mon public opinion that the poor obtained the best relief at hospitals. In reality, only remarkable or serious cases obtained special attention, and the out-patient officers were always overworked. The number of cases seen in hospital should be limited, and the rest should be scattered amongst certain outside practitioners, appointed in proportional districts of a town. It was important to exclude patients really poor, but subject to a craze for physic, and others who simply came to get drugs, which they sold to others outside. This had been detected at the Bradford Infirmary.

An expedient to cut off these parasites had been successfully tried at certain hospitals. A nominal charge was made to every patient receiving medicine, remitting it only to patients above suspicion, who produced evidence of inability to pay. That some such method would be an excellent deterrent to unworthy applicants there had just been experimental proof in regard to dental extractions. In the month of May, 1885, the number of teeth extracted gratuitously at the Bradford Infirmary was 230. This number varied month by month, a few less or more, till May 1886, when, at the suggestion of Dr. Bell, a fee of threepence was ordered to be charged to each applicant for extraction; at once, the number of extractions fell from 230 to 63, or about one-fourth. If a fee of threepence deterred applicants, suffering positive pain, from seeking gratuitous relief, a slightly larger fee would surely banish applicants possessing imaginary ailments, or positive thieving propensities. But a proposal of this kind might raise objections. Subscribers might consider that such a demand contravened the first principle for which their benefactions were made: that of affording medical assistance to those temporarily incapacitated by disease. It might be replied that the charge was too small to weaken the act of undoubted charity which they, as subscribers, intended, or which the authorities and unpaid or honorary staff of the hospital administered. It tended to cut off unworthy applicants, yet would be remitted wherever inability to pay was made clear, and it would be cheerfully paid by the mass of the really deserving. Besides, it would only be exacted when medicine was furnished, and the proceeds could be applied to lessen, in some degree, the increasing outlay of hospitals upon drugs.

Again, general practitioners in the poorer districts of towns might allege that such a charge would act as a sort of bribe to their constituency, to save eighteen pence or two shillings a visit and medicine, and lure their patients to the hospital where they could obtain both for sixpence. These fears, however, were groundless, because, where the plan had been tried, the applicants at the hospital had been lessened. Two safeguards would render the abuse of charity impossible: *a*, the fixing of a scale of incomes, below and above which applicants would be refused hospital assistance; and *b*, the employment of officers of the Charity Organisation Society, or a special official detective paid by the hospital, whose duty it would be rigidly to search into the circumstances of all applicants, and report the result to the hospital authorities, who could thus reject all unworthy cases.

After weeding out every unworthy applicant for hospital relief, the number of deserving patients still remained legion. No rightly constituted mind would question for an instant that the best interests of a community were fostered and worthily exercised in providing for the care of its sick poor. For that reason hospitals existed. It was also to the interest of the community, that they should be wisely and efficiently administered. All bodies, therefore, concerned in their monetary support, ought to be represented in their management; and, above all, their acting staffs should be largely represented on all their boards and committees. Where this representation had been absent, disastrous results had followed, especially where the central executive authority had been vested in one or a few paid officials and directors, who disregarded representative boards of management as well as the medical staff. This evil was shown by the wasteful extravagance in the erection of the colossal, unsanitary, and in one portion of them misapplied, buildings of St. Thomas's Hospital; and, by the paralysis of the best work of an eminent staff, by the severance from them of the control of the nursing arrangements, at Guy's Hospital. In these respects, matters were more judiciously arranged in the provinces. In Bradford, the staff was fully represented, and the general management of the institution by the laity upon its board appeared to be wise and economical. The voices of the staff should have more weight in questions of improvements in the buildings and their sanitation, and of ampler facilities for clinical and pathological work. The laity on the boards of hospitals should learn that the truest economy ran hand in hand with the rapid and successful treatment of patients; and this was only secured where the opportunities for research and experience by the staff were multiplied and perfected. Dr. Goyder then observed that the lay managers often attributed interested motives to members of a hospital staff who sought the extension of facilities for scientific

observation. He pointed out the fallacies underlying this idea. He believed that general practitioners should encourage improvement in this direction by frequent visits to hospitals, in order to keep up their clinical knowledge.

