

THE RAT FLEA AS THE INTERMEDIATE HOST OF A RAT TAPEWORM.

BY

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A LARVAL tapeworm was brought to me by Professor Minchin for identification, and it was suggested that it bore a close resemblance to the scolex of *Hymenolepis diminuta*, one of the commonest tapeworms of the rat. The cysticercoid was found during the dissection of some rat fleas (*Ceratophyllus fasciatus*), and apparently occurred free in the body cavity. Further investigation showed that it was present in about 4 per cent. of the fleas, and usually only a single specimen in each, although three were found on one occasion.

The most characteristic feature of the cysticercoid is its small rostellum, devoid of hooks. This at once suggests *Hymenolepis diminuta*, but that is not the only unarmed tapeworm infecting rats. Several other less common species have been described—for example, *Hymenolepis relicta* (Zschokke), *H. horrida* (v. Linstow), and *Catenotaenia pusilla* (Goetze), along with a number of imperfectly described forms, such as *Taenia ratti* (Rad) and *Taenia umbonata* (Molin).

With the view of determining what tapeworms were present in the stock of rats from which the fleas were obtained an extensive examination of the faeces was made. The ova of *Hymenolepis diminuta* were found in great abundance, and the only other tapeworm eggs which were found were similar to those but considerably smaller. A number of rats were then dissected, and *Hymenolepis diminuta* was found in moderate numbers in several. Another smaller, undetermined, tapeworm was found on one occasion. It was also unarmed, and resembled *Hymenolepis diminuta* to some extent, but its eggs were considerably smaller.

The common occurrence of *Hymenolepis diminuta* amongst the rats rendered the identity of the cysticercoid in the flea almost certain, but in order to establish it a series of feeding experiments were undertaken. Five young rats, newly weaned, were isolated. Their cages were protected, as far as possible, from the entrance of insects, and they were fed on boiled bread and milk. Three of them received nothing else, but the other two were fed daily with 20 fleas. The faeces were examined daily, but no ova were observed until at the end of nineteen days one of the two rats died, and eight specimens of *Hymenolepis diminuta*, in various stages of development, were found in the intestine. On the twentieth day ova of the tapeworm were found in the faeces of the other rat. No other species was present. The faeces of the remaining three rats were examined daily for a fortnight further, but no ova were obtained from them, and at the end of two months the faeces were still free from ova. A similar experiment was conducted later with the same result. There can be, therefore, little doubt that the cysticercoid in *Ceratophyllus fasciatus* is the larva of *Hymenolepis diminuta*. That the rat kills and eats fleas is a matter of common observation.

The cysticercoid (*Cercocystis*) of *Hymenolepis diminuta* was first described by Grassi and Rovelli¹ in 1892 (under the name *Taenia leptoccephala*). The cysticercoid which they describe corresponds precisely with that in the rat flea. It is a small ovoid body measuring, when fully grown, about 0.31×0.25 mm. The unsegmented tail on which the embryonic hooks remain visible is longer and narrower than the body, and may reach a length of 0.8 mm. In the invaginated state the body wall consists of four layers—an outer radially striated cuticular layer, a layer of columnar cells, a layer of connective tissue cells continuous with those in the tail, and a layer of cells forming an internal membrane. Within this is a small lacuna which separates the posterior part of the scolex from the cyst wall. The scolex itself measures about 0.075 mm. in length and 0.09 mm. in breadth. The suckers have a diameter of 0.055 mm. The rostellum is small but distinctly prominent. When the scolex becomes evaginated the wall of the cyst is rapidly replaced by paren-

chymatous cells like those in the tail, and the lacuna, which is at first rendered more obvious by the evagination, is also filled up by cells.

This is the first record of the occurrence of this cysticercoid in the rat flea. Grassi and Rovelli found it in four different insects, but do not appear to have examined the rat flea. They established the identity of the cysticercoid, which they found, by means of feeding experiments not only in rats but also in the case of man. The adult tapeworm is an occasional parasite of man, and has been recorded several times from America, and in a few instances from Denmark, France, and Italy.

Only two instances are yet known of fleas serving as the intermediate hosts of tapeworms. The first of these is the well-known *Dipylidium caninum*, the larval stage of which is passed in the dog flea and the human flea. The other has been described quite recently by Dampf from the flea *Mesopsylla eucta*, which is parasitic on the jerboa (*Alactaga (Dipus) jaculus*). No corresponding tapeworm is known from the jerboa, but the cysticercoid bears a certain resemblance to *Hymenolepis nana*. It is evident that fleas and lice form very convenient intermediate hosts, and it would not be surprising if a much larger number of instances were recorded in future, especially amongst the *Hymenolepididae*. Tapeworms of this family, however, usually pass their larval stage in small crustaceans.

REFERENCE.

¹ Ricerche embriologiche sui cestodi. *Atti Accad. di sci. nat. in Catania*.

Memoranda : MEDICAL, SURGICAL, OBSTETRICAL.

ARE POLIOMYELITIS AND HERPES ZOSTER THE SAME DISEASE?

DURING August and September, 1910, when acute anterior poliomyelitis was epidemic in Maryport, Cumberland, I noted that we were also having an unusual number of cases of herpes zoster. The appearance of these diseases simultaneously in epidemic form struck me at the time as being rather remarkable; I pointed it out to four colleagues here during the first week of September, and argued that there was possibly some etiological connexion between the two diseases on the following grounds:

1. The lesion in poliomyelitis is situated in the anterior cornual cells, and in herpes zoster in the posterior root ganglia—that is, in morphologically equivalent parts of the motor and sensory nerve paths.
2. The nature of the lesion is in both diseases essentially the same—it is variously described by different writers as "inflammation," "haemorrhage," "thrombosis"—it is not yet definitely settled what the exact nature of the pathological process is, but, at any rate, it is in both cases a vascular lesion.
3. The constitutional symptoms are in both diseases the same.
4. Both diseases were distinctly epidemic here at the same time.

