. The pupils were dilated, and subcutaneous ecchymoses were present on the right shoulder, right arm, left haunch, and left shin. There were black areolæ around the nipples, and milk in the breasts. The lineæ albicantes of previous pregnancies were present. The fingers and thumbs were clenched. There were several rounded ecchymoses, in breadth from an inch downwards, under the scalp. The dura mater was yellow. There was a moderate amount of serum in the ventricles of the brain. There was *post mortem* central softening of the brain. The blood in the sinuses were fluid and cherry-coloured. The mouth and throat were pale. Brown matter was present on the teeth and back of the tongue, and black grumous matter in the trachea and œsophagus. At the lower part of the pharynx, opposite the larynx, was an oval ulcer half an inch long, longitudinal in direction, and in the process of healing. The lungs were anæmic and œdematous behind. A few ounces of pink serum were contained in each pleural cavity. The thymus gland was persistent, but small. The heart was empty; its walls were pale, soft, flabby, and friable; microscopically, its structure was fatty, the fatty granules, all of minute size, being so numerous in every muscular fibre, that few of them showed any transverse striation, and not one was healthy; no large granules or drops of fat were present, and the whole heart was equally degenerated. The stomach was pale, containing a large quantity of black grumous fluid, mixed with friable brownish knots of altered blood. The duodenum, which contained similar matter, presented a small patch of injected mucous membrane. The gall-bladder was contracted, and contained only whitish mucus. The liver was pale, yellow, and intensely anæmic; its structure was soft and friable; microscopically, the acini were crowded with fat globules, a narrow zone of the cells around the intralobular vein alone remaining free from them, and in this zone the liver-cells were cloudy and swollen. The portal veins were full of blood. The hepatic ducts contained no bile. The spleen was healthy. The kidneys were yellow, anæmic, and fatty; microscopically, the epithelium of the tubules was loaded with fatty granules, and some of the tubules contained pure fat, which spirted from their cut ends in some of the sections. The bladder was full of natural urine. The uterus was large, and contained grumous blood. The ovaries were healthy; a corpus luteum was present in the left ovary. A small quantity of blood was found in Douglas's space behind the uterus. The blood was everywhere fluid, and of a peculiar cherry colour. Small extravasations of blood, in addition to those already mentioned, were found under the mucous membrane lining the pelves of the kidneys, and under the peritoneum on the right side of the uterus.

On examining the ovum, we found the placenta and membranes still attached to the child, and a portion of the decidua lying beside them. These latter, and the decidua, were studded through their whole thickness with small ecchymoses and extravasations of blood, which were so numerous on the inner surface as to be confluent. The fœtus was nine and a half inches long, its sex undeterminable. The scarf-

skin was loose and readily detaching. There were several capillary ecchymoses on the back part of the scalp. A patch of extravasated blood, half an inch broad, lay beneath the skin on the right side of the neck. There was brown discoloration of the right leg; green discoloration of the belly. Extravasated blood was found in the lower parts of both lungs, which had not breathed. The liver was soft, containing several clots and extravasations of blood of the size of peas.

An analysis of her liver, spleen, and stomach, and of a mixture said to be the drug she was using, disclosed no trace of phosphorus. The mixture consisted of a small quantity of perchloride of iron, a bitter vegetable infusion, and a minute proportion of antimony.

CONTRIBUTION TO THE HISTORY OF PUBLIC MEDICINE.

By J. INGHAM IKIN, Esq., Leeds.

As far back as 1851, I published in the *Provincial Medical and Surgical Journal* a series of papers on the Progress of Public Hygiene and Sanitary Legislation in England, and the Advantages to be derived from their further Extension. Now that the Public Health Act of 1872 is about to be carried out, an important epoch in the history of sanitary reform has arisen; and it seems an appropriate time to supplement my former papers with a brief commentary or appendix on the progress of sanitary measures from 1851 to 1872. With this view, therefore, I have penned a short statement for the *JOURNAL* in the first place, and afterwards for the perusal of the public generally, as general information on the question of public health is much needed, and the medical profession are in a position at least to claim the credit of having been the most urgent and effective sanitary reformers—so much so that, without their agitation, combined with their writings, discussions, and practical observations, the slight progress made would have been slower even than it has proved.

