

## WHAT HAVE EXPERIMENTS ON ANIMALS DONE FOR PHYSIOLOGY?

### II.

AN eminent physiologist, to whom we have put this question, has favoured us with the following reply.

You ask me to state my opinion as to the question, whether or not the science of physiology has been materially advanced by the practice of making experiments on living animals.

The only way in which a correct opinion can be formed on this subject consists in estimating the proportion in which the fundamental facts of the science have been derived from such experiments. To do this completely, would be a long and difficult task, though not impossible; for in every course of physiology, in every text-book, there is found ready to hand such a synoptical view of this subject as is calculated for his purpose. Any intelligent student who has carefully read through some one of those elementary treatises on physiology which represent the present position of the science, such as those of Ludwig, Brücke, Wundt, Fick, or Hermann, would, I think, be competent to form a reliable opinion on the subject.

In examining any such work, he would find that each chapter might be described as consisting of little more than a system of experimental results, stated and arranged in such order as to exhibit to the reader their mutual bearing on each other. He would find, in short, that of all sciences physiology is, at the present stage of its progress, more entirely experimental than any other, so that the physiological teacher or writer is compelled by the nature of his subject strenuously to guard against laying down general principles or giving any shape to his conclusions more definite than that which they necessarily derive from their experimental basis.

I have this morning set down a series of elementary questions on the great functions of respiration, circulation, digestion, and secretion. I send them to you. You will, I am sure, agree with me that they are all very elementary—such, indeed, as might with propriety be set to a student at the end of his first course of physiology. Yet, not one of them could be answered without stating the results of experiments on animals. The obvious significance of this fact is that, if experiments ought not to be made, physiology ought not to be taught, and students ought not to be examined in it. If it be wrong to obtain experimental results, it is, at least, equally objectionable to use them.

I may add, that I do not think it at all likely that experiment will be less needed in physiology for some time to come than it is at present. Anyone who is willing to take the trouble to cast his eye over the records of a recent physiological research as embodied in such works as Ludwig's *Arbeiten*, or Pflüger's or Du Bois-Reymond's *Archiv*, will have no difficulty in satisfying himself that the rapid progress which is now being made in the application of the exact methods of chemistry and physics to the investigation of the phenomena of life, would almost entirely cease, were the lower animals exempted from lending their unwilling aid to the physiologist in his laborious investigations. It is further to be considered in reference to this point, that we have only, as it were, just attained to that exactitude and method in experimental work which gives to such work its highest value, so that there never was a time in the history of physiology or pathology at which the competent investigator could look forward so confidently to the attainment of valuable results as he can at the present moment.

I do not imagine that among the many intelligent and highly educated persons who are now agitating against what they call vivisection, there are any who seriously intend to obstruct the progress of scientific investigation. But I have no doubt that many either forget, or were never aware, that it is by the method they so stigmatise that every great step has been made in the acquirement of the knowledge, which we now possess of the physical and chemical processes which constitute our bodily life.

### LIST OF QUESTIONS.

**Circulation.**—1. State by what mechanical agency the circulation is maintained, and (approximately) what quantity of mechanical work is done per minute in maintaining it.—2. What is the velocity of the blood-stream in the great arteries: by what means can it be measured?—3. Describe the vaso-motor nervous system, and state what is known as to the situation of the vaso-motor centre.—4. State what is known as to the functions of the nerves of the heart. By what channels is the influence of the cerebro-spinal nervous centres exercised on the heart?—5. Describe the capillary circulation, referring to the modifications it undergoes in irritated or injured parts.

**Respiration.**—6. Explain the fact that the organs contained in the thoracic cavity are exposed to a pressure less than that of the atmo-

sphere. Prove the fact itself, and state its influence on the circulation.—7. State what is the action of the internal intercostal muscles in respiration.—8. Describe the phenomena of dyspnoea, and prove that they are dependent on defects of oxygen, not on excess of carbonic acid.—9. Prove that the carbonic acid discharged in respiration is partly derived from the decomposition in the pulmonary capillaries of the carbonates of the blood.—10. What are the functions of the superior laryngeal nerve in respiration?—11. Describe the absorbent system of the lungs.

**Animal Heat.**—12. What grounds exist for believing that the cerebro-spinal nervous system exercises a direct influence on the temperature of the body?—13. Describe the distribution of temperature in different parts of the body of the higher animals, and state what is the probable temperature of the blood in man.

**Digestion.**—14. Explain the fact that during mastication of food the secretion of saliva is increased. State by what changes in the salivary glands this is accompanied.—15. Explain and account for *post mortem* digestion of the stomach.—16. Explain the mechanism of vomiting.—17. State what are the effects of reabsorption of the colouring matter of bile, and explain its mechanism.—18. Prove that the liver contains in large quantities a substance which is convertible into grape-sugar, under the influence of amylolytic ferments.—19. Describe the peristaltic contraction of the intestines, and state by what nerves and nervous centres it is governed.

**Kidneys.**—20. State what is known as to the conditions on which albuminuria depends.—21. State what is known as to the seat of origin of urea in the animal economy.—22. Describe the absorbent system of the kidney.—23. Describe the structure and functions of the ureters.

## ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AT the Quarterly Meeting of the Council of the College, held on Jan. 14th, a resolution was brought forward by Sir James Paget, and adopted by the Council, the purport of which was to propose a method of appointing Examiners under any conjoint scheme for an examination for practice in England, which method, if approved, may be submitted to other authorities co-operating in such scheme, and, if accepted by them, may be adopted by this College in the event of its obtaining the Enabling Act. The outline of the plan is as follows: The appointments of Examiners to be divided among the co-operating authorities; each authority to make the appointments assigned to it in such way as it may think fit; the appointment of not fewer than ten Examiners, nor less than one fourth of the whole number, including therein not less than three-fourths of the Examiners in Surgery, and not less than half of those in Anatomy and Physiology, to be assigned to the Royal College of Surgeons; the Universities to appoint one fourth of the Examiners in each of the subjects of examination; and the rest of the Examiners, including one-fourth of those in Anatomy and Physiology, and three-fourths of those in all other subjects except Surgery, to be appointed by the College of Physicians and the Society of Apothecaries, in such proportions as they may think fit; supplemental Examiners not exceeding one-fourth of the ordinary Examiners to be appointed in each of the subjects of examination, to act in place of ordinary Examiners disabled by illness or otherwise; the supplemental Examiners in Surgery and in Anatomy and Physiology to be appointed by the College of Surgeons, and those in the other subjects by the College of Physicians and Society of Apothecaries, in such manner as they may think fit.

## UNIVERSITY INTELLIGENCE.

### UNIVERSITY OF OXFORD.

**RADCLIFFE TRAVELLING FELLOWSHIP.**—The examination for this Fellowship will begin on Tuesday, February 9th, in the medical department of the museum.