The suggestion that there might be some connexion between the two found no favour, and the matter dropped from my mind. But recently, in reading Dr. Henry Head's article on Herpes Zoster in Allbutt and Rolleston's *System of Medicine*, vol. vii, p. 473, I came across the following passage:

A typical attack of herpes zoster arises without any obvious peripheral or central cause, and must be considered as an acute specific disease of the nervous system analogous to acute poliomyelitis. For it starts with a prodromal period of varying length, during which, in the majority of cases, the temperature is raised. During this period the patient feels ill, and has more or less pain, but it is impossible then to make a diagnosis. If a child, he is supposed to be sickening for an acute febrile disease. Suddenly, after a variable period, the rash comes on, and the disease declares itself. Thus in their onset herpes zoster and acute poliomyelitis closely resemble one another. Moreover, the lesion is in the one case an acute inflammation in the region of the motor cells of the anterior horns, followed by more or less secondary degeneration in consequence of the destruction of these cells; in the other an inflammation or haemorrhage into the posterior root ganglia, also followed by secondary degeneration due to the destruction of the ganglion cells of the posterior root. Now the cells of the posterior root ganglia are the morphological equivalents of the large cells of

the anterior horn, and thus the parallel between the two diseases is complete. The reason that zoster is commoner than poliomyelitis is probably that one who has suffered from zoster is not hampered in the struggle for existence, whilst anterior poliomyelitis materially diminishes the likelihood of the patient's survival in the struggle.

Since reading it, I have tried to collect the cases of herpes zoster that appeared during the summer and autumn, and have already been able to trace ten cases occurring during the period of the poliomyelitis epidemic. Infantile paralysis is a rare disease here, and therefore the occurrence of an epidemic was easily recognized. Shingles is, on the other hand, a fairly common disease, and we see, on an average, perhaps one case every other month; but there is no doubt that it was unduly prevalent during the summer months—that it was, in fact, *epidemic*.

The wonderful analogy that exists between these diseases, looked at from every point of view, and the fact that they were simultaneously epidemic here, raises the question, May they not be dependent on the same infective process, attacking the anterior horns of the spinal cord in the one case and the posterior root ganglia in the other? In other words, Are not infantile paralysis and shingles one and the same pathological entity?

Maryport.

R. P. GARROW, M.B., Ch.B. Aberd.

GOAT'S MILK FOR INFANTS.

THE circumstance that a mother is unable to nurse her child satisfactorily is unfortunately one of very common occurrence. In default of the natural supply, the physician has the choice of either a prepared food or of cow's milk modified in a more or less complicated manner. A third alternative, which, although of great antiquity, seems now to be almost entirely neglected, is goat's milk. The circumstances that I have alluded to has recently happened to an infant whom I have had the opportunity of observing, and the addition to the dietary of goat's milk has had such satisfactory results that I thought the information might be of interest to medical men similarly placed. The administration began when the baby was 7 weeks old with one feed of 3 oz. in the day. This amount was gradually increased as the natural supply fell off, and at 3 months the baby was fed entirely on goat's milk, taking six feeds in the day of 4 to 5 oz. each. The milk was given without any preparation, as it came straight from the goat. Digestion was practically perfect. The average gain in weight each week increased from 3 to 4 oz. to from 6 to 8 oz., and the infant retained the fine bloom of health so characteristic of a wholly nursed child.

The convenience of having a first-class food that requires no sterilization or elaborate preparation needs no emphasis.

As a physiologist has no private practice I am unable to give a series of cases from my own experience, but I have come across, in the course of a very brief inquiry, five infants with a similar history. The second of these cases was interesting. She thrived extremely well on the goat's milk. When her sister arrived the goat had left, and the usual modified cow's milk was adopted, with markedly inferior results, giving therefore a rough control experiment.

Goat's milk appears to lie somewhere between human milk and cow's milk as regards its physical and physiological properties. I hope shortly to be in a position to communicate the result of some experiments on this subject.

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CAESAREAN SECTION FOR DYSTOCIA DUE TO VENTRIFIXATION OF THE UTERUS.

THE following case should make a useful addition to those already recently recorded by Drs. Masson Fergusson and Amand Routh:

On January 20th, 1910, Mrs. W., aged 32, 3-para, after being in labour for some hours, sent for Dr. Collington, who, immediately recognizing the condition, sent for me to assist him. The patient, who had now been twenty-four hours in labour, was restless and exhausted. Ventrifixation had been performed eighteen months previously. The uterus was contracting every three or four minutes, and the wall was very thin. The cervix was dragged up quite out of reach. I took the case into hospital and operated at once. The operation lasted about twenty-five minutes. Both tubes were ligatured in two places. The

fundus was firmly adherent to the scar in the anterior abdominal wall. Both mother and child did well, and are to-day in perfect health.

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Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ST. BARTHOLOMEW'S HOSPITAL.

ACUTE TORSION OF THE GREAT OMENTUM.

(Reported by R. M. VICK, M.A., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., House-Surgeon.)

THE patient in the following case, a wood-carver, aged 29, was admitted to hospital on November 9th, 1910, suffering from abdominal pain. He had suffered from pain described by him as "stomach-ache" at intervals for several years. The seat of the pain had usually been the right iliac fossa.