The progress of sanitary reform in this country has been slow in the extreme—a fact not creditable to a practical people like ourselves. This has arisen more from apathy and lukewarmness, and from the want of a due appreciation of its national importance, than from any decided opposition or objection to the cause itself. Our heavy bills of mortality, the frequent prevalence of epidemics of a dangerous and fatal character amongst both men and beasts, the alarming illness from fever of a Prince, the spread of cholera from the East to Europe, the breaking out of the small-pox in all parts of the kingdom, the reports and warnings of our medical officials of the Privy Council, and the urgent demands of the medical profession generally, have at last induced Parliament and the Government to discuss and legislate, and a portion of a Public Health Bill has just been the result, along with the consolidation of the Local Government Board. Still, a beginning has only been made; the main work has to be accomplished, and the value of the agencies employed tested. Fortunately for the interests of the country and the health of the community, the leaders of both the great political parties in the State are now pledged to encourage and carry out a well devised system of sanitary legislation; so that no change in the Government and no party strife can check the progress of sanitary reform, in itself as important as any Church or State question.

If the public had been earlier better informed, and a knowledge of the ordinary laws of life even partially understood, we should not have been so long kept from sanitary legislation; but the fact is, people are only just beginning to understand that it is for their pecuniary interest that sanitary measures should be adopted; and at last the ratepayer is getting to understand that every preventable disease, every dangerous nuisance, and every premature death, is so much pecuniary loss, local and national. Our leading sanitary reformers have for years led the van in sanitary agitation without any pecuniary object to gain, aided by our state-paid officials, the most enlightened of our class, and philanthropic statesmen like the late Lord Brougham, the Earl of Carlisle, the Earl of Shaftesbury, etc. At last, sanitary reform has become, if not a popular question, at any rate a prominent one. Considering the array of facts that have been published during the last thirty years from time to time, showing the necessity of improved sanitary legislation, it is not creditable to our legislature that so little has been done to remedy the evils pointed out, or to protect the health of the public, check disease, and lessen mortality.

It would be tedious in the extreme to enumerate the steps that have had to be adopted, and the exertions made by different individuals, in favour of the various isolated and imperfect Sanitary Acts that have been adopted since 1851. Equally would it be a waste of time to

dwell on the difficulties that have arisen in their administration: suffice it to enumerate some of these measures themselves. In my former papers, the passing of the Health of Towns Bill, the Epidemic Diseases Prevention Act, and the appointment of the General Board of Health (1845), were dwelt upon, along with the labours of the eminent sanitary reformers then working in this field. Those Acts have been followed by the amended Sanitary Act; the Public Health Act for Scotland; the Act for promoting better Dwellings for Artisans and Labourers, and overcrowding in Lodging-houses; the Nuisance Removal Act; the Sewage Utilisation Act; modifications of the Factory Act; the amended Vaccination Act; an Act referring to the Sale of Poisons; the Contagious Diseases Acts, Human and Animal; besides others; and, lastly, the new Public Health Act, and one on the Adulteration of Food and Drugs, etc.

Analysis of the various Sanitary Acts, by an eminent lawyer, has been, I believe, issued; and another is announced by the Local Government Board; so that on this head it is unnecessary further to dwell; but I wish, in this imperfect sketch, to show to whom the credit is due of having brought about the present state of sanitary legislation, and achieved an advancement in sanitary science. The labours of the *Lancet* and its Commissioners were referred to in 1851. These have ever since been steadily pursued, and with much success; indeed, all our leading medical journals have done much to diffuse information and promote sanitary progress, our own JOURNAL especially. The returns, reports, and recommendations of the Registrar-General and his medical statistician (Dr. W. Farr) have laid the foundation for the new legislation that has been adopted. The first Board of Health, and the labours of the veteran sanitary reformer Mr. E. Chadwick, C.B., along with the writings of Drs. Alison, Southwood Smith, Combe, Forbes, Hastings, Drs. Hodgkin, Black, Grainger, Sutherland, Kilgour, etc., were referred to in my former papers on Public Hygiene. The field has since that period (1851) furnished a host of cultivators. The eminent long continued services of Mr. Simon, first as a medical officer of health, and then as the Head of the Medical Department of the Privy Council, have done much to promote sanitary reform; and he has been supported by an able body of assistants. The sanitary reports and recommendations of Sir J. Kanald Martin on Indian and British sanitary questions have proved of the highest value and utility. It would, however, be an omission not to refer by name to a few others out of the many labourers in this wide field—Letheby, Littlejohn of Edinburgh, Dundas Thomson, Lankester, Hunter, Seaton, Ballard, Buchanan, Seaton, Gavin Milroy, Hillier, Radcliffe, Druitt, Duncan, Hasall, Ernest Hart, Trench, and the various metropolitan medical officers of health. To these we must add the writings and labours of eminent practical sanitarians like Parkes, B. W. Richardson, Black, Holland, Rumsey, Stewart, Acland, Godwin, etc.; not to enumerate those of the numerous sanitary authorities at our foreign stations, as well as those in Dublin, Edinburgh, and Glasgow, in each of which cities medical officers of health of high standing have been at work. The long continued exertions of these parties have materially aided in bringing about sanitary legislation. Various Sanitary Commissions and Parliamentary Committees have from time to time been appointed, such as those to inquire into the causes of the pollution of rivers, the removal and utilisation of sewage, the effects of various trades and occupations on the health of the young, and protection of infant life, etc.; and the protection of miners, the dispensing of drugs, the sale of poisons, etc. The information thus acquired has been utilised by the State, and has led to numerous new amended improvement Acts for the sanitary regulation of many of our large towns, giving greater sanitary powers to the local authorities.