**PHYSICAL SCIENCE SCHOLARSHIPS.**—On Tuesday, February 9th, an examination will be held for at least two Physical Science Junior Studentships, of the value of from £85 to £100 *per annum*, and tenable for five years from the day of election.

**BEQUESTS TO LIVERPOOL CHARITIES.**—Mr. R. L. Jones, timber-merchant, of Liverpool, has left the bulk of his property to the charities of Liverpool, which will, it is expected, benefit to the extent of about £325,000. The deceased gentleman was a partner in the firm of Jones, Bland, and Co., one of the oldest firms connected with the Liverpool timber trade.

cells, brought about the excessive lung-irritation observed, and had this not been checked, serious degenerative changes would probably have taken place. The true nature of the case, however, having been suspected from the first, specific treatment was attended by a perfectly successful result.

Dr. CAYLEY inquired if there were any trouble, such as ulceration, about the larynx, for there might be ulceration of the larynx without loss of voice or hoarseness. He should rather be inclined to the view that, as there was an absence of physical lung-symptoms, the disease in this case was in the larynx.—Dr. SOUTHEY remarked that hæmoptysis occurring, as in this case, in the course of syphilis, was not rare. The source of the blood was doubtful. Without previous complaint, the patient would have a sudden bad cough, and then came the blood, which, as Dr. Farquharson had said, was not frothed. The physical signs were simply loss of vesicular murmur over one part of the lungs. The hæmorrhage, Dr. Southey thought, was due to vesicular extravasation; and probably a thrombus of a pulmonary vein in some part existed.—Dr. BUZZARD inquired into the state of the patient's temperature, and said that it had been shown that, if a high temperature fell under the use of iodide of potassium, it would go far to prove that the case was one of syphilis.—Dr. FARQUHARSON thought the blood looked much more as if it had come from the lung than from the larynx. It was mixed with mucus, as if it had come after prolonged coughing.

## SPECIAL CORRESPONDENCE.

### EDINBURGH.

[FROM OUR OWN CORRESPONDENT.]

*Election of Infirmary Managers.—Antiseptic Properties of Chloral Hydrate.—Mortality in Edinburgh.—Large Number of New Buildings.—The Mammalian Ovary and Ovum.*

THE meeting of Infirmary contributors, which I mentioned last week, was a particularly lively one, the mode of election of the six managers being the disputed point. The Lord Provost, as chairman, ruled that one set of six must be put up against the other, and that it was not feasible to vote for each name individually. This greatly displeased the supporters of the ladies, and there is some talk of the matter being brought before the Court of Session. To prevent any similar confusion in the future, it has been determined that at these annual elections the names of all intending candidates shall be sent in at least a week sooner than the day of election, and a printed list of all candidates is to be handed to each voter as he comes into the meeting, so that he may indicate upon it the names of the candidates for whom he wishes to vote. This is a sensible arrangement, and will probably prevent any legal proceedings being taken in the matter.

A further experiment has, we hear, been tried with chloral-hydrate solution, as a test of its antiseptic properties. Two or more bodies belonging to the University dissecting-room were injected with it, instead of with the ordinary preservative solution. The result was satisfactory; entirely so as regards the skin and muscles; not quite so good with the internal organs. Should further experiment prove that the solution answers the purpose as well as spirit or other preserving agents generally in use, it will certainly be a considerable saving of expense.

The mortality of the city, which was 38.43 per 1000 of estimated population last week, has risen to 44.25 in the week just ended, and is still attributable almost entirely to the very unusual prevalence of chest diseases, induced by the severe weather from which we have lately been suffering. To add to our miseries, a severe epidemic of influenza has been passing over the town for some time past, not adding materially to the loss of life, but affecting health and comfort very considerably. From fever generally the deaths are 35 out of a total of 175 deaths from all causes—this includes 15 from scarlatina, and 5 from diphtheria. One sad case is much talked of, where three children died of the last-named disease within a week, in a house in one of the best and most healthily-situated terraces in town.

For the past few months the pockets of the charitable have been seriously bombarded from many sides at once, for contributions for building purposes. Indeed, the present time is marked by the unusual number of new buildings which are in course of construction, or in embryo, in connection with medical or scientific work. The University new buildings, for which the plans have just been sent in, the New Infirmary, a hospital for incurables, a new maternity hospital, a new and enlarged medical missionary dispensary, in place of the old one in the Cowgate—these are surely enough to tax all our energies before they are completed. It is, from one point of view, unfortunate that they are all endeavouring to push forward their claims at once; but at

all events it shows a vast amount of energy and enterprise on the part of the promoters of medical charities.

At a recent meeting of the Royal Society, Dr. Foulis read an elaborate paper on the Structure and Development of the Ovary and Ova in Mammalia. The paper was the result of an independent investigation of the subject on which Dr. Foulis has been engaged for the past two years. On some points his conclusions were different from those commonly received by anatomists. He holds that the so-called tubes of the ovary are really depressions, resulting from the outward expansion of the adjacent parts through the development of ova. He also concludes, from his observations, that the tunica granulosa of the ovum is formed, not of epithelial corpuscles, as many suppose, but of cells developed in the stroma of the ovary. Another point, on which he laid stress, related to the theory of cell-development. Dr. Foulis attributes a much more important part in the multiplication of cells to the division of the nucleus, than has of late been assigned to it. The paper was illustrated by many beautiful microscopical preparations and drawings, and is to be followed by another, on the pathology and pathological anatomy of the ovary, to be read before the Medico-Chirurgical Society at its next meeting. We understand the papers will shortly be published in one of the journals.

## MILITARY AND NAVAL MEDICAL SERVICES.

MOVEMENTS OF ARMY MEDICAL OFFICERS.—Deputy-Surgeon Prendergast is taken on the strength of the Aldershot division from December 30th, as principal medical officer.—Surgeon Major Murphy has been ordered from the School of Military Engineering at Chatham to Dublin for duty early next month.—Surgeon-Major Comyn has been ordered to proceed in the *Euphrates* to Bombay.—Surgeon H. P. Brown has arrived at Ballinrobe and assumed medical charge of the detachment of the 2nd Battalion 17th Regiment.

