

After the second week the degree of sepsis and the amount of retained pus became progressively greater. The table indicates that her insulin requirements rose from 140 to 200 units at the onset of the infection, and fell progressively to 80 to 90 units as her resistance failed, in spite of an increase of the severity of the sepsis.

	Insulin Units	Temperature	White Blood Count
Before infection...	140	98.6°	
1st week	200	102.0°	
2nd week	200	103.0°	
3rd week	200	103.0°	29,000 per c.mm. Polymorphs 95 %
4th week	170	102.0°	31,000 per c.mm. Polymorphs 96 %
5th week	140	101.0°	13,003 per c.mm. Polymorphs 89 %
6th week	100	100.5°	11,000 per c.mm. Polymorphs 90 %
At 6½ weeks	90-80	99.0°	

DISCUSSION

As it is possible to exclude all the other factors which might have reduced her insulin requirements, we are forced to conclude that they depended on her progressive failure to react to her infection. Thus, while it is known that progressive emaciation may improve the diabetic condition, this was absent in her case. It was impossible to weigh her, but there was no visible reduction in her slight obesity, nor was there any failure to eat and absorb the usual total amount of food. Variations in her endogenous insulin production were very improbable, as she had been a very advanced diabetic showing no variation in her insulin requirements for the eight months during which she was under our observation. On the other hand, there was no change in the type of infection and no abatement of its severity as the insulin requirements grew less. The same bacteria, and presumably the same toxins and type of pus, were present in increasing quantities, and she should, if the theory of chemical inactivation be true, have required more insulin in the later weeks.

It seems fair to conclude, therefore, that it was not the sepsis or toxins *per se* which inhibited insulin action in the early stages of this case, but the reaction to them as manifested by a rise of temperature. When the latter failed, the insulin acted better. The febrile reaction seemed the determining factor, and it will be noted that the insulin diminished as soon as the average temperature began to fall, and before any change was seen in the blood count. Further evidence of the importance of a febrile reaction (as distinguished from a non-febrile infection) must have been noticed by insulin workers in comparing the effect of common colds in adults and in young children. The same degree of coryza (as far as we can judge) will cause pyrexia in a child, but not in an adult. The child requires more insulin; the adult does not, as a rule, unless he has a "feverish cold."

The above evidence associates the inhibition of insulin action directly with a febrile reaction, and only indirectly with the sepsis or infection producing the fever. Perhaps the explanation can be carried further, but not with any certainty, as too little is known of the mechanism producing fever. One hypothesis, however, explains the facts we have observed. Cramer⁵ advocates the view that a febrile reaction is produced by the stimulation of the adrenals and thyroid by infective agents, and has developed his arguments in a recent book, to which readers are referred. This would afford an adequate explanation of the inhibition of insulin, as it has been proved experimentally that the hormones of these glands, adrenaline and thyroxine, are direct antagonists to insulin.

Clinical evidence is also clear on the harmful effect of hyperthyroidism on diabetes, and also of conditions of nervous strain and excitement in which the suprarenal is stated, and may reasonably be presumed, to be over-active. If we grant in this case that the failing febrile reaction was due to an exhaustion of the adrenal-thyroid apparatus, it is easy to understand why the insulin requirements grew less in spite of increasing sepsis.

Unfortunately, even if the above hypothesis be true, it does not suggest any therapeutic measure in infections other than an increase of insulin. We have tried ergotamine,⁶ a sympathetic depressant, which in theory should be ideal, and, indeed, in practice augments insulin action, but its toxic properties have shown it to be undesirable.

SUMMARY

An unusual case of septicaemia in a diabetic is reported in which the insulin requirements, after an initial increase, became progressively less as the sepsis grew worse. This reduction coincided with a falling temperature and failure of reactive powers. It is suggested that the inhibition of insulin action by sepsis is not directly due to the sepsis or toxins, but to the accompanying febrile reaction. It is further suggested that this reaction may be due to the increased activity of the adrenal and thyroid glands, recognized antagonists to insulin. If their reaction fails or diminishes, as in this case, then the antagonism to insulin is removed, and the dose required becomes less, in spite of increasing sepsis.