Recent History.

The present attack began with pain in the right iliac fossa on Friday, November 4th. He was ill and stayed at home all day on November 5th. On November 6th the pain became much more severe, and was of a shooting character. He attended at the hospital and was treated with medicine, and advised to take a



Acute torsion of omentum.

- A. Point of ligature. B. Omentum twisted into a stalk.
C. Distal part of omentum matted and gangrenous.

light diet. He vomited on the evening of that day, and again on the 8th. He was admitted to this hospital on the evening of November 9th.

Condition on Admission.

Unhealthy man. Tongue covered with a thick brown fur. Breath very foul. Temperature 100.2°; pulse 96; respirations 24. The abdomen moved well. Some fullness, tenderness, and rigidity of the right iliac fossa. The swelling was very definitely limited, and had a well-marked edge. Its edge extended up wards from the pelvis on the right side about 1 in. from the midline to the level of the umbilicus. It was dull to percussion, and with a definite point of maximum tenderness at McBurney's point. *Per rectum*, nothing abnormal felt.

The case was diagnosed as one of localized appendix abscess, and operated upon on Thursday, November 10th.

Operation.

The abdominal cavity was opened by a longitudinal incision, 4½ in. in length, starting 1 in. below and 1 in. external to the umbilicus. On opening the peritoneal cavity several ounces of sero-sanguineous fluid escaped. The appendix was found to be adherent to the caecum and one light adhesion connected it to the great omentum. It was removed and the stump invaginated into the caecum. The great omentum was then examined, and it was found that all the large veins in it were thrombosed and that the omentum was twisted on itself seven times and resembled a rope. It was covered all over with nodular thickenings; these were examined microscopically later and found to be composed of inflamed fatty tissue with the blood vessels engorged and thrombosed. The whole omentum was then drawn from the wound and found to be twisted right up to its attachment, with all the veins thrombosed. It was ligatured with interlocking sutures at its base and removed. The wound was closed and a collodion dressing applied.

Result.

The patient made a rapid and uneventful recovery and was discharged on December 13th.

Shaftesbury. In the list of some forty-three patrons, vice-presidents, and members of committee are the following names: The Duke and Duchess of Argyll, Archbishop Manning, Baroness de Rothschild, Mrs. Gladstone, Lord Houghton, Professor F. W. Newman, Drs. Aldis, Buchanan, Mackenzie, Hardwicke, Elliott, and others eminent in almost every branch of public life. Its objects were:

"1. To promote the employment of properly educated women in the practice of midwifery and the treatment of the diseases of women and children.

"2. To provide educated women with proper facilities for learning the theory and practice of midwifery and the accessory branches of medical science."

Dr. Edmunds was the honorary secretary, and also one of the lecturers. The other lecturers were E. W. Murphy, A.M., M.D., D. H. Dyte, M.R.C.S., C. H. Drysdale, M.D., M.R.C.S., J. A. R. Newlands, F.R.C.S., John Looking, M.D., and George Ross, M.D. The course on obstetrics alone comprised eighty lectures of one hour each; and each student was required to attend personally twenty-five deliveries under qualified superintendence at a lying-in hospital or maternity charity. Other courses comprised anatomy and physiology, chemistry, materia medica, diseases of women, diseases of infants, and "general medical science." The earlier lectures were given at 4, Fitzroy Square, the later ones at 164, Great Portland Street. One of the later prospectuses states, "This society has carried on for five years the Ladies' Medical College. . . . Eighty-two ladies have already availed themselves of its advantages, and many of these ladies are settled in practice, and succeeding admirably.

Apparently the society came to an end in 1869, partly from want of funds and partly because the ladies themselves, being dissatisfied with its scope, broke off. Some of them (as Miss Thorne states) spent five years unsuccessfully trying other fields, such as Edinburgh, which brings us to 1874 and the foundation *by them* of the present London School of Medicine for Women, giving a full curriculum and opportunity to register.

Now if these statements are true (if untrue they stand to be corrected), I submit that the Female Medical Society is entitled to rank historically as the first organized nucleus and platform of the movement for the medical education of women; that the London School of Medicine for Women is a later and much more perfect development of the same movement, the continuity between the two institutions having been preserved by the lady medicos themselves; and that your statement that "The Female Medical Society only lasted a few years, and was afterwards merged in the London School of Medicine for Women" may be passed as a substantially accurate abbreviation of the facts.—I am, etc.,

London, W., March 13th.

PERCY JAMES EDMUNDS.

Universities and Colleges.

UNIVERSITY OF LONDON.

University College Hospital Medical School.

THE *Calendar* of the school for the session 1910-11 is illustrated by photographs of the hospital and of the medical school building opened in 1907. There is a directory of the former students in the faculty of medicine in University College in two parts, arranged alphabetically and topographically. (London: Langley and Sons, Limited. 1910. Med. 8vo, pp. 177; 2s. 6d., post free 3s.)

THE UNIVERSITY OF LEEDS.

The Medical Terms.

In consequence of the new regulations which are now in operation, the ending of the second term will not be marked by the holding of any degree examinations in the Faculty of Medicine, except in the subjects of preliminary scientific training; the lectures will end on March 22nd. On April 24th the third term of the Faculty of Medicine begins, and will be a short one, for the second and final examinations for the degrees of M.B., Ch.B., begin on June 24th. On this occasion the degrees in all the faculties will be conferred on the same day—namely, July 1st.

Teaching of Mental Diseases.