OBITUARY.—The late Mr. R. J. O'Flaherty, C.B., Surgeon-General of the British Medical Department in the Bombay Presidency, whose demise took place last month at Bombay, joined the British Medical Service in 1835. He joined the army at Scutari in the beginning of 1854, as sanitary officer to the force there. He accompanied the army to Varna, and was appointed to the medical charge of the Heavy Cavalry Brigade. He went to the Crimea with the brigade, and, after the battle of Balaclava, was appointed to take charge of the transport which conveyed the wounded officers and men to Scutari, where he remained in charge of the General Hospital. While there, he received the thanks of the Duke of Cambridge when his highness visited the hospital, as well as those of other high military and medical officers. For his services, he received a Companionship of the Bath, medal with clasp, and the 5th Class of the Medjidie. He was appointed second medical officer to General Ashburner's Chinese Expedition in 1857, and, on the outbreak of the mutiny, was transferred to India. He arrived in December 1857. In 1858-59, he was with the Malwa Field Force under Sir John Michel. After the suppression of the mutiny he returned to England, and was appointed Surgeon-General in October 1872.

## MEDICAL NEWS.

### MEDICAL VACANCIES.

THE following vacancies are announced:—

ARMY MEDICAL DEPARTMENT.—Surgeons. Applications to be made to the Director-General of the Army Medical Department.  
ATHY UNION, co. Hildare—Medical Officer and Public Vaccinator. Salary, £120 and fees.  
BAKEWELL UNION—Medical Officer for the Bakewell District and Workhouse. Salary, £25 and £36 per annum respectively.  
BECKETT HOSPITAL AND DISPENSARY, Barnsley — House-Surgeon. Salary, £140 per annum, with furnished rooms, gas, and coals.  
BIRMINGHAM and MIDLAND FREE HOSPITAL FOR SICK CHILDREN—Acting and extra-Acting Physicians. Applications not later than February 3rd.  
BIRMINGHAM GENERAL DISPENSARY—Resident Surgeon. Salary, £130 per annum, with furnished apartments, coals, light, and attendance. Applications on or before the 20th inst.  
BLACKBURN UNION—Medical Officer for the Harwood District. Salary, £25 per annum.  
BRIDGWATER UNION — Medical Officer for No. 2 District. Salary, £70 per annum.  
CASTLE WARD UNION—Medical Officer for the Ponteland District. Salary, £20 per annum. Also, the Workhouse. Salary, £30 per annum.  
DERBYSHIRE GENERAL INFIRMARY—Assistant House-Surgeon. Board, lodging, and washing, but no salary. Applications to Secretary.  
EMSWORTH—Certifying Factory Surgeon.

**ESSEX LUNATIC ASYLUM**—Second Assistant Medical Officer and Dispenser. Salary, £100 per annum, with board, lodging, and washing.

**FIFE AND KINROSS DISTRICT ASYLUM**—Assistant Physicianship. Salary, £80, with board, etc. Apply to Dr. Fraser, Medical Superintendent, Cupar-Fife.

**GRAVESEND and MILTON UNION**—Medical Officer for the District of Milton, and Workhouse. Salary, £85 per annum, and fees. Applications to be sent in on or before the 20th instant.

**HARRIS, Parochial Board of**—Surgeon. Salary, £66 per annum, including vaccination and medicine for the poor. The gentleman elected will get £90 per annum for attending the ratepayers and cottars within South Harris. Applications to be made to the Chairman of the Parochial Board of Harris.

**HEADINGTON UNION**—Medical Officer for the Wheatley District. Salary, £70 per annum.

**HULL GENERAL INFIRMARY**—Dispenser. Salary, £75 to £100 per annum. Election will take place on the 28th instant.

**HOSPITAL FOR WOMEN, Soho Square**—Surgeon and Assistant Physician.

**INDIAN MEDICAL SERVICE**—Twenty appointments as Surgeon. Examination in February 1875.

**KILCHRENNAN and DALAVICH, Parochial Board of**—Medical Officer. Salary, £60 per annum. Applications, on or before the 30th instant, to W. J. B. Martin, Ricriun, Lochgilhead.

**LEEK UNION**—Medical Officer for the Endon District. Salary, £20 per annum.

**LICHFIELD UNION**—Medical Officer for the Alrewas District. Salary, £35 per annum.

**LOCHMABEN, Parish of, Dumfriesshire**—Medical Officer. Salary, £50 per annum, and fees. Testimonials to be lodged with the Inspector of Poor on or before the 16th instant.

**MIDDLESEX LUNATIC ASYLUM, Hanwell**—Assistant Medical Officer.

**MITFORD and LAUNDITCH UNION**—Medical Officer for the Workhouse. Salary, £45 per annum.

**NORTH BRIERLEY UNION**—Medical Officer for the Seventh District.

**NORTH-EASTERN HOSPITAL FOR SICK CHILDREN, Hackney Road E.**—House-Surgeon. Salary, £100 per annum, with attendance, rooms, coals, and light.

**OKEHAMPTON UNION**—Medical Officer for No. 1 District. Salary, £35 per annum. Applications to be made on or before the 22nd instant.

**PLYMOUTH UNION**—Medical Officer for No. 3 District.

**POPLAR and STEPNEY SICK ASYLUM DISTRICT**—Assistant Medical Officer to the Asylum.

**REDDITCH and DISTRICT MEDICAL ASSOCIATION**—Medical Officer. Salary, £150 per annum, with fees and unfurnished house.

**ROYAL FREE HOSPITAL**—Junior House-Surgeon.

**ROYAL INFIRMARY FOR WOMEN and CHILDREN, Waterloo Bridge Road**—Physician.

**ROYAL UNITED HOSPITAL, Bath**—Resident Medical Officer. Salary, £100 per annum, with board and lodging.

**ROYAL EDINBURGH HOSPITAL FOR SICK CHILDREN**—Assistant to the Extra-Physician. Salary, 50 guineas per annum.—Resident Medical Officer. Applications to be made on or before the 20th instant.

**RYDE DISPENSARY**—Physician.

**ST. BARTHOLOMEW'S HOSPITAL**—Assistant Physician.

**ST. LUKE'S HOSPITAL FOR LUNATICS**—Second Clinical Assistant. Board and furnished apartments.

**ST. MARY'S HOSPITAL, Paddington**—Resident Registrar. Salary, £100 per annum, with board and residence.

**ST. MARLBONE GENERAL DISPENSARY**—Physician-Accoucheur. Applications on the 19th instant.

**ST. MARY'S HOSPITAL**—Resident Registrar. Salary, £100 per annum, with board and lodging.

**SHEFFIELD PUBLIC HOSPITAL and DISPENSARY**—House-Surgeon. Salary, £100 per annum, with board, lodging, gas, and washing.

**SMALBURGH UNION**—Medical Officer for the Ludham District. Salary, £52 : 14 per annum.

**STRATFORD-ON-AVON UNION**—Medical Officer for the Welford District and Workhouse. Salary, £50 per annum.

**STRATHKINNESS, Village and District of**—Medical Officer. Salary, £10 from Parochial Board, with £10 from a workmen's club, exclusive of midwifery fees. Apply to Mr. A. Cowper, Kincaid, Cupar Fife.