The lecturer then dwelt on the necessity for the control of the nursing in a hospital to be in the hands of the medical staff. He deprecated the aggregation of the sick into large and imposing edifices, and believed that the skill in battling against disease and vitiated air in colossal hospitals might meet with still greater success in the homes of the people, when those homes had been rendered healthy. Dr. Goyder believed that hospitals should be smaller and more scattered, and officered by practitioners living close to them, who best knew the character and social conditions of the surrounding population. More convalescent hospitals were needed, and incurables ought to be treated in special hospitals.

Dr. Goyder believed that this decentralisation would be beneficial and not harmful to students. Their anatomical studies should be pursued in institutions far from hospitals, and afterwards they could go through their clinical education under far healthier conditions than at present. Under the proposed system, patients need not be worried by large classes of students, for the students would be widely distributed over several district hospitals, where they would obtain a sound clinical education. The student's health must also be considered, for he must be strong in order to be of service to the community in after-life. Hence dissecting-rooms should not only be built far from hospitals if possible, but should also be well ventilated and well lighted. There was a great necessity for well-paid medical teachers; and, if hospitals were decentralised, the services of medical officers must cease to be honorary.

The reformations proposed in the address lay in the hands of the profession, and only such an organisation as the British Medical Association could bring to bear upon the Legislature and the public the intelligence and force essential to secure the needful changes. It had been said that reforms seldom issued from within corporate and other self-constituted bodies; but it was of the essence of our profession to be continually impelled into inquiries respecting individual, collective, and national health, and the means for this must keep pace with our advancing knowledge. All we wanted, but that was essential, was united action, and affiliation of all the bodies and interests of the profession present and to come. It would be a fatal misfortune that our wish to advance should fall behind the growing requirements of the age, for the so-called rising democracy was becoming an educated, lynx-eyed, and invading force, which tended to unsettle or overthrow everything which was not in advance of itself. Our knowledge was of a kind which, peculiar in itself, required the devotion of a life to master. Let us only be steadfast in our efforts to perfect and ennoble it more and more, and then we should have the State and people with us, and never against us.

THE RECOVERING POWERS IN OLD AGE.

Read at the Meeting of the East Anglian Branch in Ipswich.

By G. M. HUMPHRY, M.D., F.R.S.,
Professor of Surgery in the University of Cambridge.

In a paper read at the Royston meeting of this Branch, and published in the *BRITISH MEDICAL JOURNAL*, July 12th, 1884, I called attention to the rapidity with which wounds, ulcers, and fractures are often healed in aged persons, adducing evidence from information supplied by members of the Association in reply to a Collective Investigation inquiry. I have since received much additional evidence bearing on the same point, and hope that the contrary impression which has arisen, rather as an issue of probability than as a result of observation, is beginning to be modified.

In that paper I endeavoured to show that the failure of union in intracapsular fracture of the neck of the thigh-bone, upon which so much stress has been laid, is due to the peculiar conditions of the part, to the separation of the broken surfaces, to the buried position of the inner fragment in the cavity of the acetabulum, which prevents the formation of any uniting medium around it, as well as prevents the contact of the fractured parts, and also to the bathing of the fractured surfaces by synovial fluid, wherein the products, which might have subserved to repair, are lost. The neck of the thigh-bone is, indeed, circumstanced much in the same manner as the patella and the olecranon; and that failure of union in it is due to the causes I have indicated, and not to the age at which the accident occurs, is

proved by the fact that union—bony union—will take place, as it also does in the bones I have just mentioned, well, firmly, and quickly, if the fractured surfaces be impacted or kept in close contact, and also by the fact that, when the fracture occurs in the region of the neck of the thigh-bone where these causes do not exist, namely, at or external to the attachment of the capsule, bony union rarely fails to take place quickly, at whatever period of life the lesion is experienced. It is a fracture of common occurrence in old people; yet not many specimens showing want of union; when the patient has survived six weeks, are to be found in our museums. However slight may have been the cause of the lesion, however atrophic may be the bone, however old the patient may have been, bony union has almost always taken place. It may be asked whether intracapsular fracture is more likely to unite if it occur at an earlier period of life. The answer to this cannot, I think, be given. It is an accident that seldom occurs; and I do not remember to have seen any specimens which bear upon the question.