Some months ago Mr. W. Bevan-Lewis, who for many years has been the medical superintendent of the West Riding Asylum at Wakefield, resigned his position at that institution as he was beginning to feel the necessity of a complete rest. The loss to the West Riding of a man of the calibre of Bevan-Lewis is one which will be felt in many circles, and his place will be hard to fill. Happily Mr. Bevan-Lewis retires in good health, and those who know him best will be assured that his resignation from the trying duties of the supervision of a large asylum will not carry with it a cessation of work, but that his activities will find some outlet in scientific and literary directions. Consequent on his leaving Leeds the Chair of Mental Diseases at the university became vacant, and in the annual

report of the council his services have been duly and suitably referred to in the following terms:

"As the Medical Director of the Wakefield Asylum he worthily sustained the scientific reputation of that institution which it had gained under the notable administration of Sir James Crichton-Browne, and by his untiring labours and remarkable ability he was able to advance in a marked degree the knowledge of his special subject. His connexion with the School of Medicine, which extended over twenty-six years, has added greatly to its reputation, and his relations with his colleagues and students were always of the most pleasant character."

It may be remembered that some two years ago Professor Bevan-Lewis placed his resignation of the professorship in the hands of the council, but that he yielded to their request that he should continue to conduct his clinical teaching at the West Riding Asylum, and in respect of that to retain the title of professor. At the same time Dr. Bedford Pierce, of York, was appointed Lecturer on Mental Diseases. In order that the council of the university might be free to place the teaching of mental diseases both by lectures and by clinical means in the hands of one man, Dr. Bedford Pierce very generously placed his resignation of the lectureship before the council, which they reluctantly accepted with a cordial expression of thanks for his services. The council of the university have been fortunate in finding in the successor of Mr. Bevan-Lewis as Superintendent of the West Riding Asylum one who is fully competent to undertake the work, and at a recent meeting they invited Dr. J. Shaw Bolton to accept the professorship. This invitation has been accepted, and the new superintendent of the asylum will be cordially welcomed by his colleagues in the university, and especially by those of the Faculty of Medicine.

UNIVERSITY OF DURHAM.

ARMSTRONG COLLEGE, NEWCASTLE-ON-TYNE.

THE *Calendar* for 1910-11 (London and Newcastle-on-Tyne: Andrew Reid and Co. Price 1s. 4d., post free) gives a full account of the College, including the scholarships at its disposition and courses required for the various degrees of the University of Durham. Mining and marine engineering, as well as Arts, figure largely in its pages. Since the year 1909 the College has ranked as one of the three constituent units of the University of Durham. At its foundation in 1871 it was intended to be the home of the Faculty of Science of that University. Its name was changed on its enlargement in 1904.

UNIVERSITY OF WALES.

THE *Calendar* of the University of Wales for the Academic Year 1910-11, (Oswestry: Woodall, Minshall, Thomas, and Co.) sets forth the original charter of the university, and the supplemental charter which empowered it to grant degrees in medicine and surgery; also its statutes, which impose on candidates for medical degrees a curriculum longer than that of any other university in Great Britain. The volume includes several appendices detailing the courses of study proposed for initial degrees during the current year, and a list of members of the graduates' guild.

UNIVERSITY OF BOMBAY.

THE *Calendar* for the year 1910-11 is issued in two volumes, and supplies very detailed information regarding the University of Bombay, its constitution and charters, degrees, holders thereof, and the very numerous scholarships and prizes at the disposition of its authorities. The second volume contains all the examination papers set in the various faculties in the year 1909.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

An ordinary Council was held on March 9th, Mr. H. T. Butlin, President, in the chair.

The Examination in Dental Surgery.

The following recommendation from the Board of Examiners in Dental Surgery was adopted:

That the following alteration be made in Clause 2, Section II, of the Regulations for the Licence in Dental Surgery, to enable candidates who have complied with the necessary conditions to present themselves for examination in Mechanical Dentistry and in Dental Metallurgy separately:

Present Clause.

2. The First Professional Examination consists of Mechanical Dentistry and Dental Metallurgy. Candidates who have passed the Preliminary Science Examination may present themselves for the First Professional Examination for the Licence on production of the certificates required under Section I, Clauses 2, 3, and 4.

Proposed Clause.

2. The First Professional Examination consists of: Part I, Mechanical Dentistry, and Part II, Dental Metallurgy. These parts may be taken together or separately. Candidates who have passed the Preliminary Science Examination may present themselves for Part I on production of the certificates required under Section I, Clauses 2, 3, and 4 (c) and (d), and for Part II on production of the certificates required under Section I, Clauses 4 (a) and (b).

The Royal Commission on University Education in London.
It was decided that evidence should be offered on behalf of the College to the above Commission. The names of those already appointed for this purpose are Sir Henry Morris and Sir Alfred Pearce Gould.

The following resolution was passed:

That, as it has been found to be impossible to proceed with the suggestion adopted by this College for combined examinations for medical degrees by the Royal Colleges and the university, the Council do not lay any detailed proposals before the Royal Commission, but instruct their delegates, besides stating their individual views, to point out: (1) The disability under which London medical students are placed owing to the difficulty of obtaining degrees in the Faculty of Medicine of the university, a disability not experienced in other parts of the United Kingdom. (2) The action taken by this College in the past with the object of removing this disability. (3) Its continued willingness to co-operate in any scheme for making the degrees in the Faculty of Medicine more accessible to London medical students.

Central Midwives Board.

The thanks of the Council were voted to Mr. C. H. Golding-Bird for his annual report of the proceedings of the above board. In concluding his report Mr. Golding-Bird expressed the hope that a new Midwives Act might be forthcoming to correct the anomalies and supply the deficiencies of the present one.