**TENDRING UNION**—Medical Officer for the First and Second Districts. Salary, £97 per annum.

**TORPHINS in the Parish of Kincardine O'Neil, Aberdeenshire**—Parochial Medical Officer: £45 per annum. Applications to Chairman of Parochial Board.

**TRINITY COLLEGE, Dublin**—Professor of Chemistry: £500 per annum, and fees. Applications to the Rev. Dr. Haughton, Trinity College.

**TYNEMOUTH UNION**—Vaccination Officer.

**UNIVERSITY COLLEGE HOSPITAL**—Resident Medical Officer. Applications not later than February 13th.

**UNIVERSITY OF EDINBURGH**—Additional Examiner in Medicine.

**WEST WARD UNION**—Medical Officer for the Patterdale District.

### MEDICAL APPOINTMENTS.

*Names marked with an asterisk are those of Members of the Association.*

**BLAKE, J. F.**, appointed Surgeon to the Islington and North London Provident Dispensary (Hornsey Road Branch).

**POWELL, G. B.**, L.R.C.P. Ed., appointed Resident Medical Officer of the Nottingham Friendly Societies' Medical Institution.

**SAUL, W.** Wingate, M.D., appointed Surgeon to Her Majesty's Gaol at Lancaster Castle, vice J. Pearson Langshaw, F.R.C.S., resigned.

### BIRTHS, MARRIAGES, AND DEATHS.

*The charge for inserting announcements of Births, Marriages, and Deaths, is 3s. 6d., which should be forwarded in stamps with the communication.*

#### DEATHS.

\***HEALEY, Edward, M.R.C.S.E.**, of Lister Street, Hull, aged 59, on January 9th.

\***STEPHENS, Daniel Wells, M.D.**, at White House, Emsworth, Hants, aged 48, on January 7th.

### OPERATION DAYS AT THE HOSPITALS.

**MONDAY** ..... Metropolitan Free, 2 P.M.—St. Mark's, 9 A.M. and 2 P.M.—Royal London Ophthalmic, 11 A.M.—Royal Westminster Ophthalmic, 1.30 P.M.

**TUESDAY** ..... Guy's, 1.30 P.M.—Westminster, 2 P.M.—Royal London Ophthalmic, 11 A.M.—Royal Westminster Ophthalmic, 1.30 P.M.—West London, 3 P.M.—National Orthopaedic, 2 P.M.

**WEDNESDAY** .. St. Bartholomew's, 1.30 P.M.—St. Mary's, 1.30 P.M.—Middlesex 1 P.M.—University College, 2 P.M.—St. Thomas's, 1.30 P.M.—London, 2 P.M.—Royal London Ophthalmic, 11 A.M.—Great Northern 2 P.M.—Samaritan Free Hospital for Women and Children, 2.30 P.M.—Cancer Hospital, Brompton, 3 P.M.—King's College, 2 P.M.—Royal Westminster Ophthalmic, 1.30 P.M.

**THURSDAY** .... St. George's, 1 P.M.—Central London Ophthalmic, 1 P.M.—Royal Orthopaedic, 2 P.M.—Royal London Ophthalmic, 11 A.M.—Hospital for Diseases of the Throat, 2 P.M.—Royal Westminster Ophthalmic, 1.30 P.M.

**FRIDAY** ..... Royal Westminster Ophthalmic, 1.30 P.M.—Royal London Ophthalmic, 11 A.M.—Central London Ophthalmic, 2 P.M.—Royal South London Ophthalmic, 2 P.M.

**SATURDAY** .... St. Bartholomew's, 1.30 P.M.—King's College, 1.30 P.M.—Charing Cross, 2 P.M.—Royal London Ophthalmic, 11 A.M.—Royal Free, 2 P.M.—East London Hospital for Children, 2 P.M.—Hospital for Women, 9.30 A.M.—Royal Westminster Ophthalmic, 1.30 P.M.—St. Thomas's, 9.30 A.M.—Royal Free, 9 A.M. and 2 P.M.

### MEETINGS OF SOCIETIES DURING THE NEXT WEEK.

**MONDAY**.—Medical Society of London, 8.30 P.M. Mr. Maunders's Second Lettomanian Lecture, "On Wounds and Hæmorrhages; also, on the Use of the Antiseptic Catgut Ligature".

**TUESDAY**.—Pathological Society of London, 8.30 P.M. Mr. Wagstaffe: Papilloma of Tongue. Mr. Sydney Jones: Congenital Dislocation of both Hips (living specimen). Mr. Sydney Jones: Lymphangioma secreting Chyle (living specimen). Mr. Sydney Jones: Hypertrophy of Limb from Disease of Knee-joint (living specimen). Mr. Hulke: Epithelioma. Dr. Hoggan: Microscopical Specimens of Sarcoma in Cod. Dr. Hoggan: Microscopical Specimens of Cancer prepared by a new Process. Dr. Dowse: Invaginated Intestine. Dr. Dowse: Syphilitic Disease of Rectum. Dr. Pye Smith: Enlarged Liver and Spleen without Leukæmia. Dr. David Pearson: Cancerous Breast and Liver. Mr. Cripps: Fatty Degeneration of Muscles of the Leg. Dr. Gowers: Ulcer of Stomach. Dr. Greenfield: Contraction of Coronary Artery; Obstruction of Renal Artery; Fibroid Disease of Heart.

**THURSDAY**.—Harveian Society of London, 8 P.M. Mr. H. W. Kiallmark, "On a Case of Cancer of the Liver".

**FRIDAY**.—Quekett Microscopical Club, 8 P.M. (University College). Mr. T. Charles White, "On the Aquarium as a field for Microscopical Research".—Clinical Society of London, 8.30 P.M. Mr. T. Holmes, "Notes of a Case of Subperiosteal Excision of Os Calcis"; Dr. Thorowgood and Mr. Bywater Vernon, "A Case of Optic Neuritis, with complete Loss of Vision—Recovery under Treatment"; Mr. Pugin Thornton, "A Case of exceeding infrequency of the Pulse".

### NOTICES TO CORRESPONDENTS.

**CORRESPONDENTS** not answered, are requested to look to the Notices to Correspondents of the following week.

**PUBLIC HEALTH DEPARTMENT**.—We shall be much obliged to Medical Officers of Health if they will, in forwarding their Annual and other Reports, favour us with *Duplicate Copies*.

**AUTHORS** desiring reprints of their articles published in the JOURNAL, are requested to communicate beforehand with the printer, Mr. T. Richards, 37, Great Queen Street, W.C.

**CORRESPONDENTS**, who wish notice to be taken of their communications, should authenticate them with their names—of course, not necessarily for publication.