It is not to be wondered at that persons are slow to credit old age with much reparative and recovering power; and, in the paper to which I have referred, I wrote as follows.

"We should not have thought that, when the nutritive forces are generally failing, when strength and weight are diminishing, when repair is each year less and less able to keep pace with wear, as evinced, among other things, by the fact that exhaustion is more quickly induced and less quickly recovered from; when the brain is shrinking, and memory and other mental powers are lowering, and when the circulation is becoming weaker—that, under these circumstances, the nutritive or reparative processes concerned in breach-closing, in the healing of wounds and ulcers, should manifest an increase of energy, at any rate of rapidity, in carrying on their work. I do not know well how to explain it, but this exceptional phenomenon of nutrition is not peculiar to old age. It may be observed in some other lowered conditions. The wounds in patients exhausted by large losses of blood usually heal quickly, as they also do after operations for cancer, and in many other debilitated conditions. I do not mean persons of naturally strumous temperament, but persons who have been weakened by illness, or in other ways. So do, commonly, the gaps caused by carbuncles and bed-sores; and very remarkable is the quick healing of the stump left by the separation of the parts in senile gangrene—that is to say, this evidence of vital energy is manifested in the part next above that which was unable to keep alive at all; and, after fracture of the spine, we sometimes see quick sloughing and quick healing in closely adjacent parts. An exception must be made of certain impaired conditions of the nervous system, in which wounds and sores are sometimes very troublesome."

That paper referred exclusively to the repair of manifest breaches in the body, to the healing, namely, of ulcers, wounds, and fractures.

At the present time, I wish to call your attention to that which is even more remarkable, the recovering or reparative power from diseases or illnesses and their effects, which is not unfrequently manifested by aged persons; and I will do so by reciting some instances which have been furnished me in the replies that have been kindly sent by members of the profession to the inquiry respecting old age instituted by the Collective Investigation Committee of this Association.

1. James Pearson, aged 104, recovered from attacks of diarrhoea at 75 and 90, and from fractured neck of the thigh-bone at 101. In what manner the bones united cannot be determined. He goes about with crutches. (Information given by Dr. Reardon, of Stamford Hill.)

2. Rebecca Burn, aged 104, Dr. Whitby, of Hunstanton, relates, had injury to her hip from a fall at 96, which kept her in bed two or three months, and she quite recovered.

3. Fanny Covill, aged 100 and six months, whom I saw in Yorkshire, in August last, had a severe fit with loss of consciousness, for which she was bled, at 60; and, again, two fits of the same kind at 70; she quite recovered, and had none since.

4. William Chappell, aged 100, had renal dropsy at 82, which lasted two years, and was cured by elaterium. He had a large slough on the thigh, from a bruise, at 99, and quite recovered. (Dr. Haslewood, of Rhymny.)

5. Miss Hastings, aged 104, had acute bronchitis at 95, at 98, and 99, each time severely, had pneumonia and erysipelas of the head in her hundredth year. She recovered from all these; and, in her 104th year, had an attack (severe) of pneumonia in both lungs, which passed through its ordinary course, and, in the words of Dr. Pike, of Malvern, she threw off the disease wonderfully, and the lungs cleared up well, leaving only the chronic bronchitis, from which she had latterly suffered; but she did not again fully recover her strength.

