NOTES OF A PECULIAR TEAT-ERUPTION IN A MILCH COW,

COINCIDENT WITH AN OUTBREAK OF TYPHOID FEVER AMONGST THE CONSUMERS OF THE MILK.

Read in the Section of Public Medicine at the Annual General Meeting at Leeds.

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SINCE Mr. Power's report to the Local Government Board on the Hendon cow disease and its connection with scarlatina in the human subject, and Dr. Klein's experimental inquiries thereupon, the diseases affecting the udder and teats of milch cows have acquired considerable interest for medical practitioners. For the present the conclusions arrived at must be regarded as provisional, and I submit the following notes as a contribution towards the study of the subject.

With the view of showing wherein this Dundee cow disease differs from previously recorded teat affections in its character, duration, and supposed effects on the human subject, I will briefly state the leading characteristics of the Hendon cow disease, the Wiltshire cow disease, and the Edinburgh cow disease.

1. The Hendon cow disease, or cow scarlatina, whether of spontaneous origin or induced by inoculation of the streptococcus scarlatinae, is, according to Dr. Klein, characterised by an eruptive and ulcerative affection of the teats and udder, followed by some similar and general affection of the skin, and, in some cases, a pulmonary disorder was discoverable during life. At *post-mortem* examination there was found disease of the lungs, pleura, pericardium, lymph glands, spleen, and kidney. During life the ulcers, which are covered by red-brown crusts, show a marked tendency to healing after from several days to a week or two. The animal becomes emaciated, the skin scurfy, and the hair falls off in patches.

2. The Wiltshire cow disease, which, in Professor Crookshank's opinion, is true Jennerian cow-pox, and which Dr. Klein regards as suppurative mastitis, is characterised by a contagious ulcerative disease of the teats and udder, with an absence of the visceral lesions and constitutional symptoms observed in the Hendon cow disease. The sores are more flat and superficial, the scabs adherent to base during three or four weeks; the sores are readily transmitted to man, which the Hendon sores are not, and the use of the milk did not cause scarlatina in the human subject.

3. The Edinburgh cow disease was characterised by a contagious ulcerative disease of the teats and udder, the sores being small, circumscribed, raised above the surface, their bases considerably infiltrated, and showing a tendency to heal very rapidly. In other respects the animal affected was healthy. There occurred amongst the consumers of the milk an outbreak of febrile disorder, lasting only a few days, and associated with severe sore-throat and inflammation of the cervical glands, but no scarlatinal rash and no diphtheritic membranes were observed.

4. The Dundee cow disease was discovered from the inquiries made by the Sanitary Department into every case of infectious disease notified under the provisions of the Dundee Police Act, 1882, one of the points ascertained and recorded being the source of the milk supply. I observed that in February, March, and April last an outbreak of typhoid fever occurred amongst the customers of one particular dairy in Dundee, and the most searching inquiries failed to find any trace of disease amongst the persons handling the milk or in their households. I am satisfied this milk did not acquire infection from the human subject.

The prevalence of typhoid fever in Dundee during recent months was as follows: 1888. October, 8 cases; November, 8 cases; December, 8 cases. 1889. January, 10 cases; February, 3 cases; March, 5 cases; April, 20 cases; May, 6 cases; June (to 10th inst.), 6 cases. Of these cases, there occurred amongst the customers of the one particular dairy 2 cases in February, 3 cases in March, 10 in the first fifteen days of April, 3 in the last half of April, 5 in the first fifteen days of May, and none since, nor to date August 6th. From February 1st to April 15th the total number of typhoid cases reported for the whole city was 21, of whom 15 used milk from this particular dairy; and from April 15th to June 10th the total number

reported was 24, of whom only 8 used the suspected milk. From these facts it is evident that the spread of typhoid fever infection amongst the persons using milk from this dairy was greatly checked after April 15th, and apparently ceased altogether after May 15th; and, having regard to the incubation period of the disease, it may be fairly maintained, although not conclusively proved, that the 8 cases which occurred between April 15th and May 15th were caused by infected milk consumed prior to the former date, and that the milk was wholly non-infectious after April 15th.

Now, was any measure adopted on April 15th in connection with this milk supply to which one may reasonably attribute the subsequent non-infective character of the milk? There were two measures adopted: 1. The drain leading from the cowshed to the main sewer in the street was found to be defective and untrapped, and the work of renewing and trapping it was commenced on May 6th and finished on May 25th. 2. On April 15th, the sanitary inspector and myself examined the teats and udders of all the 23 cows which supplied the suspected milk. On one of the cows we found an eruptive disease on each of the four teats, presenting the appearance of ringworm, level in the centre, the margin raised, thickened, and excoriated, without scab or crust or infiltration of the base; the eruption on the inner side of the left hind teat being nearly circular, and about the size of a shilling; those on the other teats being apparently of longer standing and encircling the whole teat, so as to present, not a circular eruption, but a raised, thickened, freely excoriated edge. There was no eruption on the udder nor on the body. The cow appeared to be in perfect health, with a fine coat. Its history, as to which the dairyman is not quite sure, is that he bought it in the Dundee Cattle Market about the end of December last; it calved in the middle of January; its milk was sold daily with the rest, and he could not say when the teat-eruption appeared. Under the directions of the sanitary inspector and myself, this cow was isolated from the rest on April 15th, since when it has been milked by the cattleman, who does not milk the other cows; its milk has been used for feeding young calves, none of it being sold or distributed to the public. From the time this cow was isolated until now (June 10th), a period of eight weeks, I have frequently examined it. It appears to be in perfect health and is getting fatter every week. The eruption on the left hind teat is getting larger than at April 15th and is still well-marked; those on the other teats appear to be slowly healing, the margins being less raised, not so thick under the finger, with much less excoriation, so that the edges are fainter and not so readily recognisable. There has been no crust or scab on the eruptions, which are still confined to the teats, and no similar eruption has appeared on any of the other cows nor on the cattleman.

I may say that we found one cow with a slight excoriation on one of her teats; she was isolated for a few days, during which the excoriation completely healed. A third cow, recently calved, we found isolated on April 15th. She appeared to suffer from suppurative mastitis, with ulcers on the teats and general emaciation. She is still isolated and appears to be getting better, but, as her milk was not at any time distributed to the public, she cannot be regarded as a factor in causing the infectious disease.

Professor Frankland, of University College, made cultivations from the eruption of the first-mentioned Dundee cow, and I send herewith a water-colour illustration of the eruption, which may be compared with illustrations of the Hendon, Wiltshire, and Edinburgh cow disease, as shown in the Local Government Board's report for 1887.