**WE CANNOT UNDERTAKE TO RETURN MANUSCRIPTS NOT USED.**

**COMMUNICATIONS** respecting editorial matters, should be addressed to the Editor: those concerning business matters, non-delivery of the JOURNAL, etc., should be addressed to the General Manager, at the Office, 36, Great Queen Street, W.C.

**DR. DODGSON**.—We are unable to assist our correspondent in the matter. We know of no other medical man who has tried them.

#### THE WORTHING INFIRMARY.

WE very much regret to see that the embroglio at the Worthing Infirmary has increased, owing to the ill-advised action of a small meeting of five gentlemen, who appear to have treated Dr. Goldsmith with studied discourtesy. Without entering into details, which are of considerable complication, we shall only say, that we heartily hope that Dr. Goldsmith will be re-elected for the sake of the cause of infirmity management. The management of the Worthing Infirmary has been admittedly bad, and the reforms which Dr. Goldsmith advocates are such as, we think, every well-wisher of the Worthing Infirmary ought to desire to see adopted. We are heartily glad to see Mr. Cleveland Smith's manly and generous-minded circular, and we trust that no one will be found who will attempt to slip in past Dr. Goldsmith, and so to undermine his professional brother in an undoubtedly righteous contest for useful reforms.

CORRESPONDENTS are particularly requested by the Editor to observe that communications relating to Advertisements, changes of address, and other business matters, should be addressed to Mr. Francis Fowke, General Secretary and Manager, at the Journal Office, 36, Great Queen Street, W.C., and not to the Editor.

#### THE SCOTCH POOR-LAW MEDICAL SYSTEM.

SIR,—I beg to ask your advice in connection with the following circumstances. I commenced to attend a girl suffering from typhoid fever ten days ago. When I intimated the nature of the case to her sister, with whom she stays, she made application to one of the bailies of the town to get assistance from the Board. The bailie communicated with the officials of the parish to which the girl belongs, and in the meantime gave the necessary assistance from his own parish. The girl had never formerly required parochial relief, and as soon as possible after her recovery will provide for herself. There is no medical officer here appointed by the Board; but a pauper may go to any medical officer when in trouble, and the Board will refund the doctor to the extent of five shillings *per annum* for each pauper he may have to attend.

Now, I think five shillings quite inadequate remuneration for attending a case of typhoid fever, and would feel obliged if you would advise me in the manner I ought to act in such a case. Surely, £1 is. would be a small enough fee for having to attend a case of serious illness for three weeks or a month. I shall look for an answer in this week's BRITISH MEDICAL JOURNAL, and am, etc.,

January 5th, 1875.

A NEW MEMBER.

\*.\* The New Member has our hearty sympathy in the case which he has put before us; but we fear that, having attended the girl whose case he cites without, as it appears, any authority from any one to do so, he must be content to take from the parochial authorities just that which they may be disposed to give, even though it may be limited to that wholly inadequate amount which Scotch liberality defines as a sufficient honorarium for attendance on the necessitous sick. Bad as the English system of medical relief undoubtedly is, so far at least as the country is concerned, that existing in Scotland is infinitely worse. The Committee on Scotch Poor Relief, of which Mr. Crawford, ex-M.P., was Chairman, in their report, recommended that the Irish system of dispensary medical relief should be introduced; and subsequently Mr. Crawford brought in a Bill embodying such recommendations. Unfortunately, that gentleman aimed at too much, and his Bill was thrown out on the second reading; but we learn, on the authority of the present Lord Advocate and others, this occurred on no point connected with medical relief, on which subject there existed a general concurrence of opinion, that something ought to be done.

ONE of the latest novelties in the way of charms for watch-chains and guards consists of a piece of lunar caustic tastefully mounted. It is supposed to combine the *utile* with the *dulce* to the wearer, who, immediately he or she has been bitten by a rabid animal, applies the handsomely mounted piece of caustic (perchance a souvenir), and brings the charm of poetry into common life whilst burning out the part bitten by a dog or cat.

#### A MEDICAL ADVERTISER.

THE following is taken from the *Hull News* of December 26th, 1874.

"Medical Dispensary (private), open daily (Sundays excepted), Brook Street (Prospect Street end). Professional consultations: Morning, 9.30 to 11; Evening, 7 to 8.30. Fees.—To the Artisan and Mechanic Classes: Advice and Medicine, 2s.; to the Labouring and Poor Classes: Advice and Medicine, 1s. At the Dispensary only, and within the above-named hours. Midwifery Engagements. Vaccination of the children of private patients only every Tuesday afternoon at Three o'clock. Physician, Surgeon, and Accoucheur, E. H. Lineker, F.R.C.S.E., L.R.C.P. Lond., M.R.C.S. and L.M.R.C.S. Eng., L.S.A. Lond., etc., registered, late Medical Officer in H.M.'s Public and Military Service, etc. (Successor to the late Dr. Brownridge.) Private Residence, 16, Spring Bank.

MR. W. E. FORSTER, M.P. for Bradford, having been requested to lecture on behalf of the Local Hospitals, replied that he did not feel able to comply with the wish of the constituents; but he could not allow the Hospital Fund to suffer from this cause, and enclosed a cheque for £50 in consequence.

#### IS THERE ANY FORM OF SMALL-POX OF A NON-CONTAGIOUS CHARACTER?

SIR,—I shall be glad if you or any of your readers can supply an answer to the above question. We have been visited in this town of late by an epidemic of small-pox, imported some four months since. The Local Board of Health have erected a hospital, where patients are received, nursed, and attended, at great expense to the locality. Recently the rector, who had been most assiduous in his pastoral ministrations to those suffering from the complaint, was laid up and died. The practitioner in attendance certified that his death was caused by "variola sine eruptione". The Local Board and other public bodies were anxious to pay respect to their late esteemed minister, and many visited the corpse, which lay in state for five days; but on the promulgation of the above "cause of death," great anxiety was caused among all classes; and the other medical practitioners were of opinion that if such were the cause of death, it was not right that a public funeral should take place, but that every precaution should be taken for the public welfare. However, the following certificate, which I extract from the local paper, was affixed to the church-door, with the signatures of two medical men attached to it.

"We hereby certify that the late Rev. — died from small-pox poisoning, and herewith add that his illness was not in the least degree infectious."

What we want to know—for I write with the concurrence and for the information of others as well as myself—are these forms of small-pox, viz., *variola sine eruptione* and small-pox poisoning, non-infectious? I cannot find any such nice distinction in any of the books of reference at hand.

For obvious reasons, I do not mention the name of the town, but enclose my card as a guarantee of good faith. I am yours, etc.,

CARBOLIC.