6. M. L., aged 108, fractured the wrist at 104. Good callus formed, and there was complete consolidation of the fracture. (Information derived from a resident at Nantes; whether medical man not stated.)

7. William Hodge, aged 101, had shingles at 99, and recovered. (Mr. Woodd, of Calstock.)

8. Ann Trew, aged 101, recovered from a severe attack of bronchitis at 82. (Miss Ralmer, of Snetterton.)

9. Mrs. Pellatt, aged 104, had severe fever at 84, and quite recovered. (Dr. Hovell, of Elstree.)

10. Dr. Black, of Wimpole Street, tells me of a lady who recovered rapidly and completely from a Colles's fracture at 89, and completely from burns and scalds on the hands at 92.

11. Dr. Horder, of Cardiff, relates of a man, aged 92, that he has had two attacks of bronchitis and one of pneumonia in the last four years.

12. Dr. Campbell, of Liverpool, relates of a woman, aged 97, that she completely recovered from an attack of acute bronchitis at 95.

13. I was told that James Betts, aged 91, whom I saw at Norwich, had severe erysipelas of the head and face at 89, and quite recovered.

14. Mr. Ronaldson, of Haddington, states that a man, aged 97, had a severe attack of bronchitis at 88, resulting in complete recovery.

These cases, it is true, are not very numerous; but, when taken in conjunction with the fact that aged persons do not often suffer severe illnesses, and that, when they are attacked, they often die in the early stage of the affection, they are sufficiently numerous and startling to arrest our attention, and to suggest some reflections.

First, I think we must notice the difference, just hinted at, which is manifested in old age between the little power they show of bearing up against the first impulses or initial shocks of disease and their power of recovering from its effects—between the power to withstand the tidal flow of disease, and the power of repair during its ebb. This seems to be very marked. The depression associated with oncoming malady, and produced probably, in part at least, by the rise of temperature attendant on it, is ill-borne by the aged, a considerable number of whom sink at the very commencement of an attack, before the disease has had time to make an appreciable impression on the tissues. In reference to this, we must bear in mind the difficulty which is experienced by old persons in maintaining heat, because for the production of a given amount of heat a proportionate metabolism, or tissue-change, in other words, a proportionate exercise of nutritive force and nutritive activity, is required. Hence in the aged, even in health, the temperature of the surface is hardly maintained, and cold is ill-borne. Experience shows, for instance, that men below the middle period of life are alone able to resist the severity of the arctic regions, and that, accordingly, the selection for the exploratory voyages in those sun-bereft and perilous seas must be confined to the young. As we advance in years, and the fires are slackening and the supply of fuel lessening, it becomes more and more necessary to economise heat, to prevent its being dissipated on the atmosphere, to reserve it for the internal and more vital parts, and to reserve the force expended in its production for the necessary functions carried on by those parts. Now, the early stages of disease or illness are usually attended by an exaltation of temperature with an attendant general depression, evidenced by chilly feeling and sense of weakness proportionate to the severity of the attack. A rise of temperature, under these circumstances, in the aged is shown to take place, as pointed out by Charcot, by thermometric examination of the rectum, though the skin may fail to give sign of it. This means, of course, irrespective of other evils, a waste of heat and a wasteful employment of heat-producing force, which leaves too often an insufficient margin for the necessary processes of life, and so causes a fatal depression. Hence, many an old person, who has appeared to be in good health, dies almost without a struggle, perhaps from a chill, before it is known that a cold has been caught, or before any manifestation of illness has attracted attention. From this we gather the importance of watching for, and ministering to, the first signs of incipient affections in the aged; and every day experience tells how much life may be prolonged in old persons, as well as in the young, by such careful attention; and we are the more encouraged to these attentions in the case of the aged, by finding that, of those who survive the initiatory stages of illness, not a few hold on through the attack, even though it be severe, and make their way to complete, quick, and surprising recovery.