Dr. CALDWELL SMITH remarked that he was afraid that Dr. Anderson had not proved his case. He did not seem to have had the opinion of a veterinary surgeon on the question, and it was more than probable that the untrapped drain had more to do with it than the cow. Between typhoid and scarlet fever the poor cow was having a bad time of it, and it behoved them to prove their case before fixing on the cow as the cause of the propagation of zymotic disease. Dr. Smith mentioned the case of an epidemic of scarlet fever when the cows were suspected, and ulcers similar to those in the Edinburgh cow disease were found. The cows were isolated, and a calf fed, but with negative results. On further investigation it was found that the dairymaid had been infected by a girl coming to the farm for milk while desquamating, and there could be no doubt that all the cases arose from this cause, and that the cow was not the *fons et origo mali*.

SECTION OF PUBLIC MEDICINE.

WEDNESDAY, THURSDAY, AND FRIDAY, AUGUST 14TH, 15TH, AND 16TH.

Climatology and Balneology.—Dr. GARROD asked the members to assist the Committee of the Royal Medical and Chirurgical Society formed to consider the subjects of Balneology and Climatology.—Mr. APPLETON (Beverley) strongly insisted the time had arrived when some should make a stand against the practice, patronised by the fashionable doctors of the metropolis, of sending the sick with tubercular disease into foreign lands. It was admitted by all that tubercle was incurable; therefore, they could do only two things as physicians: prolong life, and let the patients down as gently as possible. That could be arrived at as well in this country as elsewhere, which fact was enunciated by history. Sending the sick away meant extra cost, social misery, and the displacement of family love for the hireling's services. As foreign residence had failed for remedial and even alleviating purposes, why should they not begin, if the leaders would not lead, to take advantage of their uplands and fells, there to obtain at its best the best antiseptic known—oxygen?

Results of a Systematic Inquiry into the Sanitary State of the Homes of Hospital In-patients.—By T. CHURTON, M.D., Physician to the Leeds General Infirmary. The inquiry was undertaken in order to ascertain the possible share which insanitary conditions at home, and especially defective drains, might have in the causation of diseases of medical in-patients. The author, in his paper read at Glasgow last year, had estimated that approximately one-fourth to one-third of hospital patients had grossly insanitary homes; and he then remarked upon the unwisdom and costliness of sending patients back to the bad conditions from which they came, and which had helped to make them ill. It was not practicable to investigate the homes of patients who came from the country, but only of those living in the borough of Leeds. At first the cases for investigation were selected, the addresses of those patients only being taken whose diseases or histories seemed to warrant the suspicion that something was wrong at their homes. Of these, 53 houses were examined; 28 were found defective. Cases were next taken from the medical and ophthalmic wards, without any reference to the nature of the ailments—the house of every patient living in Leeds being examined—of these there were 435; 81 houses were found to be defective. It thus appears, with respect to in-patients, that about 1 house in 5 is in a distinctly insanitary state. The defects were mainly want of traps to the sink-pipes and broken drains. Occasionally an exceptionally offensive privy—they are all more or less offensive—was the ground of complaint; sometimes a good condition within the house was counterbalanced by an offensive gully, exhaling gases from the street drains, within 4 feet of the front door. The examinations were made by the sanitary inspectors of the borough. A list of the Leeds patients was sent weekly or fortnightly to the sanitary office, and by the kind co-operation of the Medical Officer of Health (Dr. Goldie) and the Sanitary Superintendent (Mr. Newhouse), the inspections were at once made, and reports furnished. Although the ophthalmic cases—many of them simply accidents, and without disease of any kind—may have increased the number of healthy houses inspected, the comparatively low ratio of defects was a pleasant surprise. Personal investigations made during eight years (ending in 1885) among patients of the Leeds Dispensary had prepared the author for a much worse result; but he had not realised to the full the efficiency of the work of the sanitary authority and the quiet reform which has been gradually taking place, house by house, from one cause or another in the borough. It would perhaps be hardly possible now to find a case such as he once saw, where a man and his wife had been for 20 years unfit for any active work, but even at the end of that time had no signs of organic disease beyond those of premature senility, and who, during all those years, had lived in a basement kitchen, the sink-pipe of which had no trap of any kind. They had admitted, but as a matter of no moment, that the sink was very offensive in rainy weather; that is to say, every other day in the year on an average. But there still remains much to be done when 20 per cent. of all the houses inspected appear to be unsound. It had been shown that the reporting of patients' addresses to the sanitary officers was a very easy matter, and their inspections could not fail to be of service to the patients and eventually to the hospital. It was hoped that the experiment, which would be continued as long as possible at Leeds, would be tried at some other hospitals also. One great

advantage resulting from this inquiry has been that 109 houses (containing about 500 persons), which otherwise might have remained defective, have been put into a perfectly sanitary state.—Dr. LITTLEJOHN (Edinburgh) said the paper just read was of importance as showing the kind of assistance which sanitary officials received from such inquiries. Indeed, the public were becoming educated in the importance of sanitation, and were giving valuable help to health officials. Citizens were, in Edinburgh, constituting themselves Vigilance Committees, who took up special districts, made house-to-house visitations, noted deficiencies, and reported them to the local authority. Ladies and gentlemen in easy circumstances were giving valuable help in this direction, and instead of feeling annoyed at this apparent intrusion, it should be welcomed as evidencing the interest that is now taken in the welfare of the poorer classes.—Mr. APPLETON (Beverley) thought that all who could influence authorities should be vigilant in urging them to have good by-laws, so as to prevent owners of small properties and jerry builders from collecting in the smallest spaces the largest numbers of the poor. The freest circulation of air was the best antidote, next to good water, to the mischief in and around the poor man's house.—Dr. ARTHUR ROBERTS said that in Keighley public opinion had been very much improved, and the builders were erecting a better class of houses—generally through house. All houses were trapped and disconnected. They also endeavoured to get them to plant gardens in front of the houses, and the builders were beginning to do so.