MR. J. M., A. TUTOR, AND H., BIRMINGHAM.—The officials of the College of Surgeons will only be too glad to relieve your anxiety, and that of the 350 candidates, by sending you the result of the recent Arts Examination as soon as the report has been received from the College of Preceptors. There are many hundred papers on the several subjects to be read by the examiners.

#### AN INSURANCE QUERY.

ARE there any instances in which qualified medical men have taken an agency for Life Assurance Companies? What is the opinion of the profession on the subject? Is the proceeding considered compatible with professional dignity?

"INSURANCE."

NOTICE TO ADVERTISERS.—Advertisements for insertion in the BRITISH MEDICAL JOURNAL, should be forwarded direct to the Publishing Office, 36, Great Queen Street, W.C., addressed to Mr. FOWKE, not later than *Thursday*, twelve o'clock.

MR. CHUBB (Torpoint).—Under such circumstances, it is customary and proper to make a separate charge.

DR. J. M. CROMBIE's letter shall appear next week.

#### TO SUCH STRANGE USES MAY WE COME AT LAST.

THE following paragraph appears in the *Irish Times* of December 23rd.

"The Earl Street Medical Hall.—The Earl Street Medical Hall, conducted by Messrs. J. Leonard and Co., has, within the last two years, taken a leading position amongst the medical establishments of the city. The late Mr. John King, of 19, North Earl Street, established there an extensive drug-hall, in which he did a large business as a chemist and druggist, and the Messrs. Leonard, having become possessed of his interest, have since successfully conducted the business which he had previously carried on, with the addition of a compounding department, managed by efficient assistants, under the immediate supervision of Dr. Leonard. The medical department, which forms one of the principal features of the establishment, and to which the utmost attention is paid, is in charge of Dr. Leonard himself, who has had large general practice since the period of his connection with the Richmond, Whitworth, and Hardwicke Hospitals. In what may be called the mercantile department, there is a display of every variety of goods usually found in a medical first-class drug-hall: pomades, hair-washes, creams, perfumes, caskets, bouquets, hair-brushes, toilet-soaps—all of the best quality. Amongst the specialties of the establishment are King's Spanish onion pomade and Spanish onion hair-wash, which have been highly esteemed as toilet requisites, and of which Messrs. Leonard and Co. are sole proprietors and manufacturers. It need only be added, that the Messrs. Leonard are determined that their establishment shall maintain the reputation which it has already achieved, and that it shall be found in every respect calculated to meet the wants of the large and important district in which it is situated."

X. Y. B.—Dr. Laidlaw Purves, Guy's Hospital; Mr. Dalby, St. George's Hospital; and Mr. Field, St. Mary's Hospital.

#### MEDICAL DEGREES AND TITLES.

SIR,—The great body of general practitioners have been hardly used by recent changes in the regulations for qualification as compared with the old system. A student of twenty or twenty-five years ago found that the Apothecaries' Society's license was a *sine qua non* to confer a legal right to practise; and M.D.s of Scotland could not legally practise their profession, and recover fees, in England and Wales. One has even heard of threats of prosecution against them for practising unlawfully. Under these circumstances, it was not surprising that men felt themselves compelled to go to the "Hall"; and they voluntarily went to the College of Surgeons, to the neglect of the Scotch Universities, which were altogether outside the pale of English law. All this was very anomalous, and is now properly changed; but I think that long ere this something ought to have been done to affiliate the general practitioner, who was the victim of circumstances, to some medical college on the *ad eundem* principle. Moreover, at the time to which I refer, degrees were only sought for by pure physicians, and they would have been considered a bar to general practice. The present fashion of M.D.-general practitioner is a hybrid of recent birth. The degree of M.D. is not a fixed quantity, but ranges, through a wide scale, from high honour to the utmost disrepute. Many degrees are no higher, and some a great deal lower, than the Apothecaries' license. It is not reasonable to concede the same even nominal status to a degree obtained after prolonged residence, great expense, and high standards of examination, and to others conferred after a curriculum not longer, and tests not higher, than those of the Hall. I leave out of account the purchased "honour". Most surgeons must know of instances of men, before the late Acts, practising without any qualification under the wing of some qualified, perhaps absent, practitioner, until a stir was made. Then the gentleman's face was missed for a time, and he returned from some refuge for incompetence dubbed with the degree of M.D., or he obtained what some of your correspondents call the "coveted distinction" without any change of air and scene. In almost all towns, the positions of distinction and repute are quite as much held by plain M.r.s. as M.D.s, sometimes more so; and to many such men the drawback to the title of Doctor would be the dubious merit of their *confrères* in its possession. The present state of things is a relic of medical barbarism; and something ought to be done, similar in principle to the College of Surgeons' early fellowships conferred upon surgeons of definite age and standing, to remove the injustice. You have recently said that, as a general rule, a man's qualifications remain what they are when he leaves London; and no doubt this opinion is quite accurate. If time permitted, the general practitioners could very well compete with young doctors, some of whom, according to the testimony of your own pages, do not know measles when they see it, although in theory they have taken honours. To the busy practitioner, the loss of time puts it out of the question, and he will not purchase; so some other remedy must be found, or he must remain a victim to an injustice which is creditable to the profession and subversive of its best interests.—I remain, Sir,

December 17th, 1874. AN ASSOCIATE OF TWENTY-FIVE YEARS STANDING.

SIR,—I am very glad to find that the subject of the above title is being discussed in your columns. I have long been desirous of procuring an expression of opinion on it by the profession; and with that object in view, I put it, three or four years ago, on the agenda paper of the annual meeting of the South-Eastern Branch of the Association, but yielded to the persuasion of an old and highly valued friend and member of the Council to abstain from bringing it forward. I have regretted it ever since, but feel now that probably it is a matter which may be better and more calmly discussed in the JOURNAL, than *vis à voce* at a meeting.

It appears to me that all the letters which have yet appeared on the subject have failed to deal with that which is the very first point to be settled, viz.—What is the title "Dr.," and what is its signification? In my opinion, it is the ordinary colloquial abbreviation of the title "medicinus Doctor" (M.D.), which is a degree granted by an University to its graduates; to whom *only* does it properly belong, and who *alone* have the right to assume it. Undoubtedly, a license to practise medicine (wheresoever obtained) cannot confer the right. Licentiate simply obtain a certificate or testimonial to the effect that they have passed a certain examination, and that they are qualified to do certain things. But they acquire no other right; they have no part or lot in the corporation or college that grants the license; they gain none of its privileges; and, when once in possession of the license, are utterly ignored by it, even when they wilfully and plainly neglect to observe all the conditions on which it was granted.