It seems strange that failure and suspension of nutrition, which mean sinking and death, should be near neighbours to facility of re-

pair and recovery, which look like evidences of extraordinary nutritive action. This paradox, to which I have already referred, may receive some explanation from the lowered irritability—the lessened nerve-susceptibility—which is a well known feature of the senile frame, and which gives it much immunity from disease. Repair, after all, makes but slight extra demand on nutritive or circulatory activity. It, like developmental work, to which it is in some sort a return, goes on best in the quiet and with little excitement. The granulation and new and tissue-forming, or tissue-repairing, cells are very easily disturbed in their delicate work, and are liable to be so by the vascular or nervous excitation which is easily engendered in the neighbourhood, and which is induced in the young more easily than in the old, and is the source of the festering, and the irritation, and inflammatory surroundings which prove so troublesome in the treatment of the wounds and sores of children. Indeed, it is over-action that we have most to fear as the enemy to repair. Hence, the limitation of irritability or responsive action, the passive condition of the structures, is probably one cause of the large reparative results which we see in some of the lower animals, and may, in like manner, be to some extent the cause of the good and quick reparative results which we often see in the aged. But whatever may be the cause, this capacity for recovery is a factor that must be taken into account in our treatment of the aged, encouraging us to use our best efforts for their restoration, and telling us that, as we are reluctant to give up a child, so, also, we should be slow to give up an old person.

SANITARY REFORM A HUNDRED YEARS AGO.

Abstract of a paper read before the Lancashire and Cheshire Branch.

By CHRISTOPHER JOHNSON, F.R.C.S.

MR. JOHNSON said that there was a growing disposition to underrate the importance of the results which had accrued to the people of this country from the application by the Legislature of the teachings of science to the regulation of social life. He proposed to take a retrospective glance at the state of this country when no such regulations existed, and setting grandfatherly neglect and "grandmotherly legislation" side by side, to see which was preferable.

He quoted from the *Transactions* of the College of Physicians for the year 1785 certain facts contained in a paper by Sir George Baker, Bart., Physician-in-Ordinary to the Queen. Seventy-three poor children, chargeable to the parish of St. James, Westminster, had been brought from a house at Wimbledon to a home prepared for them in King Street, Golden Square, on September 24th, 1782. The children were all in good health when transferred; but on October 8th, 1782, a girl, aged 13, was suddenly seized with excruciating pain in the region of the stomach, and in the back, followed by violent headache, delirium, and convulsions. Fresh cases, with similar symptoms, occurred in quick succession. Sir George Baker found that in one room, containing beds for eighteen children and one servant, nine of the girls and the servant were all suffering from the same malady; and that the disease was confined to the inmates of this room. In this chamber, which measured twenty feet in length by sixteen in breadth, and eight feet in height, there were ten beds—nine for the use of the girls, who slept two in a bed; and one for the servant. The chimney had been stopped up with bricks; and at night the door was shut, and the windows closed with shutters. Three candles and an oil-lamp were burnt in the room, but gave little light, often becoming almost extinguished. In an adjoining room of the same size, where eighteen girls slept in nine beds, but where the chimney was not blocked, no cases of illness had occurred. The nine sick children, who were the only girls in the first room over 13 years of age, were removed to a more airy room, and had a better night; but the symptoms recurred on the following morning, and did not entirely disappear for some days. Sir George Baker concluded that the symptoms were due to vitiated air, though the respiratory organs were not affected, and was confirmed in this by the case of a young man related to him by Dr. Heberden, who had been shut up in a room with burning charcoal. The symptoms noted in this young man were of a similar character, and he also suffered from a relapse. Mr. Christopher Johnson inquired whether deficient ventilation may not have had as much to do as overpressure of mind in the case of school-children, who scream at night, and have other anomalous symptoms.