A Cabinet Minister of Public Health.—By J. BRINDLEY JAMES, M.R.C.S., late President West Kent Medico-Chirurgical Society. Although numerous improvements have been promoted in the interests of public sanitation in the way of organising hygienic supervision, appointing medical public officials who undergo a special examination in subjects bearing on public hygiene, excellent in themselves, they are not sufficient; previous training, and the conditions of holding public medical offices, demand a stringent supervision. All naval and military surgeons belong exclusively to their respective services, and never seek private practice among civilians, unless in remote colonies where no civil practitioner is at hand. It is no less obvious that for public medical officers to devote themselves with as much exclusive zeal to the duties assigned to them as the medical officers of the army and navy they must be in like manner quite free from the cares and claims of a private *clientèle*. What we need is a civil medical service of the Crown. We have Ministers of Commerce, of Public Works; the Post Office is represented in the Ministry, but no recognition of the sanitary claims of the nation or of the medical profession itself has ever existed officially in England. What is needed to constitute a proper medical administration—not necessarily a complex one—is the creation of two medical peers—one a distinguished consulting surgeon, the other an eminent physician—and a Cabinet Minister of Public Health—with the prospect of a similar distinction on retiring from his office, his appointment thereto being based absolutely on his professional eminence and abilities alone; in no way on his political sympathies. Esculapius cannot tolerate the presence of Discord at the bedside. These may appear startling proposals, but it should be remembered also that while the Bar and the Church offer the prospect of attaining the highest State distinctions, Medicine alone has always been the Cinderella of the three learned sisters—quite as useful and as comely, but unrecognised by "the world." We have before now dwelt on the scandal that England—although pagan Rome supported a State hospital for the sick poor—has never, since the Reformation deprived the sick poor and homeless of the benevolence of the convents, officially recognised any. We have indeed excellent hospitals, but due entirely to the private benevolence of the Sovereign or subjects. Disease and deaths are no respecters of persons, striking alike at Pharaoh on his throne and at the bondsman at his gate; it is clear, therefore, that the sanitary state of the public is as much a State interest as public finance, war, commerce, or agriculture. Moreover, the Bar and the junior branch of legal practitioners (solicitors and attorneys) have each their hierarchy culminating in high officials of the Crown, who efficiently maintain their professional etiquette and dignity, able to promptly expel unworthy members of the profession from its ranks; the purity of the Church is protected in a similar manner, and is likewise represented in the House of Lords; but the medical profession, which expects each of its members to prove himself alike a scientist, a practitioner, a philanthropist, and in every sense a gentleman, has no real executive to maintain its standard and protect its interests. Two

medical lords would ensure it a due amount of Parliamentary supervision, and greatly benefit the whole community, if only by forcibly suppressing quackery. But their existence would avail little without the creation of a Minister of Public Health, absolutely independent of any political consideration whatsoever, as in private life we entrust our relatives' lives to the most able practitioner, whatever his tenets, political or religious. His tenure of office should, therefore, be unaffected by change of Government, and he should be entrusted with full powers of selection, promotion, or removal of all public officers of health, whose professional fitness and personal interest his own Ministerial seat and that of the two medical lords in Parliament would fully guarantee, while a peerage would prove a fitting reward at the close of his career. To his arbitration all points of medical ethics, all questions relating to medical education and examinations should be attributed, and the whole control of the curriculum should be entrusted to him and to the two medical peers concurrently. The abstention of all public medical officers of health of course implies compensatory salaries, but the gain to the people at large in health and longevity would render this expenditure true economy. Finally, it should be an essential condition that all future candidates for vacancies in this "Public Medical Civil Service" should have served a previous apprenticeship under some one of their predecessors, under conditions regulated by the Medical Minister assisted by the two Medical Lords. May we hope these suggestions may be ultimately endorsed by the time-honoured professional injunction "*statim sumenda*"?—No discussion arose on this address.

The Disposal of Town Refuse and Excretal Matter.—By MAJOR GREENWOOD, jun., M.D., D.P.H.Lond. (1) Importance from a public point of view of an inquiry as to whether the methods of dusting now in use in our large towns are the best possible under existing circumstances; whether they can be indefinitely continued in the future, and what system would be the best to adopt (a) from a sanitary point, (b) from an economic one. (2) Brief review of practices adopted usually by the sanitary authorities. The Public Health Act 1874, and the Metropolis Local Management Acts of 1855; and their bearing on the construction of suitable dustbins; the defects and disadvantages of these, their immobility, their situation, their insanitary condition often when empty, the possible sources of disease from them. (3) Can this method of storage be continued in the future? The evils arising from allowing putrescible waste to be stored in the midst of large towns rapidly increase with the population. The probability of a diminution of the death-rate consequent on a more rapid removal of the house refuse changes in the metropolis in this direction. (4) The pail system and its advantages. That it makes absolutely necessary frequent removal of refuse—complaints often arising from faulty administration and inadequate carrying out of details. Small property owners find this system cheaper for themselves, and are endeavouring to inaugurate it. (5) Necessity of covered vehicles for the removal of refuse. Danger and annoyance to the public of the present uncovered carts. Ease with which this can be avoided. Diagram of cart employed by the Town Council of Edinburgh. (6) Disposal of the refuse: Difficulties of this. Sanitary science *versus* economy. Manurial properties of the refuse. Dominant idea of Local Boards to get rid of it at the cheapest rate, regardless of public danger. Dangerous position in which refuse is often shot. Evils arising from building over recent dust shoots. Arguments against adding to the impurity of the subsoil by burying house refuse. (7) Cremation and its advantages: Probably more expensive at present, but not necessarily likely to be so in the future. More adapted for large and united sanitary area. Introduction of destructors into the metropolis. Room for great improvement in the economic working of these. At present all the heat evolved wasted. Advantage of small areas combining to work a destructor in common. (8) Profit derivable from our refuse: This gets less every year. Review of the past in this respect, with special reference to Parish of St. Mary, Islington. Result of a return of 22 metropolitan parishes, only two claiming profit. Important bearing of this in the case of refuse removed by contract, as tending to promote sanitary evil. Dr. Corfield's opinion on this. Curious divergence with regard to the cost of dusting and scavenging in the metropolitan area. Probable reasons of this. Table showing details of cost of scavenging and dusting in 24 metropolitan parishes. (9) Brief sketch of a scheme for the dusting and scavenging of a large town: (a) the whole to be carried out by a local authority; (b) the pail system, or some