I have no sympathy with the proposition that, after so many years of practice, every medical man should be entitled to apply to the Universities, and obtain the degree of "M.D." after a sufficient examination. I have been M.R.C.S. Eng. and L.S.A. for very nearly thirty years, and I am quite content to remain as I am so far as titles go. After twenty-five years of practice, a man's opinion will be sought for, if it be worth having, without the accidental aid of any further title; and, if it be not so esteemed, no mere title will give it additional value.

I was much struck by some passages in a letter, which appeared in the *Edinburgh Medical Journal* of last month, from Dr. J. H. Balfour, on quite another subject, which have a marked bearing on this matter, and which, with your permission, I will transcribe. He says, "a degree of M.D. is higher than a diploma, mainly in the fact that the *preliminary and scientific* requirements" (the italics are his) "are, or ought to be, higher. The degree is not a mere qualification to practise, but is an University honour. It is not essential for practice, and no one need take it, unless he choose to assume a higher position than a mere practitioner. We look to our graduates as men who are to advance *science*, and who, in many cases, are to be the leaders of scientific expeditions." In another place, he says, "I desire to stand up for the *honour* of an University degree, and not to put it on the same level as the diploma of a College."

I am rejoiced to think that a large proportion of the licentiates disapprove of the assumption of the "Dr.," and do not use it. And I do not, for one moment say, or suppose, that all those who dub themselves "Dr." (that is, in my mind, a very grave point of the offence—they *dub themselves*—and have not waited for it to be accorded to them by the profession) are wilfully and consciously guilty of a dishonest act; I do not believe that they have ever looked at it in that light. But I cannot do other than believe that they assume that which does not belong to them, but which obviously is the right of quite another class of men. And I think further that, as honourable men, now that the matter has been put plainly before them, and the mind of the profession clearly expressed, they are bound to resign the title at once, one and all. It seems to me the only manly and straightforward course, and I hope that they will forthwith adopt it.

I am, Sir, yours faithfully,

WILLIAM HOAR.

Maidstone, December 17th, 1874.

SIR,—The subject of "Medical Titles" being again to the front, I take the liberty of troubling you with a letter. I was very glad to see the matter treated in a leading article, and hope it may lead to a solution of the enigma.

I think there is a general feeling that London has failed in its duties in not offering to the general practitioner the means of obtaining his degree. The College of Physicians sells a man a diploma which he is told is of no use to him; it was even tried to smite him on the other cheek by denying him the right to the title of the College—to call himself physician.

The proposition I would submit is, that all who have, or shall have, a diploma of a College of Physicians (such diploma entailing a separate and distinct examination from the conjoint Board) shall, on producing it for registration, have the degree of M.D. conferred upon him by the General Medical Council.

Doctor of Medicine of Great Britain is a title that would interfere with no existing privileges. The M.D. of London would be just as much valued by all who have the time, the talent, and the money to try for it. The same may be said of other universities.

The Colleges of Physicians would benefit, their diplomas being more sought after, and the degrading feeling of taking money without giving, or even offering, anything in return, would be spared them; they would be able to regard their licentiates as legitimate, and worthy of being recognised, instead of bar-sinisters in their escutcheons, to be kept out of sight as much as possible.

That the General Medical Council should give the degree, I think would be right. It is supposed to represent the profession throughout the kingdom, and therefore recognises all colleges. The gentleman who registered would feel that he was really receiving something at last for his money, and regard the Council with feelings of respect, which, I fear, few are at present able to do.

I am, Sir, yours faithfully,

D. M'D.

Dorset, December 29th, 1874.

SIR,—I was very pleased to see your leading article in the *JOURNAL* of last week referring to medical titles. I quite agree with you that some British University should make an opening for those senior practitioners who may desire to take the degree of M.D. I am a L.R.C.P. Edin. of ten years' standing, and have taken the title of "Dr." ever since I held the license. I am most willing to submit to a most searching practical examination for the M.D. degree, if I can find an University that will admit me. I am forty-three years of age, and am entitled to be admitted to examination at St. Andrew's, but find that I may be compelled to wait perhaps two or three years before there may be a chance, and then I have fifty guineas to pay for the degree. I trust, Sir, something may be done to enable senior practitioners, who may desire it, to obtain a degree from some British University, and not compel them to go on to the Continent to obtain a degree there. I enclose my card, and am, Sir, your obedient servant,

December 28th, 1874.

L.R.C.P. EDIN.

SIR,—Were it not for your article in last week's issue, I should have written in reply to M.D.'s letter, published December 19th. He seems to have given the matter very little thought. Your powerful advocacy of our cause cannot but be a source of gratification to all who are anxious to obtain the degree of M.D. from a British University; but I would venture to make one or two remarks further upon the matter. It seems to me not quite fair towards the L.R.C.P.s in actual practice, who have not spent four winter sessions at a medical school, to be debarred from taking their degree if they can pass the examination for it. Respecting the examination itself, it appears to me that in some subjects it should be very thorough, as much so as at the London University, but in others less so. I would mention pathology, medicine, midwifery, forensic medicine, therapeutics, etc., among the former; but the same knowledge of anatomy, I think, should not be required of us who have been several years in practice, as from a student fresh from the dissecting-room. It must be presumed that we have sufficient knowledge to be safe practitioners.

Notwithstanding your advancement of our cause, it seems to me that, unless we (*i. e.*, those practitioners who wish for the degree) take some step, in petitioning the University, it will be a long time before we obtain what we desire. I would propose that, as early as possible in the ensuing year, a meeting be held in London—say Willis's Rooms—where the matter may be set fairly on foot, and the necessary petition drawn up. Should this proposition meet with approval, through your *JOURNAL* the most convenient time for the meeting to be held could be easily arranged.—I am, Sir, your obedient servant,

December 28th, 1874.

A COUNTRY PRACTITIONER.

NOTICES of Births, Deaths, Marriages, and Appointments, intended for insertion in the *BRITISH MEDICAL JOURNAL*, should arrive at the Office not later than 10 A.M. on Thursday.

H. D. S.—Perhaps, the roll of the College of Physicians by Dr. Munk may give the desired information. Sir Stephen Fox, father of the first Earl of Ilchester and of the first Baron Holland, married a daughter of Mr. Whittle, one of the King's (Charles II) surgeons.

We are indebted to correspondents for the following periodicals, containing news, reports, and other matters of medical interest:—The Birmingham Daily Gazette; The Western Daily Press; The Manchester Guardian; The Ulster Advertiser; The Sussex Coast Mercury; The Broad Arrow; The Surrey Advertiser; The Bedale and Northallerton Times; The Hackney Express; The Liverpool Porcupine; The Scotsman; The Liverpool Mercury; The Glasgow Herald; The Stroud News and Gloucestershire Advertiser; The Bradford Observer; The Morpeth Herald; The Portsmouth Times; The Western Daily Press; The York Herald; The Sheffield Evening Star; The Brighton Guardian; The Sussex Daily News; The Wrexham Advertiser; The Newton Directory; The Sussex Coast News; The Berkshire Chronicle; The Hull News; The Southern Times; The Worthing Intelligence; The Hampshire Telegraph and Sussex Chronicle; etc.