In addition to the above, I must not omit the valuable Annual Reports of the Directors-General of the Army and Navy. These blue-books are full of valuable sanitary information, accompanied with most complete statistical tables referring to the health of every department of these two large branches of the public service. Unfortunately, these documents are comparatively little read by the public, and their merits and intrinsic value are not duly appreciated. The clearness of statement and admirable analyses displayed in these reports are models which other departments would do well to follow; but the public too often pass over statistical reading, and avoid seeking information when a little patient study or reflection is essential. It has often struck me, when perusing the returns of the Registrar-General, the reports and tables of the Medical Department of the Privy Council, and those of the Director-General of the Army, that a brief summary of the facts and results might be drawn up and published in cheap form for general circulation. Except for reference, no one ever thinks of reading a large blue-book. The valuable information contained in them, except in the short extracts given in the papers, is not adequately brought before the public eye.

This observation brings me to allude to the good influence of the press generally, exercised both by the leading newspapers and magazines, as well as by popular writers like Dickens, Kingsley, etc., in favour of sanitary progress and the protection of the public health. The articles of the *Times*, the *Builder*, as well as of other important journals, on sanitary improvement, and on the reports of the Registrar-General, the Director-General, and those from the Head of the Medical Department of the Privy Council (now connected with the Local Government Board), have contained concise epitomes, and reflections arising from them, of the utmost value; and, very extensively read, have had an influence on those in authority, and have served to stimulate members of Parliament to pay attention to the subjects discussed. Without the exertions and co-operation of the public press, both metropolitan and provincial, sanitary philosophers would have effected little. Public discussion and public opinion were elicited in favour of a good cause. The attainment of the object sought is certain, sooner or later, to be brought about. Of course, the more popular the cause, the earlier the success. Public hygiene not being a popular subject, and persons being indifferent about sanitary measures and precautions whilst in the enjoyment of health themselves, it is too often set aside as a question for future consideration, and one not of pressing necessity. What short-sighted policy this is! For the neglect of the laws of health is sure to bring about misery, degeneration, and premature decay, to ward off which is of more consequence to the State than any party or political conflict.

It would be a great injustice, in a summary of this kind, if I omitted to insist upon the influence of the Social Science Association in favour of sanitary reform. Ranking amongst its earliest promoters Lord Brougham, Lord John Russell, the Earl of Shaftesbury, the Earl of Carlisle, Lord Stanley, Sir John Pakington, the Hon. W. Cowper, along with its founder, Mr. Hastings, supported by sixty members of Council, Vice-Presidents, and Secretaries, containing the names of most of our leading sanitary writers, this Association has, from its foundation in 1856, by its valuable addresses, papers, discussions, and influence, aided most materially the promotion of sanitary legislation and the spread of sanitary science. The merits of different legislative measures bearing on the public health are more due to this Association and our own Medical Association and its early founders, than to the members of Parliament who happened to be selected to introduce the measures into Parliament. I have just referred to the volumes of the Social Science Association *Transactions* as far back as 1858, and find that the following subjects were discussed in the Public Health Department that year, besides twenty other papers on various sanitary subjects: "Certain Obstacles to Sanitary Reform," by Rev. Charles Kingsley; "The Effects of Poverty and Privation on the Public Health," by Dr. W. P. Alison; "The Necessity of Experimental Works before incurring large Expenditure for the Disposal of Sewage," by P. H. Holland; "The Duty of Municipal Authorities to improve the Sanitary Condition of Towns, etc.," by Thomas C. Orr; "Notes on the Sanitary Condition of Hospitals, and on the Defects in the Construction of Hospital Wards," by Florence Nightingale; "Suggestions relative to Civil and Military Hospitals, and to some other Sanitary Questions," by R. E. Rawlinson, C.E.; "On the Application of Sanitary Science to the Protection of the Indian Army," by E. Chadwick, C.B.; along with papers by Dr. W. Farr, Dr. Conolly, Dr. Rumsey, Dr. Gavin Milroy, etc.