modification thereof to be adopted; (c) refuse to be removed in covered cart to a dépôt, and thence by a tram or railway line to destructors situated outside the town; (d) All the putrescible refuse, except that which can be advantageously used at once as a manure, to be here carbonised. Remarks on a scheme lately tried at the sewage works of the Halifax Corporation, to use the carbonised products of destructors in treating their sewage, and the advantages claimed for this process.—Mr. J. BRINDLEY JAMES said the conclusions at which the author arrived were the following: 1. The importance of rendering contamination of the surrounding soil by sewers impossible. 2. A chemical system of treatment and utilisation as manure of all slops, excreta, etc., without exception. 3. The contamination of all rivers, streams, wells, etc., prevented. 4. The total suppression of cesspools, and prohibition by law of their construction. 5. Each householder to be compelled to burn his own vegetable refuse, and provided with dust pails for periodical removal (as enforced in Bermondsey). 6. Last, but not least, the construction of a parish crematorium for the reduction to ashes, utilisable in themselves, of all refuse otherwise perplexing to dispose of. Fire purifies everything, and this system, easily rendered innocuous to those employed in it, would confer an incalculable amount of hygienic benefit on the public at large, whose adoption of the same cannot be too zealously invited.—Dr. E. SLADE KING (medical officer of health for Great Torrington, Ilfracombe, and Dulverton), said that the waste products of man's domestic life part themselves for sanitary purposes into two great divisions: 1, sewage, including all excretal and liquid waste; 2, house-refuse, composed of the more solid matters cast away as useless from human habitations, and of the waste materials resulting from the smaller trades and manufactures. House-refuse demands the consideration of the sanitarian in three stages—namely, in its formation in and around houses; in its collection and removal; in its treatment and ultimate disposal. As to its formation or accumulation, cupboards, ashpits, and dustholes are condemned as unfit; and the use is advocated of galvanised metal vessels, casks, or boxes, coated with some non-absorbent material, light in weight, fitted with covers. The collection and removal should be done early in the forenoon, at intervals never exceeding four days, by the scavenger, who empties the contents of the ash-boxes one after another into his cart. Certain precautions are necessary to ensure that each householder does his duty by putting out the refuse in time for the collection. As to the treatment and disposal of house refuse, fire seems the only effectual agent which can be employed for its purification and practical destruction. For large populations this can be done by the "destructor," but smaller sanitary authorities object to the cost of its erection and management. Can the house refuse of a small town be sufficiently burnt and purified without the use of expensive apparatus? and will the charred remains be free from nuisance and of marketable value? The answer is "Yes;" and, as an example, a town of 8,000 inhabitants is selected, the quantity of house-refuse from which in the year exceeds 2,500 tons. Street sweepings are not included: being rich in manurial qualities, they are purchased gladly by farmers and market gardeners for immediate use. The dust-heaps of this town having become a scandal and a nuisance, and requiring to be dealt with in a systematic and effectual manner, a small secluded field was rented at agricultural value, and a trench opened therein, 15 feet deep, 25 feet wide, and 65 feet long, leading at either end by a gentle gradient to the surrounding level. Parallel with one side a shelter was provided, consisting of a galvanised metal roof supported by upright posts; under this shed the carts tipped the town refuse. The dust sorter separated with an iron rake stones, clinkers, and other material fit for road making. He kept, as his own perquisites, bones, rags, etc., which the marine storekeeper purchased; while the "soft core," consisting of vegetable and animal refuse, paper, small coal, and combustible material, he distributed along the sloping side of the trench, and then set fire to, gradually covering it with ashes and the rest of the refuse. Thus drying, and then burning, such a heap burns slowly for a month or six weeks without the necessity of relighting. Eventually nought remains but a mass of black ash, highly carbonaceous and free from smell. The organic matter thus charred is of agricultural value, whilst builders purchase it after screening at the rate of 1s. 3d. per load. The slow combustion constantly proceeds at the centre of the mass, destroys all the fumes, gives rise to scarcely any visible smoke, and permits scarcely any smell to be recognised at a distance of more than a few yards. If all is done regu-

larly by the dust-sorter, the process can be carried out cheaply and effectively. The carrying out of such a plan tends to keep the breathing air of towns pure, and to prevent the tainting of milk and drinking-water with impure gases; it thus tends certainly to raise the condition of health, particularly among young urban populations, and exercises a very special influence on the occurrence of sore-throat and diarrhoea. If, from the character of the soil or want of space, it is difficult to open out such a trench as that above described, a small kiln, on the plan of a lime-kiln, may be substituted. This will cost about £25 or £30 complete, and will deal with 50 or 60 loads a week. This plan of an open trench or small kiln for the burning of town refuse of small populations is all-sufficient. The average cost of collecting, removing, and thus treating by fire the town refuse of an urban population (8,000) for twelve months has been for carts, horses, and general wages (including extra for Sunday work at fish shops), £237 9s.; the average total quantity collected being 2,485 tons. The sale of ashes to builders and farmers has realised £45 10s.—Mr. D. EDGAR FLINN, F.R.C.S.I. (Kingstown) said: The immediate removal of all refuse and filth was the most essential element in the public cleansing of towns. Even to deposit refuse temporarily on the ground was dangerous, as the atmosphere of the dwelling-house was very much affected by the state of the atmosphere of the soil near it. The daily door-to-door collection at a stated early hour each morning, by means of portable dustbins supplied by the authorities, and large enough to contain the refuse collected during the twenty-four hours, was a system working well in a large number of towns. The portable pail-collection of house refuse should be enforced by every sanitary authority, for it appeared to be the best and readiest system, each householder above a certain rating being supplied with a pail at a small charge, and the poorer class of houses being supplied with them free of cost. In small courtways one large pail could be placed in a convenient position, and would suffice for three or four cottages. These should be emptied each morning by the corporation at a certain hour. In each sanitary authority there should be a specially appointed cleansing committee, whose duty it would be to see that the daily public cleansing of a town in all its details should be systematically and properly carried out. It is surprising how little had been achieved in our best and wealthiest towns to provide the working classes with suitable dwellings and with sanitary accommodation likely to train them into habits of cleanliness. The three essential accessories—drainage, closet accommodation, and water supply—being frequently defective and inadequate to the requirements, it was well-nigh an impossibility for any corporation or public body to keep the courtways and laneways of a town in a cleanly condition unless such places were well paved, or, better still, concreted. It was probable that in the near future a Ministry of Public Health would be formed, with a responsible Minister who would have a seat in the Cabinet. Sanitary legislation would thus receive an impetus, and a marked improvement in each branch would be the result. The cleansing of towns had a marked determining effect on the death-rate of a population. Since the inauguration of the system of domestic and public cleansing in the city of Dublin, some seven or eight years ago, coupled with a firm administration of the provisions of the Public Health Act, the death-rate had declined, and diseases of an infectious character were not so frequent as formerly. The destruction of the first germ of disease was of the utmost importance, and it was to the houses of those resident in the courts and laneways of our cities and towns that the lesson should be taught that national health lay in the individual cleanliness and surroundings of the house and its inmates.—Dr. C. F. MOORE (Dublin) said that the disposal of town refuse and excremental matter has, since the visitations of epidemic cholera in 1854-66, and previously in 1849, occupied a prominent place in public medicine. Dr. Moore drew attention to the endeavours which had been made in this direction, the subject having become one of great importance by reason of the great increase of town populations within the present century. The subject embraced the great main-drainage system, such as that of London, to which, however, more than a passing reference was not made; the removal and utilisation or destruction of town refuse, and the treatment and disposal of excremental matter by other methods than that of sewers. The great object of the latter is the disposal, without creating a nuisance or injury to the public health, of excremental matter in such a way, if possible, as to fertilise the ground. The paper contained a brief notice of certain leading methods for that end, with an appendix giving