COMMUNICATIONS, LETTERS, ETC., have been received from:—

Dr. J. Burdon Sanderson, London; Mr. J. R. Lane, London; Dr. G. Johnson, London; Mr. J. N. Cooper, Hyde; Mr. R. Lindsay, Edinburgh; Mr. Walter Ottley, Birmingham; The Secretary of the Odontological Society; Dr. W. C. Maclean, Netley; Dr. Joseph Rogers, London; Mr. H. Burdett, Greenwich; Dr. E. H. Maul, Southampton; Mr. Lloyd Owen, Birmingham; Dr. J. Coats, Glasgow; Dr. Wilson Fox, London; Dr. Brunton, London; Mr. W. R. Smith, Winchester; Dr. Bacon, Fulbourn; Dr. Grabham, Redhill; Surgeon-Major Black, Edinburgh; Dr. Rumsey, Cheltenham; Dr. McKendrick, Edinburgh; Dr. Ferguson, Cheltenham; Dr. Arthur Gamgee, Manchester; Dr. Thomas R. Fraser, Knutsford; Dr. J. B. Lyons, Merthyr Tydvil; Dr. John Goldsmith, Worthing; Messrs. McLure, McDonald, and Co., London; Dr. F. T. Bond, Gloucester; Mr. Kendal, Greenwich; Mr. Cooper, London; Dr. Tilt, London; Mr. Roland Smith, London; Dr. Edis, London; Dr. Blandford, London; Dr. Laidlaw Purves, London; Dr. Jeremiah Dowling, Tipperary; Mr. T. J. E. Brown, Penybont; Mr. L. Thomas, London; Dr. J. C. Weddell, Birmingham; Dr. John Dougall, Glasgow; Dr. T. S. Dowse, London; Mr. Cedric H. Hurford, Dublin; Dr. Tilbury Fox, London; Mr. John Meredith, Wellington; Dr. B. E. Cotting, Roxburgh; Dr. Michael Foster, Cambridge; Mr. Ingpen, London; Mr. Brown, Callington; Mr. Freeman, Clifton; Dr. Saul, Lancaster; Mr. D. K. Jones, Pontllynn; Dr. R. C. Shettle, Reading; Dr. W. M. Kelly, Taunton; Dr. J. Maunsell, Liverpool; Dr. L. P. Madden, Dartmouth; Mr. A. Doig, Aldershot; Mr. R. H. B. Nicholson, Hull; Mr. B. J. Tuck, Seaford; Dr. J. C. Bucknill, Rugby; Mr. H. A. Hallett, Highgate; Dr. MacDowall, Morpeth; Mr. B. J. Vernon, London; Mr. A. H. Balfour, Portobello; Dr. R. Spence, Burntisland; Dr. P. Boulton, London; Mr. J. Hedley, Middlesbrough; Mr. H. W. Benton, Liverpool; Dr. F. H. Haynes, Leamington; Dr. D. Young, Glasgow; Dr. H. Barnes, Carlisle; Mr. W. Eddowes, Shrewsbury; Dr. D. W. Roberts, Ruthin; Dr. Steele, Liverpool; Mr. E. N. Smith, Crowley; Dr. W. W. Williams, Cheltenham; Dr. J. M. McCulloch, Dumfries; Dr. M. Hinchcliffe, Dewsbury; Dr. J. Eaton, Cleator; Dr. W. Millar, Dinapore, E. Indies; Dr. C. Parsons, Dover; Mr. W. Warren, London; Mr. J. Caldwell, Shotts; An Associate; Dr. W. S. Kerr, Dumfries; Mr. Kellett, Newton-le-Willows; Mr. Currie, Lochmaben; Mr. J. Sloan, Bramley; Dr. Crichton, Tavistock; Dr. J. R. Milsome, Adlestree; Mr. W. Ollard, Wisbech; Dr. J. B. Kelly, Aldershot; Mr. Jay, Chippenham; Messrs. Layton, London; Mr. Smith, Halifax; Mr. Garrard, Rotherham; Dr. A. Fraser, Aberdeen; Mr. Walls, Manchester; Mr. Casey, Raheny; Dr. H. C. Wildash, Hythe; Mr. H. Halton, Bolton; Mr. D. Galloway, Wigton; Dr. C. J. Mason, Surbiton; Dr. J. Osborn, Bitterne; Our Paris Correspondent; A. M. B.; Mr. Masser, Foleshill; Mr. F. W. Best, Staningley; Mr. W. E. G. Pearse, London; Mr. W. H. Day, Norwich; Mr. G. Atkinson, Netley; Dr. James Sawyer, Birmingham; Mr. G. F. Naylor, Wakefield; Mr. A. H. Dolman, Derby; Mr. G. S. Symmons, Ledbury; Mr. R. J. Swan, Northleach; Mr. E. S. Jones, Weston-super-Mare; Dr. Sibson, London; Mr. W. Yates, Richmond; Dr. Morrissy, Tipperary; Mr. Ibbetson, London; Dr. Tuckwell, Oxford; Mr. B. Neal, Bodmin; Dr. C. MacDowell, Carlisle; Dr. L. W. Marshall, Nottingham; Mr. G. Mair, Turfiff; Mr. E. C. Board, Clifton; Dr. H. Goode, Derby; Mr. Chapman, Cheltenham; Mr. C. Holmes, Slough; Mr. J. Stephens, Neath; Mr. G. Birch, Lower Clapton; Mr. A. B. Munro, Northampton; Mr. J. Hanks, Snaith; Mr. W. L. Muir, Glasgow; Mr. P. Young, Dundee; Dr. T. A. G. Balfour, Edinburgh; Mr. H. E. Maunsell, Dunmow; Dr. Armitage, London; Dr. Balthazar Foster, Birmingham; Mr. Greenway, Plymouth; Dr. Buchanan, Glasgow; Mr. Annandale, Edinburgh; Dr. Crombie, London; Dr. Diver, Southsea; etc.

## BOOKS, ETC., RECEIVED.

British Wild Flowers. Illustrated by John C. Sowerby. Described by C. Pierpoint Johnson. London: October, November, and December, 1874, and Jan. 1875. John Van Voorst, Paternoster Row.  
The Micrographic Dictionary. By J. W. Griffith, M.D., etc.; and Arthur Henfrey, F.R.S., F.L.S. London: October, November, and December, 1874. John Van Voorst, Paternoster Row.