Obituary.

ANDREW SMART, M.D., F.R.C.P.E., LL.D. EDIN.,

FORMERLY LECTURER ON CLINICAL MEDICINE, EXTRA-ACADEMICAL SCHOOL, EDINBURGH.

At his son's house, 78, Bertram Road, Hendon, N.W., on Wednesday, March 8th, Dr. Andrew Smart died at the ripe age of 87 years. Half a century ago Dr. Smart graduated in medicine at the University of Edinburgh after a distinguished course. Later he studied at London, Dublin, Berlin, Prague, Vienna, and Paris, a procedure not so common in those days as now. In 1864 he became a Member of the Royal College of Physicians of Edinburgh, and a Fellow in the following year. In this year, at the request of the Lord Provost and magistrates of Edinburgh, he presented his report "On the Pathology, Treatment, and Prevention of Rinderpest," in which he described an infective agent. It is remarkable that a comparatively young practitioner of medicine in the city of Edinburgh would thus seem to have been the first to find a germ in living tissue. In the description of one of the drawings of the blood appearances in rinderpest he delineated the "chains of minute bodies lying between and completely surrounding the blood cells and other histological elements. The structures," he added, "in virtue of their prodigious numerical superiority, occupy the entire microscopical field." The observations published in 1865 attracted much attention, and a report of a committee of pathologists and agriculturalists made to the New York State Agricultural Society in 1867 contains the following passages referring to Dr. Smart's observations: "We have seen that when the virus of rinderpest has been absorbed it permeates, within a few hours, every portion of the blood, rendering each drop a fresh medium for inoculating the healthy animal with the pest. It would almost seem credible that the poison is a vital germ feeding upon the cells and serous portion of the blood, thereby appropriating its vital constituents and propagating its kind until the red corpuscles become amorphous and shrivelled." Thus in his earlier days Dr. Smart was somewhat in advance of his time.

In 1883, he published *Germs, Dust, and Disease; Two Chapters in our Life-History*. He also published papers on the "Treatment of Anaemia and Chlorosis by the Chief Irons Commonly in Use," "Trephining in Basal Haemorrhage," "Undescribed Cardiac Sounds," "Liable to be Mistaken for Murmurs of Valvular Origin," "Alcoholic Paralysis," "Undescribed Respiratory Neuroses," and "Effects of Diet and Drugs on the Elimination of Sugar in Diabetes Mellitus." He was formerly Physician to the Edinburgh Royal Infirmary, and at the time of his death was Consulting Physician to the Institution; he was also an Honorary Physician to the Royal Public Dispensary. He was an Extraordinary Member of the Royal Medical Society, and an Honorary Member of the New York Agricultural Society. At various times he held the appointments of Assistant to the Professor of Practice of Medicine and to the Professors of Clinical Medicine in the University of Edinburgh, Lecturer on Clinical

Medicine in the Extra-Academical School of Edinburgh Examiner in these subjects for the colleges and the university, the first University Lecturer for the Higher Education of Women in the subjects of Physiology, and Institutes of Medicine, and President of the Royal Medical Society.

Dr. Smart, who was a member of the British Medical Association, took an active part in the work of the annual meetings in Edinburgh, being Secretary of the Public Medicine Section in 1875 and Vice-President of the Section of Tropical Diseases in 1898. He is survived by his wife, four sons (one of whom is in the medical profession), and two daughters.

Medico-Legal.

WORKMEN'S COMPENSATION ACT.

Death from Angina Pectoris.

POWELL'S Tillery Steam Coal Company, Limited, v. Hawkins, heard in the Court of Appeal on February 23rd, affords a very interesting corollary to the famous case of *Clover, Clayton, and Co., v. Hughes*, where the House of Lords laid it down that if death is caused by exertion in the course of the employment of a diseased workman, it is death by accident, although the exertion could not have injured a healthy man. In the present case it appeared that the man, on the day of his death, had been engaged to sharpen props, his usual work being to help another man to push trucks. He made no complaint at the time he went to this other work, but after he had been engaged upon it for about ten minutes he had to stop owing to illness. He was taken home, and died the same afternoon from angina pectoris. The medical evidence was to the effect that the deceased's heart was in a bad condition of long standing. Angina pectoris might be brought on by several causes; it might be due to circumstances which could scarcely be called an accident at all. It might be due to very slight exertion, and it did not always follow immediately on exertion, and it could not be foreseen that the exertion would immediately or after a given space of time result in an attack. The county court judge came to the conclusion on the whole of the evidence that the deceased, who was an elderly man, over-exerted himself during the operation of pushing or tumbling a tram, and thereby brought on an attack of heart trouble from which he died, and consequently he made an award in favour of the applicants. On appeal, the Master of the Rolls said that he was unable to arrive at the same conclusion as the learned county court judge. In the House of Lords the Lord Chancellor said, in the case of *Barnabas v. Bersham Colliery*: "In cases under this Act, in the same way as in cases under any other Act or at common law, the plaintiff must prove his case; and although he may establish a state of facts which leads one to think that his version is quite a possible version of what took place, he must do something more than show a state of facts which is consistent with either one or with another view." And Lord Halsbury said: "Propositions must be proved in a court of law by proof of evidence and that is not satisfied by surmise, conjecture or guess." The appeal must be allowed, because there was no evidence that the accident arose out of the employment.

Alleged Injury from Vitriol.