fuller details of the same. One great difficulty in carrying out the disposal of excremental matter by other means than by a system of sewers in many parts of these countries appears to be the absence of a class of persons who will faithfully discharge the duty in a thorough and effective manner. The Chinese and Japanese afforded examples of this mode of treatment of such matters of great antiquity and effectiveness.—Dr. H. F. PARSONS remarked that the objections raised by the speakers to the dustbin system as carried out in London and other water-closet towns applied with tenfold force to the midden-privy system in vogue in northern towns. He pointed out the advantages of small portable receptacles in saving labour and nuisance by the contents being emptied direct into the cart instead of repeatedly depositing it on the ground and shovelling it up again. He also pointed out that it was unnecessary that ashpits should be made large enough for a man to work inside. The refuse should be collected at short intervals from each house in turn, not waiting for complaints to be made.—Dr. BALLARD characterised the ashpit privy system as abominable, and said he should be glad if some strong expression of feeling came from the Section on the subject.—Mr. C. M. JESSOP (London) said that from his experience in the parish of Paddington, householders would not properly make use of the dust carts as they came round, and that when the cart did not call they did not complain to the surveyor; that there were various kinds of dustbins, some of brick, four feet deep, very difficult to be emptied completely; others of small movable covered dustbins, which, in his opinion, were the best form; and that the County Council should compel each householder to take the proper steps to have the dust removed.—Dr. SPOTTISWOODE CAMERON (Huddersfield) could not agree with the last speaker that the sanitary authority should expect the householder to give them notice when it was necessary they should do their own work. It was the duty of the authority so to arrange their work that the dustbin should be emptied long before it was full. There was one way, however, in which the householder might greatly lessen the work of the scavenger, and that was by establishing each one a small destructor in his own house. Dr. Cameron's practice was to insist in his own house that all vegetable and animal refuse should be placed each night behind the kitchen fire, and raked next morning when dry into the fire and there cremated. In this manner, especially with the use of Mr. Teale's economisers, the amount of refuse would be immensely reduced. The theoretically perfect plan was to remove the house refuse every day, as was, he believed, done in Edinburgh still. Everyone would have cause to condemn the midden, and even the tub or pail system was only a sort of improvement upon it. The latter had its advantages in limiting, for instance, the spread of infection from cases of enteric fever which could not be taken to hospital. The providing of a separate tub for such cases and the supply of strong disinfectants for use in them had helped greatly to the limitation of this fever in Huddersfield, and when the water-carriage system came to be adopted in that town he should still recommend the continued use of pails for cases of enteric fever.—Dr. LITTLEJOHN (Edinburgh) agreed with the Chairman that no more important subject could be discussed. He was convinced that the remedy for the nuisances connected with the accumulation of domestic refuse was daily removal, and that to be undertaken by the local authority. In Edinburgh this had been satisfactorily carried out. All refuse had to be brought to the street in suitable receptacles, and these were emptied morning and evening in the poorer districts, and every morning in the New Town. The water-carriage system obtained in Edinburgh, and the effect had been that the commercial value of the refuse had been declining from year to year; and now the farmers were unwilling to purchase it. The solution of the present difficulty was destruction by fire. He regretted to hear members advocating the retention of the dustbin in London. Its existence was a nuisance, and sooner or later the metropolis must face the question of daily removal. The existence of decaying material so close to dwellings must be prejudicial to health, and the principle should be condemned by the department.—Dr. CALDWELL SMITH agreed with the remarks of the previous speaker (Dr. Littlejohn) in regard to the advisability of daily removal. He also thought that the first thing to do was to get the corporations to take over the whole question of disposal and collection of refuse, and not to let it out to contractors. Only by doing this could the matter be done efficiently and well. In a town in Scotland lately the farmers had absolutely refused to remove the manure from ashpits, as they find it is of little manurial value.

Resolution.—Dr. GREENWOOD presented the report of a committee of the Public Medicine Section appointed to report upon the dusting of towns. The Committee recommended the adoption of the following resolutions, and that they should be sent to the general meeting of the Association:

1. That this meeting hereby expresses its disapproval of any system of middens, sewers, cesspits, dustbins, etc., which involves the storage of filth or house refuse in the immediate neighbourhood of dwellings.
2. That it further considers that in towns, villages, and other populous places the sanitary authority should itself undertake the removal of such refuse from each household at frequent, regular, and, in populous places, daily intervals, at the public expense, without waiting for notice to be given by the householder.
3. That it expresses its preference for small, movable, watertight receptacles for the collection of house refuse or other excreta, in order to fulfil the essential conditions of preventing pollution of soil as well as air.

The resolutions, after a brief discussion, were adopted unanimously, and it was agreed to submit them to the general meeting.

On the Sources of Lead Poisoning in the Arts and Manufactures.—Dr. J. T. ARLIDGE, Physician to the North Staffordshire Infirmary, read a paper on this subject. After a brief reference to the wide use of lead in the arts and manufactures, and the practical value of knowing where its effects may be looked for, and under what forms the metal exerts its poisonous influences, he proceeded with the consideration of the last-mentioned problem under three heads, namely,—1, Lead in the solid form, as lead ore, as metallic lead, and as an alloy; 2, in the form of its salts, whether in powder or in solution; and, 3, in a mixed form, with oils and fluxes. In the form of ore it is productive of plumbism among the miners and smelters, being injurious to the former chiefly in the shape of dust, and to the latter in that of vapour. It is, too, as a vapour that it produces its noxious effects among the makers of the oxides of lead in the process of calcination. In the case of metallic lead, plumbism is a result among those who frequently handle it, such as file cutters, the rollers of sheet lead, the makers of leaden pipes and utensils, of shot and lead foil, weavers employed at Jacquard looms furnished with weights, plumbers, casters of leaden toys and of letter type. In the last named it enters as an alloy, and as such at times affects injuriously compositors. In the character of alloy it proves mischievous with pewterers, the makers of soft metallic capsules and of inferior German silver or pinchbeck. Further, metallic lead and lead alloys become indirectly the cause of illness when employed to form utensils for the storage or preparation of articles of food or of luxury, as, for instance, snuff and tobacco, or in the construction of pipes for conducting or drawing off fluids. Even in the shape of a comb metallic lead has been noted to cause its characteristic results. But more potent and wide-reaching effects follow the manufacture and uses of the salts of lead. Foremost among these are white and red lead, and, in a secondary place, the acetate and oxides, such as minium. The making of white or the carbonate of lead is a very large industry, destructive of health in all its details, and this chiefly by the evolution of dust which enters the digestive canal. Numerous inventions have been introduced to lessen the ill-results of the trade, but hitherto with imperfect success, and the old-fashioned method held its ground by reason of producing a material found by painters to have a better "body," and to cover better the surfaces painted. As house painters are the chief users of white lead, they are the commonest sufferers in the community at large of plumbism. But, turning to special occupations, there is found an even larger proportion to the whole number using it in various forms and methods among pottery artisans. Again, its poisonous consequences are encountered among the mixers of paints and colour makers, among those employing it as a flux, or in the preparation of enamels or glazing materials such as are used to embellish walking sticks and umbrellas, to give smoothness and polish to the leather lining of hats, or to the exterior of straw hats, or to playing and visiting cards, and many fancy articles of stationery, to glaze earthenware and china, or iron vessels used for cooking, or iron plates for advertisements, or ornamental card and metal boxes. Litharge is much employed by plumbers and engineers. It occurs in polishing powders for metals, and in this form is seen in cutlery and electro-plate factories, and in polishing brass utensils. It is a component of glass, and the "mixers" now and then suffer from it, but more frequently the glass polishers, who dress the wheels with it. In a state of powder dusted on a surface, either by itself or mixed with other matters to produce colour, the carbonate or the oxides are used in the process of "ground laying" as practised in the potteries, and in the preparing of coloured paper and of coloured type. Mixed with water and other media, the same salts of lead are used in adorning common