Now this list is a fair sample of the various subjects brought before the Public Health Section yearly, and this course has been repeated for sixteen years, along with the issue of its *Transactions*, giving an impetus to the diffusion of useful sanitary knowledge, along with the tracts of the Ladies Sanitary Association, affiliated with the parent society. These tracts are admirably written, and are from the pens of some of our most eminent medical men and sanitary authorities. The Social Science Association is justly entitled to rank as the great pioneer and promoter of sanitary reform. Attendance at its meetings and the perusal of its publications and tracts induced me to form a Branch of the Ladies Sanitary Association in Leeds, for the purpose of issuing useful information and for the establishment of sanitary lectures (an extended course of which I gave upwards of thirty years ago), the issue of sanitary articles, house to-house-visitation by lady visitors, bible women, town missionaries, etc., acting in co-operation with the clergy and medical men of their respective districts. Our annual meetings, reports, and discussions served to rouse public attention to sanitary evils, and thus to promote sanitary reform, one of the results being the appointment of a medical officer of health and increased attention to the sanitary state and dwellings of the poor, the removal of nuisances, the prevention of overcrowding, and the isolation of infectious diseases. Kindred societies having similar objects in view have since been formed in this town, and much useful sanitary work accomplished; and the recent visit of the

Social Science Association to Leeds served to rouse the authorities to exert their powers to improve the sanitary state of the town and diminish a still unenviable high rate of mortality. The improvement of the homes and habits of the working classes is one of the most effective means of diminishing the high rate of mortality existing in most of our large towns. Popular lectures on sanitary science and physiology can be made very attractive by the introduction of a few experiments, such as those on the chemical composition of the atmosphere, water, blood, etc. The series of sanitary lectures at my suggestion kindly given by various medical men of standing under the auspices of the Leeds Branch of the Leeds Ladies' Sanitary Association were well attended and much appreciated; and I am glad to find that the ladies themselves have now decided to lecture to the poor women and give them sanitary information and useful domestic advice tending to promote the health and comfort of their families. Under the auspices of the Bishop of the diocese, the Vicar, and the leading clergy, and many of my medical brethren, the public meetings of the Leeds Association were highly successful, and its annual reports had a large circulation. A Social Improvement Society has now taken the place of the Leeds Branch of the Ladies Sanitary Association, and promises to be very useful. Branches of the Ladies' Sanitary Association have done much good in many other places. With sanitary agencies at work such as I have named, pointing out the remedies required, and with a long continued high rate of mortality in most of our large towns, and the continued prevalence of epidemics, Parliament was compelled to act, and at last we got the promised Public Health Bill, which last session, after grievous throes, was brought to see the light of day; but, during the tedious process of its birth, differences of opinion arose between the chief adviser in charge of the case and the numerous doctors and nurses who volunteered their assistance on the occasion, the delay caused by an unnatural presentation forming the cause of dispute. The consequence was, the offspring came into the world defective, if not malformed, though the parent of the child is sanguine that it will ultimately be developed to perfection, and be able to exercise all its organs with efficiency and confer credit on its originator. It is clear, however, there is some doubt as to this happy result; for, though the doctors have been displaced, who had given their services gratuitously, the lawyers and examiners have been selected to take charge of the infant whilst under the guardianship of the Local Government Board. This course has naturally displeased the medical faculty, the members of which, having made the prevention and detection of the disease and the preservation of health their special study, considered themselves best qualified to apply the needful remedies. The official instructions just issued for carrying out the new Health Act are elaborate enough, and it is to be hoped the operations of the Act will adequately meet the ends sought to be remedied. By the passing of the Adulteration of Food and Drugs Bill, a great impulse will be given to the cultivation of chemical analysis, and a field of useful and remunerative skill and labour opened to those medical men and chemists who have made analysis their special study. The acuteness and skill shown in the detection of poisons must now be bestowed to the detection of articles so frequently employed for the adulteration of food and drugs, etc.