In *Farley v. Kynochs, Limited* (*Birmingham Daily Post*, February 24th) it appeared that Farley had worked for the respondents for about twenty-five years, and for eighteen years had been engaged in cleaning empty cartridges. On November 16th he was so engaged when some solution of vitriol and water which was used for the purpose of treating the cartridges, and which was in a boiling state, splashed into his eye. Suffering some pain, the applicant consulted a doctor, and on November 30th he went to see the foreman, and applied for a ticket for admission to the hospital. On the advice of a surgeon he became an in-patient, and remained there from December 3rd to 10th. He was still an out-patient of the hospital, and owing to the condition of his eye had been unable to follow his employment.

The applicant said that about twenty-two years ago he met with a mishap to his right eye, the result being that it had to be taken out. This accident occurred while he was employed at Kynochs. He admitted the compound was very weak, containing about 1 per cent. of vitriol.

Dr. Martin Young said that the state of the man's eye was consistent with the condition he should expect to find had a splash of boiling vitriol solution gone into it.

Dr. Jameson Evans, on behalf of the respondents, said when he first saw the applicant at the hospital, he had superficial and deep inflammation of the left eye. Four days later the sight was becoming hazy. This haziness increased, and on December 29th a fresh spot appeared. The inflammation had subsided, but the spots had not cleared off. Witness stated that he could not attribute the condition of the applicant's eye to a burn by sulphuric acid or hot water. It might have been caused by other things; there was no burn on the eye.

Dr. Clarkson, who was consulted by the applicant on November 17th, said he found no trace of a burn then.

His Honour held there had been an accident, and allowed compensation at the rate of 18s. 10d. a week from December 3rd, the date on which the man left work.

County Boroughs in which the Notification of Births Act is not in Force, with the Infant Mortality Rates in 1905 and 1909.

Name of County Borough.	Infant Mortality.		Name of County Borough.	Infant Mortality.	
	1905.	1909.		1905.	1909.
Barrow-in-Furness ...	135	81	Leeds ...	151	122
Birkenhead ...	127	123	Leicester ...	148	127
Bournemouth ...	83	100	Manchester ...	157	134
Bristol ...	122	100	Oxford ...	116	75
Canterbury ...	119	73	Plymouth ...	135	131
Coventry ...	108	97	Salford ...	148	141
Devonport ...	113	96	South Shields ...	146	137
Gateshead ...	138	112	*Sunderland ...	142	135
Gloucester ...	118	95	Tynemouth ...	153	129
Hastings ...	113	79	West Hartlepool ...	146	113
*Huddersfield ...	119	95			

* Compulsory notification of births has been in force under the provisions of local Acts in Huddersfield since 1906, and in Sunderland since 1907.

DUTIES OF MEDICAL OFFICERS OF HEALTH.

At a meeting of medical officers of health, representing thirty sanitary districts in the Administrative County of Devon, held at Exeter recently under the chairmanship of Dr. S. Noy Scott, President of the South-Western Branch of the British Medical Association, to discuss, with the county medical officer, the extra duties imposed by recent legislation in public health matters, it was resolved to inform the sanitary authorities that the meeting was in favour of antitoxin being used as a prophylactic, as well as a curative agent, for poorer people and poor law cases, as defined in the letter of the Local Government Board, dated August 15th, 1910. It was also resolved to request the various authorities to grant an increase of salary, as suggested by the Local Government Board, on account of the many extra duties thrown on medical officers of health by recent medical discoveries, Acts of Parliament, Orders and Regulations of the Local Government Board, and the Memorandum of the Board of Education and Local Government Board, 1910, in relation to infectious diseases among school children, and contacts and school closure.

DUTIES AND REMUNERATION OF DISTRICT MEDICAL OFFICERS.

E. C. C. writes: I. Would the L.G.B. sanction extra payment for using diphtheria antitoxin and attending in: (a) Parish patients; (b) patients unable to pay for antitoxin in one's opinion, and on whom the antitoxin may be used previous to consulting guardians?

II. My guardians have saddled me with thirty old age pensioners. They tell me probably I will have to attend another 200, with no addition to present remuneration. Is that what the law allows?

III. Can the guardians' clerk deduct pension money from an extra pay for a fracture?

IV. I charged £2 for a fracture of left humerus and dislocation of left ulna and radius. I was granted £1. Is that correct?

V. Can you recommend any up-to-date book on the duties of a district medical officer?

* I. We are not aware of any regulation which enables district medical officers to make a special charge for using antitoxin either for pauper or other patients. It is for the sanitary authority of the district to decide in what circumstances antitoxin may be supplied gratuitously.

II. It is the duty of all district medical officers to attend all old age pensioners who may be granted medical orders by authorized officials.

III. Fees paid as extras are properly taxed towards pensions in the same way as fixed salaries.

IV. The authorized fee for the case in question is £1.

V. We are not aware of any monograph of recent date on the duties of district medical officers, but we are told that it is not unlikely that one will shortly be published.

It has already been announced in the JOURNAL that the first meeting of the International Permanent Committee of the seventeenth International Congress of Medicine will be held in London on April 21st and 22nd, 1913, under the presidency of Dr. F. W. Pavy. Any suggestion as to the arrangement of the list of sections should be sent on or before April 1st, 1913, to the honorary general secretary of the Permanent Committee, Professor H. Burger, Vondelstraat 1, Amsterdam, or to the bureau of the committee, Hugo de Grootstraat 10, The Hague. The committee will be glad to receive, before the same date and at the same addresses, any other communications concerning the organization of the congress.

Medical News.

At the meeting of the Royal Society on Thursday afternoon next Mr. C. G. Douglas and Dr. J. S. Haldane, F.R.S., will read a paper on the causes of absorption of oxygen by the lungs in man.