earthenware, and in the dangerous art of majolica painting. In its commonest combination with oil, as ordinary paint, it has been already referred to as the cause of plumbism among house painters. Another class of workmen its ill-effects are seen among are the makers of floor-cloth and of linoleum. Other miscellaneous trade operations in which lead plays its part as a poison are found in the business of lapidaries and cameo makers; in that of brush makers, who employ it to colour the hair or bristles; in that of picture-frame making, where the raised pattern is formed by a sort of cement or putty, in which lead enters as an ingredient; in the less justifiable operations of whitening Brussels lace, and of colouring and weighting of sewing threads and woven tissues; in the colouring of vulcanised india-rubber, so commonly used for "feeding bottles." But we have, likewise, to deplore the surreptitious use of lead salts, as, for example, of the chromate or oxide to adulterate snuff; or, for the sake of colour, to embellish sweetmeats; or to serve as a component in hairwashes and cosmetics; or to give false weight to cayenne powder. To make the survey of the sources of lead poisoning more complete, the accidental introduction of the metal in articles of food may be mentioned as occurring in drinking water, under conditions so well studied by sanitarians; in porter, beer, cider, and lemonade, or fruit juices, any of which may have stood in contact with lead or its alloys in the form of pipes or capsules; or in bottles carelessly cleaned with shot; in solid, but moist or deliquescent, food preserved in lead-foil, or so-called tin cans with soldered joints; or in food cooked or salted in vessels on the surface of which lead occurs as a glaze, or else which have it enter into their structure. Lastly, whilst reserving the study of the symptomatology and pathology of the poison for another occasion, the writer remarked generally on its slow but ever progressive action on the economy when not taken in actually poisonous doses.—Dr. SINCLAIR WHITE remarked that lead poisoning in file cutters was not so prevalent as formerly. This improvement was due to the stricter observance of cleanliness by the workpeople.—Dr. WHITHAM said it was remarkable that plumbism was not common amongst artists. They frequently ate hurried meals in the studio without taking the slightest precaution. Dr. Allbutt had stated that he had never met with a case.

Diseases and Injuries caused by Special Occupations.—Dr. ARLIDGE read a paper on this subject. He remarked that among the causes of disease the effects of occupation had not been adequately studied. To establish the study of industrial diseases upon a sound footing it was necessary to ascertain the numbers engaged in a manufacture, the diseases occurring among them for a series of years, the character of those diseases, and the conditions of employment and the materials used in performing it. The inquiries to be presented were of a fourfold character: 1, statistical; 2, pathological; 3, technical; 4, sanitary. It was a simple task to tabulate cases met with in private, in dispensary, and in hospital practice in such a manner as to exhibit in a series of columns the name, the sex, the age, the occupation, and the disease, and when a sufficient number were registered it needed only an easy piece of arithmetic to sum them up, and to calculate for each trade the proportion in which any specified disease prevailed among its followers. The second class of inquiries were those directed to pathological details; researches into the mode of production of any special lesion attaching to a business; into its intrinsic character, its course, and progress. Each staple trade of the country had in itself some peculiar health condition residing in the nature of the work it entailed, but still oftener in that of the materials employed; and to illustrate or unfold the pathology of its resultant lesions opened up a field of investigation of wide interest, and hitherto little worked. The third group of inquiries to be instituted he had called technical, inasmuch as their object was to ascertain the nature of the manufacturing processes resorted to, and their relations to health. From such inquiries they sought to learn what were the sources of trade diseases; if heat, or vapour, or noxious and poisonous gases, or poison in a solid, vaporous, or fluid form; if compressed or rarefied air, or exposure to intense light or sound, or over-exercise of particular muscles, or whatever other morbid agency could be detected. The last group, sanitary inquiries, aimed at the collection of facts as to the active or sedentary nature of the work performed and the amount of physical exertion entailed. The labour, if carried on as associated labour in factories, or as domestic in the houses or small shops of artisans; if performed on the surface of the earth, or beneath it; if in the open air with exposure to weather, or in confined places; if not only day but also night work

be a condition of employment. Other matters to be kept in view were the number of working hours, the extent of intermissions of labour; and if they included returns as to accidents in the programme, they must ascertain the liability to their occurrence and the circumstances to which they were attributed.—Dr. P. CALDWELL SMITH thanked Dr. Arlidge for his educative paper, and stated that he had hoped to present for discussion before the Section a paper on the death-rate of miners from diseases of the lungs, from the passing of the Mines Act, when better ventilation was instituted. Such an inquiry was suggested to him by the statement of Dr. Nasmyth, of Cowdenbeath, that the death-rate of miners from such diseases was almost the same as in the rest of the population. Dr. Arlidge, in his admirable lectures, somewhat dissented from this opinion; and, as far as his (the speaker's) inquiry had extended, he could positively affirm that Dr. Nasmyth was taking too roseate a view of the miners' occupation. He hoped to publish a paper giving death-rates from diseases of lungs among 12,000 miners in adjoining districts in Scotland.—Dr. SINCLAIR WHITE hoped Dr. Arlidge's valuable paper would have the effect of stirring up medical officers of health to take a greater interest in trade mortality. He had analysed the deaths occurring in some thirty Sheffield trades for three years, and hoped that medical officers in other towns would follow his example. He was able to demonstrate that the high death-rate which obtained among cutlers and some other workmen thirty or forty years ago has been largely reduced.—Dr. A. S. UNDERHILL referred to the almost total cessation of special disease of the lungs amongst colliers in the South Staffordshire district. Since the passing of the Mines Regulation Act no case, pathological or otherwise, had been shown at the Birmingham Societies. Since that time, and at the hospital with which he was connected, no case had been recorded for fifteen years, although it was situated in the midst of the coal-field of South Staffordshire. He attributed this cessation of special disease to the better ventilation of the mines, and to the fact that in his district the coal measures were exceptionally deep.