The working of the Contagious Diseases Acts has proved on the whole successful, and it is to be hoped the clamour and outcry at one time brought to bear against one of these Acts has subsided, and that the law will be carried out where it is most required and found necessary for the protection of the public health. We separate and isolate small-pox cases, fever, cholera, etc., and it is equally for the safety of the public and for the benefit of future generations that persons with poisonous diseases of a loathsome nature, either in men or women, should be restrained from spreading these diseases, and be treated in a special manner in special institutions. In this respect we are not as careful as the Jews were as far back as the time of Moses. We have the privilege of living under a new and Christian dispensation; still, in many respects, we disregard both the Levitical as well as Christian code of laws laid down for the preservation of our health. By breaking the natural laws of health, we deface the sacred temple we possess, and run counter to the laws of our Maker. The necessity of temperance, cleanliness, and chastity must be enforced by the arm of the law, otherwise the human body is apt to become degraded into a mere brutal machine, and the highest interests of the creature, both here and hereafter, disregarded. Our most enlightened divines have long recognised the necessity of inculcating attention to the physical as well as spiritual wants of the people under their charge. Our leading sanitary reformers, humane statesmen, church dignitaries, and ministers of religion generally, have done much to remedy the gigantic sanitary evils so long uninterfered with by the law of the land. If God's laws are broken, those of men soon come to be unheeded as well. The co-operation of the clergy with the medical profession is

always attended with public benefit; and the Public Health Act will prove comparatively a dead letter, if the parties whom it is principally intended to benefit do not intelligently and heartily unite with the local authorities in carrying it into practice, and they will not do so unless their truest friends, the doctor and the pastor, convince them it is a real advantage to make their homes and habits subservient to the laws of health. As long as the body is neglected and dishonoured, the wants of the soul will receive no attention, the education of the young will be little cared for, civilisation and religion will be retarded, and national degeneration sooner or later ensue. To meet such direful consequences, and add to the happiness and longevity of the human race, are the grand objects of the social and sanitary reformer.

HYPERTROPHY OF THE ARTERIAL WALLS.

By GEORGE JOHNSON, M.D., F.R.S.,

Physician to King's College Hospital; Professor of Medicine in King's College, London; etc.

To any one who feels confident that he has satisfactorily worked out a problem, the opportunity of answering objections is always acceptable; and I have to thank my colleague Dr. Beale for having done me the favour to put forth two objections which admit of a complete answer.

The suggestion that thickening with degeneration of the arterial walls had been mistaken for genuine hypertrophy, is completely refuted by pointing to the obvious contrast between my published illustrations of hypertrophy and Dr. Beale's representations of arterial degeneration. It is assumed that the drawings fairly represent the specimens from which they are taken; but the specimens still exist, and can be compared with the drawings. Dr. Beale's Plate XIII, to which he refers in illustration of his criticism, a part of which only has been quoted by Sir W. Gull, contains five figures, of which one represents a normal artery, while three are illustrations of thickened arteries which most pathologists, without even a "hint" being given, would recognise as examples of amyloid or waxy degeneration. But one figure (72) presents an entirely different appearance. This is an artery from the peritoneum of a starved frog; and its fibrous tunic is much distended, probably by glycerine or by acetic acid, while the muscular coat is pushed inwards, and the canal is narrowed. This is a good example of the "hyalin-fibroid" change in the external coat of an artery—artificially produced, as usual. Dr. Beale now repeats the suggestion which he made on a former occasion—that a contracted healthy artery "may be indistinguishable from one of less diameter but with thicker walls." The specimen which Dr. Beale exhibited at the *soirée* of the Royal Medical and Chirurgical Society in illustration of this suggested source of error, showed, as I believe, to the satisfaction of most men who examined it, that, so far from it being difficult to distinguish a normal contracted artery from one with hypertrophied walls, it would scarcely be possible to confound the two. My own specimens of hypertrophied arteries exhibited on that occasion had their canals uniformly distended by injection, and formed a striking contrast with Dr. Beale's specimen. While Dr. Beale believes that the muscular wall of an artery may be atrophied, his singular incredulity as to the possible occurrence of arterial hypertrophy "under any supposable circumstances" will probably prevent him from spending much time in the search for what he conceives to be a physiological impossibility; but to those who are less sceptical I beg to suggest a mode in which they can easily obtain arteries with an increased thickness of true muscular tissue in their walls, and at the same time satisfy themselves that the thickening is not the result of contraction of the canals of the vessels. Let a section of an injected healthy kidney be compared with one from an injected small granular kidney. The size of the canals of the afferent Malpighian arteries, and the normal thickness of their walls, are both well known and remarkably uniform. A comparison of these particular arteries from the two kidneys will show that, while the canals may be of equal size in the two specimens, the muscular walls are more than twice the normal thickness in the diseased kidney.

ETHER AS AN ANÆSTHETIC.

By SAMUEL FIELDEN, Esq., Shildon, Durham.

At a time when the question of anæsthetics is again attracting the attention of the profession, the following notes may not be without interest.

C. B., aged 24, a feeble, cachectic young man, came under my care early in December last. His symptoms were indicative of vesical calculus, and from his history these had existed for eighteen or twenty