At the time of the Exhibition of Hygiene which is to be held at Tunis in April (18th to 28th) under the presidency of Dr. Conseil, Director of the Tunis Bureau of Hygiene, there will be a Congress of Colonial Hygiene.

At the annual meeting of the Liverpool Medical Institution it was resolved to change the name to "The Liverpool Medical Society." The proposed change excited a good deal of opposition, and on March 6th the decision was reversed.

The *London Gazette* of March 7th announces that the King has been pleased to approve the appointment of John Pringle, C.M.G., M.B., and John F. Ker, Superintending Medical Officer, to be nominated members of the Legislative Council of the Island of Jamaica.

At the meeting of the Medico-Legal Society, at 11, Chandos Street, London, W., at 8.30 p.m., on Tuesday next, two papers will be read, one on how far the abuse of drugs can be prevented by law, by Mr. H. W. Gadd, and the other on "patent medicines," by Dr. Tunnicliffe.

The Mayor of St. Marylebone will preside at the fifth annual meeting of the St. Marylebone Health Society at the Town Hall, Marylebone Lane, W., at 5 p.m., on Monday next. The meeting will be addressed by Miss Broadbent, Dr. Eric Pritchard, and Dr. Charles Porter, M.O.H.

The next course of instruction in the diagnosis and treatment of fevers in the hospitals of the Metropolitan Asylums Board will begin on May 1st. The fee is three guineas for two months' or four guineas for three months' course. Full particulars can be obtained from the clerk of the Metropolitan Asylums Board, Embankment, E.C.

The annual general meeting of the Association of Medical Officers of Health will be held at the Holborn Restaurant on March 23rd, at 3.15 p.m. The annual report states that the number of members is 258, and that the financial state is satisfactory. The council will recommend the election of Dr. Davison as chairman, and the re-election of Dr. Bellios and Dr. Gibbes-Smith as honorary secretary and treasurer respectively.

DR. PHILIP FRANK, Major F. A. Brooks, M.D., and Lieutenant-Colonel Edwin Lee, M.R.C.S. (from Honorary Associates) are appointed Knights of Grace of the Order of St. John of Jerusalem in England. Major Brooks is of the First East Anglian Field Ambulance, Territorial Force; Lieutenant-Colonel Lee is medical officer, 4th Battalion the King's Own Yorkshire Light Infantry.

At Bury, Lancashire, there are seven cases of small-pox in the hospital; two cases, notified on March 14th, were women who worked in the same cotton mills as the first person affected; a man suspected to be suffering from the disease also worked at the same mill. In London the number of cases under treatment at the Metropolitan Asylums Board's hospitals is 48, and a case has occurred at Hampton in a young man engaged in London every day.

In its report of a bazaar held in aid of the Tuberculin Dispensary established by Dr. Hilda Clark at Street, the *Central Somerset Gazette* states that in addition to the tuberculin injections the patients follow the open-air treatment, with due regard also to diet, etc. It is understood that, so far, Mr. W. S. Clark has been largely responsible for providing the working funds, but for continued work it is necessary that a proper fund should be established and also money be obtained for the purchase of shelters for the following of the open-air treatment. In these shelters, either hired, lent to the patients, or purchased by them, the patient can rest in bed or on a couch in the open air, yet sheltered from the rain or sun, as the sides are made to open or close.

SINCE the date of the visit to Bath paid after the Annual Meeting of the British Medical Association last year, an important addition has been made to the equipment of this natural mineral water health resort. This is a department provided with all forms of the apparatus originally devised and advocated by Zander of Stockholm for securing the rhythmical use of different groups of muscles, and the movement, either active or passive, of the joints which such muscles normally control. As the work done with the assistance of these machines can be very precisely graduated and calculated, their utility in dealing with patients either indisposed to exercise or partly incapacitated therefrom by contracted joints is indubitable.

THE fifteenth annual report of the Yarrow Home for Convalescent Children of the Better Class shows that during last year 900 children were admitted, 462 being boys and the rest girls. The average stay of each child was 37.5 days, and the weekly expenditure on each child £1 1s. 7d. Of 864 children who left the home during the year 808 showed an increase in weight, averaging a little over 3.5 lb.; 30 had decreased in weight, and 26 showed no change. This home, situated at Broadstairs, is privately endowed and is specially intended for children whose parents are of the professional and educated middle classes but whose means are somewhat limited. The weekly charge is 5s. Further information can be obtained from the secretary, Mr. W. F. Sheldrick, 6, Holborn Viaduct, London.

AMONG the fixtures for July is the First Universal Races Congress, which is to be held at London University from July 26th to July 29th, and has the support of eminent persons in as many as fifty countries. Its object is the discussion "in the light of modern knowledge and modern conscience of the general relations subsisting between the peoples of the West and those of the East, between so-called white and so-called coloured peoples, with a view to encouraging between them a fuller understanding, the most friendly feelings, and a heartier co-operation." The list of readers of papers includes many well-known English names. In connexion with it there will be an exhibition of books, documents, photographs of the highest human types, skulls, charts, etc., under the direction of Professor Alfred C. Haddon, D.Sc., F.R.S. Further information can be obtained from the Honorary Secretary, Mr. George Spiller, 63, South Hill Park, Hampstead.