EXCURSIONS AT THE ANNUAL MEETING,

Scarborough.—The excursion to Scarborough was, as might have been expected, perhaps the most popular of the series. About 120 members of the profession, accompanied to some extent by their wives and friends, left Leeds by special train at 9.10 A.M. on the morning of Saturday, 17th. The journey was broken at York, Scarborough being reached shortly after noon. The weather was all that could be desired. The visitors received a cordial welcome from their Scarborough brethren, a number of whom were waiting at the station to receive them. A special luncheon was given at the Royal Hotel, to which about 150 sat down, Dr. Dale being in the chair. A few speeches were made. "The Health of the Association" was responded to by Mr. Ernest Hart, while the programme of the proceedings was explained by Dr. Hutchinson. During the afternoon the visitors made special excursions round the town and into the country; and sea trips in yachts placed by local gentlemen at the disposal of the visitors were largely indulged in. Alderman J. W. Woodall gave a garden party at St. Nicholas House during the afternoon. In the evening a reception was given in the Grand Hall at the Spa by the Mayor (Mr. James Hutton), and as a special compliment the grounds were illuminated. On Sunday a special service was held at the parish church (St. Mary's). The Ven. Archdeacon Blunt, D.D., preached before a crowded congregation. "Church Parade" on the Esplanade was subsequently attended, and in the afternoon sacred music was played in the Spa grounds. A great attraction was an "At Home" at Mr. Alderson Smith's. Here the visitors were most hospitably entertained, and the Misses Alderson Smith, with Dr. Bower, played several pieces, which were most highly appreciated. Dr. Calantariensis's *Glaciarum* was open to the visitors and much frequented, great wonder and admiration being expressed. The concert of sacred music in the Aquarium on Sunday evening was well attended, while later in the evening the majority of the visitors met together at the Royal Hotel, where, amidst much enthusiasm, cordial votes of thanks were passed to the various entertainers, and Dr. Purdy, of Oulton, gave a recitation. On Monday morning at 10 A.M., Mr. Alderman Smith accompanied a party on a deep-sea trawling expedition, which was much appreciated. The general opinion prevailed that not only had no more enjoyable excursion ever been arranged, but that it

was the first time on record where any endeavour had been made to entertain those visiting the annual meetings of the British Medical Association over the Sunday.

Bolton Abbey and Ilkley.—A large number of members and their friend, numbering upwards of 100, took part in this very enjoyable excursion. Travelling in saloon carriages, and proceeding by the new line of railway which connects Ilkley with Skipton, delightful views were obtained of Ilkley and the adjacent hills. At Bolton Abbey Station, which was reached a little before 11, they were met by the entertainers from Bradford and Ilkley, and a number of waggonettes and open carriages were in waiting to convey the party up the Wharfe Valley to Bolton Woods and the Strid. The weather was bright and sunny, and the charming valley, with its beautiful trees and picturesque views, the Wharfe, swollen and boisterous, rushing along midst rocks and eddies, were sights not soon to be forgotten. Then the party drove to Bolton Abbey, strayed among the grand old ruins, visited the church; a few managed to do Posforth Gill, the Waterfall, and the Valley of Desolation; and all returned to the Devonshire Hotel, where a luncheon was served on the lawn, to which ample justice was done. At Ben-Rhydding and Ilkley the various hydropathic establishments were visited. Some of the party wandered on to the moors, others to the Cow-and-Calf Rocks, others to the old church with its Saxon crosses, and at 5.30 they all met at the Wells House, where dinner was served in the beautiful winter garden. All were charmed with this flourishing hydropathic establishment. Old friends here met again, new friendships were formed, and the excursion was a fitting close to a most successful meeting.

Harrogate.—Many members availed themselves of the opportunity offered of visiting Harrogate, and of participating in the hospitalities of their medical brethren in this popular health-resort. A special train left Leeds about 9 A.M., arriving at Pannal at 9.15. Here the party were met by members of the profession at Harrogate, who conducted the excursion during the remainder of the day. Several four-horse drags were in waiting, and a move was at once made for Plumptre Rocks. The party, which included a number of well-known members of the Association and their friends, was pioneered by Dr. Deville and Dr. James Myrtle, hon. secretary of the Harrogate Medical Society. At Plumptre the famous rocks and lakes were much admired, and some pleasing *souvenirs* in the form of rare botanical specimens were taken away. Dr. Deville made an admirable cicerone; while Dr. J. Myrtle supplemented his efforts, to the increasing enjoyment of the party. A move was subsequently made for the ancient town of Knaresborough, with its historic castle and interesting topographical surroundings. On arrival light refreshments were partaken of, after which the Castle, Dropping Well, Robin Hood's and Eugene Aram's caves were in turn visited. The dropping well was a decided feature of interest, whilst the caves, with all their grim associations, added variety to the natural scenery of the place. Knaresborough was left at 12.30 for Ripley. To this place the drive lay through the delightfully rural scenery of Scriven and Scotton. The weather was fine, and a somewhat brisk breeze was blowing, which kept off the threatening rain. The country presented a charmingly picturesque appearance, and the drive was enjoyable. At Ripley the restored church was an object of interest, as was also the castle, together with the lakes and parks. Much enjoyment was afforded here in the inspection of the interior of the castle, with its masterpieces in painting and sculpture. The drive, after three-quarters of an hour's halt, was continued to Harrogate, which was reached about 2.15 P.M. Luncheon was prepared at the Prospect Hotel, of which the members of the party, at the invitation of the local members of the profession, partook. Dr. Myrtle (Harrogate) presided, and toasts were drunk and duly honoured. Once more entering the vehicles awaiting them they were driven to Bath Hospital and Rawson Convalescent Home. From here a visit was paid to the natural curiosity of Harrogate—the Bogs Field, with its thirty-six springs, no two of which are alike in constituents and potency. The beautiful Bogs Valley Gardens were traversed; emerging from the gardens, the old sulphur well was visited. The Montpellier Baths and Pump-room was the next place of visitation. The Victoria Baths, erected by the Corporation at a cost of £30,000, were inspected, and the excellent bath arrangements were the subject of general comment. The party were subsequently driven to High Harrogate, where the steel spring known as St. John's Well was visited. Afterwards the drive was continued up Harlow Road and across the moor, and subsequently the members dis-

persed to the residences of the local members of the profession. In the evening various entertainments were organised at their residences, and the remainder of the visit rendered enjoyable. The day throughout was fine, and the proceedings were highly appreciated. Some of the members returned to Leeds by special train, others left by later trains, while a number stayed in the town over Sunday.

York, Helmsley, and Rievaulx Abbey.—A large number of the members of the Association, accompanied by a goodly sprinkling of ladies, embarked on this excursion. Many members of the medical profession in York combined to welcome the visitors to their city, and all the arrangements were of a very complete character. On arrival by special train from Leeds, they were first conducted to the museum and grounds of the Yorkshire Philosophical Society. Here the Rev. Canon Raine kindly pointed out and explained the various points of interest. The party afterwards proceeded to the Wilberforce School for the Blind, over which they were shown by Mr. Buckle, the superintendent. A pleasing episode in connection with the visit was the singing of a glee by a party of blind vocalists. The Minster was next visited, the Dean of York acting as cicerone; and subsequently a visit of inspection was paid to the Mansion House and Guildhall. The party were received by the Lord Mayor and City Sheriff, who took them over the buildings and pointed out the various objects of interest. At 1 o'clock luncheon was served at the Station Hotel, Mr. S. W. North (Medical Officer for York) presiding. The Chairman briefly bade the guests welcome, and Dr. Cutter (New York) acknowledged the kindness of the medical profession in the city. The Dean of York and the Lord Mayor of York also spoke, and the toast of "The Health of the Chairman," proposed by Mr. Lawford Knaggs (Huddersfield), was duly honoured. About half-past 2 the excursionists left the city for Helmsley, where at 5 o'clock tea was served. Thence the party drove through Duncombe Park, being received by the Earl of Feversham; thence to Rievaulx Abbey, where the picturesque views and objects of interest were much appreciated. Dinner was served at the Black Swan. Here Dr. Cutter (New York) proposed a vote of thanks to the Excursions Committee, which was suitably responded to by Mr. Nevitt, the conductor of the party. Other gentlemen spoke, expressing their great appreciation of the excursion in which they had participated.