He next referred to the description, published by Dr. Campbell, of Lancaster, in 1785, of an epidemic of fever which prevailed so extensively among the cotton-mills in various parts of Lancaster and Backbarrow, and was of so malignant a character as to excite a panic

among the operatives and their neighbours. Dr. Campbell, by attention to ventilation, fumigation, disinfection, and cleanliness, succeeded in checking the epidemic. At about the same time, an inquiry was held by four Manchester physicians, Drs. Percival, Cowling, Easton, and Chorley, into the cause of a similar epidemic prevalent in the cotton-mills at Radcliffe. The report of these physicians fully recognised the importance of ventilating the workrooms by means of large windows on opposite sides, and open fire-places; it recommended that the rooms should be kept clean, and whitewashed thrice yearly; that the privies should be washed daily, and properly ventilated; that the hours of labour should be shortened, and a longer rest allowed in the middle of the day; and that children under 14 should be specially exempted from long hours of labour, and given opportunities for attending school. In these recommendations there was, Mr. Johnson pointed out, the outline of a complete Factory Act. The necessity for legislation was demonstrated, and the direction and extent was clearly defined.

Passing next to the condition of prisons in the last century, he referred to the essays of John Hunter, Dr. Heysham, of Carlisle, and Dr. Campbell, of Lancaster, on Typhus Carcerum (Jail Fever), and described the circumstances under which forty persons, including the Lord Mayor, two judges, an alderman, and other officials, died of a fever contracted at the Old Bailey sessions in 1750. Dr. Heysham stated that the first private house in which the disease appeared was occupied by half-a-dozen poor families, and that not only were the rooms small, but that, to avoid the window-tax, every window that even poverty could dispense with was shut up.

Mr. Christopher Johnson next described the method of inoculating for small-pox, and showed that, though it was followed by a great reduction in mortality, several hundred persons having been inoculated in Carlisle during the last six months of 1779 without a death, while 90 of 300 persons who caught the disease in the ordinary way succumbed, it yet presented many disadvantages.

As showing that the spirit of inquiry was alive at the date referred to, Mr. Johnson mentioned some experiments made by Dr. Home on the relation between the pulse and temperature, and quoted from Duncan's *Annals* a passage with regard to the antiseptic properties of "rectified oil of tar," which showed that Dr. Edmund Saunders, of Plymouth, if he had not discovered carbolic acid, had prepared something very like it.

In conclusion, Mr. Christopher Johnson said that any expenditure on sanitary improvements by this country had been repaid a hundred-fold, and reminded those members of the medical profession who considered every duty imposed on them by Government a tax, that they ought rather to look upon it as a legacy duty, a light legacy duty on the rich inheritance which their forefathers by their energy and perseverance, by their honesty and courage, by their patriotism and self-denial, accumulated for them.

TRAUMATIC ENTERITIS AND PERITONITIS: ANOMALOUS CONDITION OF INFERIOR VENA CAVA AND ILIAC VEINS.

By G. A. HARRIS, M.R.C.S., L.R.C.P. Lond.,

Surgeon Bengal Medical Service; Joint Civil Surgeon, Simla.

THE details of the subjoined case are of some interest, inasmuch as the anatomical condition found at the *post mortem* examination is, to the best of my belief, unique.

O. L. W., aged 22, Eurasian, was admitted into the General Hospital, Calcutta, under my care, on the evening of May 24th, 1884, with a history of having suffered for the past twenty-four hours from "colic." On admission, he himself gave no history of an injury, and it was not until the next day, that one of his friends told me that on the day previous to coming to hospital, W. had met with a serious injury at football, being violently struck in the abdomen. The chief symptoms previously to coming to hospital were severe and constant abdominal pain, and almost incessant vomiting; and on admission to hospital these were the most important symptoms, with also some collapse.

The following day he was much worse, pulse small and wiry. Temperature 102.4°. He had excessive abdominal tenderness and pain, with some tympanites, anxious expression of the face, restlessness, intense headache, and vertigo. The bowels were moved very frequently during the day, sometimes in his clothes, and with intense tenesmus, the motions being scanty and of a grass green colour, and containing shreddy mucus streaked with blood; the skin was pungently hot and dry, and the tongue thickly coated.