THE fifth annual meeting of the Association of Certificated Dispensers was held in the Court Room of the Apothecaries' Hall, Blackfriars, E.C., on March 9th, Mr. Montagu Smith, Lewisham Infirmary, presiding. There was a large attendance, the majority of those present being engaged in one or other of the public services. After confirmation of the minutes of the previous annual meeting, the financial statement showing a balance of £69 7s. 7d. to the credit of the association was submitted. Mr. A. Howell, hon. secretary (Dalston Dispensary), in his annual report stated that the number of members was about 450. The extension of the Local Government Board's orders to the Metropolitan Asylums Board service was instanced as a result of the association's activity. Several matters of interest and importance to the members had received careful consideration in the proper quarters, and important developments might be expected in the near future. The register kept by the honorary secretary had been successful in assisting members to fill vacancies. The committee for the ensuing year was elected; the three principal officers being re-elected. Votes of thanks were passed to the master and wardens for the use of the court room, and to the chairman, treasurer, secretary, local secretaries, and committee.

THE greater part of the milk consumed in London, as in other large towns, is brought by trains from country farms. The fact that it comes from the country used to be a consolation to householders and anxious parents, but many investigations both in London and elsewhere show that the advantage is illusory, and that the milk brought into large towns is very frequently grossly contaminated with dirt of various sorts. There is no doubt that cows can be kept in a city in good health and good yielding if they are properly looked after, and if the dairyman understands his business and handles his milk carefully it will be a cleaner and wholesomer fluid than most of the fluid introduced from the country. We have recently inspected the cowsheds of Mr. E. J. Walker, 48, Sloane Street, S.W., and we were able to satisfy ourselves that the dozen cows in Church Street, S.W., were free from tuberculosis, not only on the evidence of the tuberculin tests, but also on the evidence of the examinations made at the Lister Institute, which showed that no guinea-pig developed tuberculosis when injected with the samples sent at short intervals. The sanitary condition of the sheds is excellent, the udders of cows are kept in good order, and every reasonable precaution is taken to render the milk clean and pure. The filters remain almost free from deposit after the nursery milk has been passed through. Milch cows, as has been said, respond well to artificial diet, if this be properly chosen, and the result as far as quality of milk is concerned is highly satisfactory. We should therefore recommend medical practitioners who find a reliable source of nursery milk of value in their practice to pay a chance visit to the dairy and cowsheds of this firm, and ascertain for themselves what is being done in a crowded part of London to improve the milk supply for infants and invalids.

Letters, Notes, and Answers.

Queries, answers, and communications relating to subjects to which special departments of the BRITISH MEDICAL JOURNAL are devoted will be found under their respective headings.

QUERIES.

A. B. C. asks, as to the use of fibrolysin injections in uterine fibroids, for information as to the method, dose, and results.

J. A. asks: Should a woman, 30 years of age, marry, whose brother had an attack of acute mania after an attack of appendicitis? Two cousins on the maternal side have suffered from depression entailing ceasing work for three months in one case and one year in the other.

PERPLEXED would be glad of advice respecting a girl, aged 16, who is 4 ft. 11 in. in height, and has grown only 1 in. since she began to menstruate at the end of her thirteenth year. She is healthy and strong; is of studious habits, passing the Senior Oxford Local Examination with honours and distinction when 15 years and 4 months old. Any practical suggestion to increase her stature would be gratefully received.

SOFTENING WATER BY LIME.

A. W. writes: Our local water supply has 10 degrees of hardness (Clarke's scale), which has been reduced by a softening process to 10 grains per gallon; but this is still too much for my rheumatism. What weight or quantity of quicklime would precipitate the utmost amount of the lime still remaining—that is, 10 degrees (Clarke's scale)? I note your pregnant caution as to not adding too much.

ANSWERS.

H. C. D.—No notice can be taken of anonymous communications.

DR. S. C. REID (Blackburn) writes to recommend "W. J. L." to try chloretone in small doses. [In Martindale and Westcott's *Extra Pharmacopoeia* the dose of chloretone, trichlor-tertiary-butyl-alcohol, is given as 5 to 24 grains in cachet, capsule, or tablet, followed by a draught of water or milk, or suspended in a mixture.]

J. E.—We presume that our correspondent's inquiry has reference to a chief medical officer resident in London who would act as adviser and consultant of a friendly society. So far as we know, a fixed salary is offered, and its amount, no doubt, would be dependent on the amount of work required from the officer.

DR. H. J. THORP (Ipswich) writes, in reply to "North," that the burning pains in the legs and feet at night are probably gouty manifestations, and should be treated accordingly, both medicinally and dietetically.

TREATMENT OF AMENORRHOEA.

DR. JOS. S. BOLTON (Nottingham) writes: In reply to "X. Y. Z." (February 18th, p. 415), sparks to the spine from a static machine or high-frequency apparatus are very successful.

WOMEN AND HOSPITAL COMMITTEES.

MR. CONRAD W. THIES, Secretary of the Royal Free Hospital, London, writes, in reply to "Devonian," that women have been members of the Committee of Management of that hospital since 1896. At the present time, out of a total of thirty members of the Committee of Management, there are four ladies, of whom two are members of the weekly board. Mr. Thies adds that the advice and views of women on many questions of hospital administration, especially in regard to the nursing and domestic departments, have proved of great value to the committee.

LETTERS, NOTES, ETC.

TUBERCULOSIS OF JOINTS.

DR. J. REID (London) writes: The treatment recommended by Mr. Lane (BRITISH MEDICAL JOURNAL, March 11th, 1911, p. 538) will recall the good effects of a rhubarb mixture thirty years ago, in tubercle cases, by old practitioners, when the fashion was to order antiseptic inhalations, etc. Just think of the satire of Molière on M. Purgon.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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Eight lines and under	...	0	4	0
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