Washburn Valley and Farnley.—About forty ladies and gentlemen took part in this excursion. The first stoppage was made at the filtering beds at Weetwood, the process of filtering being explained by Alderman Woodhouse. Next at Adel Church a halt was made, and the principal feature of this almost unique specimen of Norman architecture was shown and explained by the Vicar. At the Lindley Wood reservoir the excursionists were met by Mr. Wurtzburg, of the firm of Greenwood and Batley, and after partaking of refreshment kindly provided for them they were afforded the opportunity of witnessing some very interesting torpedo experiments. At Swinsty reservoir, to which the party next proceeded, a sumptuous luncheon, given by Alderman Woodhouse, was found awaiting them, and then followed an inspection of the tunnel, through which two large mains conducted the water to Eccup reservoir. This tunnel, having been lighted with candles throughout its whole length, presented a very curious and pretty effect. Resuming their drive through Fewston (the sinking village) a call was made at the Fewston Reservoir Lodge, where some curious specimens collected by the keepers were exhibited. Proceeding then by Snowdon Moors to Farnley Hall, the party were entertained to tea by Mr. and Mrs. Ayscough Fawkes, and by them personally conducted over the house and shown the celebrated and fine collection of paintings by J. W. M. Turner, as well as the Cromwellian and other relics. At half-past six the party sat down to an excellently served dinner at the Royal White Horse Hotel, Otley. The health of Mr. Jessop, who presided; of Alderman Woodhouse, to whose courtesy, kindness, and hospitality the success of the excursion was in great measure due; and that of Dr. F. Hall, who acted as conductor to the party, having been drunk and responded to, the carriages were again ordered round, and Leeds was reached about nine o'clock.

Pateley Bridge, Brimham Rocks, Fountains Abbey, and Ripon.—This party, numbering over 100, and conducted by Messrs. C. Richardson, Mayo Robson, and Collier, left by special train at 9 A.M., accompanied as far as Pannal by the members going to Knaresborough and Harrogate. The visitors were met at Pateley Bridge Station by Mr. John Metcalfe, who conducted them through the grounds of Bowerley Hall and up through the charming

ravine of Ravensgill, both of these being kindly thrown open by Mr. Yorke. Those who persevered to the top of the glen were amply rewarded for their exertion by splendid views up and down Nidderdale, and of lovely stretches of heather-clad moors in full bloom. The party then proceeded to Castlestead, where perfect arrangements for their entertainment had been made by Mr. and Mrs. Metcalfe. After partaking of luncheon upon the terrace, soothed by the strains of the local volunteer band, the members wandered about the grounds, which, with its undulations and shady walks, nestling on the banks of the rushing Nidal, here foaming from its tumble over the fall, and surrounded by hills crowned on one side by the rocks of Brimham, on the other by Guyscliff, in other directions presenting far-reaching views of blooming heather-clad moors, made up a picture which the visitors were loth to leave. Some of the more active spirits climbed to Brimham Rocks, others being content to let "distance lend enchantment to the view" of their weird and fantastic outline, and proceeded direct to Fountains Abbey, getting fine views backwards over Nidderdale and in front over the Vale of Mowbray, with the towers of York Cathedral, Rolston Scar, with its "White Horse," and Bolby dimly visible in the distance. At the canal gates the Marquis took leave of the party, which then drove through the park to the Unicorn at Ripon. Pressure of time prevented many seeing the Cathedral, but those who did so were most kindly received and conducted over it by the Dean. The Palace was reached at 6 o'clock, and the party, now increased to 122 by visitors who had come direct from Leeds, were entertained at dinner by the Bishop of Ripon and Mrs. Boyd Carpenter, who charmed everyone by their genial kindness and courtesy. After a stroll through the grounds, the party proceeded to Ripon Station, Leeds being reached at 9.45; and so concluded one of the most enjoyable excursions in the history of these meetings.

Malham Cove, Gordale Scar, and Settle.—This party left Leeds at 8 A.M., and after passing Carlton Hall (the birthplace of General Lambert), proceeded to Kirkby Malham Church, where they were met by the courteous vicar, who acted as guide. They were shown its curious niches, quaint pews and font, and the interesting signature of Oliver Cromwell when attesting the marriage of a dalesman there. On reaching Gordale, the magnificent scenery of which was the subject of much admiration, a picnic luncheon was served at the foot of the waterfall, which was highly appreciated. A magnificent drive over the heather-clad moors brought the party to Scaleber Force, which was very full of water, and the beautiful glen was brilliantly illuminated with sunshine; here the party would willingly have lingered. A start was made for Settle, where an excellent dinner awaited them at the picturesque Ashfield Hotel, for which all were prepared and to which ample justice was done. At 4.30 the carriages were brought round, and the party visited the picturesque Catterick Force, with its many smaller but equally beautiful falls, and after returning to the hotel, the ladies had just time for a hurried cup of tea before returning to the train. On the station a very hilarious departing scene showed that the laborious day had been brought to a very satisfactory termination.

THE Viceroy of India, during his term of office, has placed at the disposal of the Central Committee of the Lady Dufferin Fund five silver and two bronze medals for the annual competition among the female medical students. The former are awarded to Calcutta, Lahore, Agra, Bombay, and Madras, and the latter to medical schools at Hyderabad and Agra.

SEAMEN'S HOSPITAL.—In the last year reported on (1887), there were sixteen seamen treated for delirium tremens in the Seamen's Hospital at Greenwich, and these cases are said to be on the increase. There had also been during the previous three years a decided increase in that hospital of seamen suffering from diseases induced by destitution, insufficient food, and exposure to wet and cold, consequent on difficulty in seamen obtaining ships.

PRESENTATIONS.—Dr. Conner, of Manningham, on the occasion of his giving up practice in the town, has been presented by a number of patients and friends with a handsome dish and a large electro-silver tea tray. Dr. Conner had been only seven years at Manningham.—Mr. T. A. Collinson has been presented with a handsome set of brass table ornaments by the nursing staff of the Durham County Hospital, on the expiry of his term of office as house surgeon.