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- ⁴ Lawrence and Buckley: *Brit. Journ. Exper. Path.*, 1927, viii, 58.
- ⁵ Cramer, W.: *Fever, Heat Regulation, Climate, and the Thyroid-Adrenal Apparatus*, Longmans, 1928.
- ⁶ Lawrence, R. D.: *Brit. Journ. Exper. Path.*, 1930, xi, 145.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

KERATITIS PUNCTATA SUPERFICIALIS

From the number of cases of keratitis punctata superficialis that one formerly came across it could not, I think, have been termed a common ocular affection, yet the number of cases I saw during the past winter leads me to believe that it is now of much commoner occurrence than might be expected. It is a condition very easily missed, and one not likely to be found unless carefully looked for. Practically all the recent cases have been mistaken for, and treated as, a conjunctivitis. This is owing to the fact that the conjunctiva shows a mild hyperaemia of both its palpebral and conjunctival portions; there is no true discharge, as is present in conjunctivitis, but an excess of tears. The pain is of a gritty, burning nature, and more severe than would be encountered in a conjunctivitis of so mild a degree. There is also considerable photophobia, which is far more pronounced and distressing than in a case of conjunctivitis.

If the cornea is examined with an ordinary light nothing abnormal is seen, but with focal illumination and a magnifying glass, particularly if the pupil is dilated, the surface of the cornea will be seen to be cloudy and scattered over with several minute grey dots, the numbers of which vary considerably. They may be arranged in groups or rows, and are very much more abundant in the centre, the periphery of the cornea being often quite clear. If fluorescein is instilled into the conjunctival sac some of the spots are stained green, but others remain unaffected. An examination with the corneal microscope shows the spots to be of a superficial nature, involving

only the corneal epithelium; they vary in colour from a brilliant white to a dull grey, some being round, others stellate in shape. The remaining corneal epithelium is oedematous. The deeper structures of the eyes are not involved.

If correctly treated, the condition appears to take one of two courses. The ocular irritation and the corneal spots may disappear in a few days, or the irritative symptoms may rapidly pass off, but the corneal spots remain, gradually clearing up over a period of some weeks. In none of the cases that I have seen has there been any permanent impairment of vision.

The condition may attack one or both eyes, and, although it is said to occur most frequently in young people, recent cases would show that its occurrence in middle age is as frequent as at any other time. There is no doubt, I think, that catarrh of the air passages, and particularly the influenzal cold, has a definite bearing on the ocular condition, many patients complaining that they had had a succession of colds, and that during one of these the eyes had become red and irritable. The condition occurs more frequently in women than in men.

As regards treatment, the only real essential is not to employ any irritating drug—such as mercury or zinc—which will probably have been used if the case has been mistaken for conjunctivitis. I have obtained the quickest results with a lotion of normal salt solution, used warm three or four times a day, and in a mild case no other treatment is necessary. Protosil ointment of 5 per cent. strength may be put into the conjunctival sac just before bedtime every night. Heat is beneficial, the best method being to immerse in a bowl of hot water a piece of lint or flannel, wring it out, and apply it to the closed lids, continuing this for ten minutes every three hours. In the more severe cases coloured glasses are both restful and protective. Whether catarrh of the nasal passages is present or not, it is probably beneficial to give some nasal antiseptic. I have employed chloretone inhalant (P. D. and Co.), used with an atomizer.

In conclusion, therefore, in what looks like a case of mild conjunctivitis with marked irritative symptoms, a careful examination of the cornea should be made, and even if, without special instruments available, this appears normal, all irritative treatment should be stopped and a saline lotion substituted, and the progress of the case watched for a week or ten days.

E. R. CHAMBERS, F.R.C.S.ED., D.O.M.S.
Ophthalmic Surgeon, Bristol Royal Infirmary.

ACUTE URETHRITIS IN MUMPS

The following case has several unusual features:

The patient, a middle-aged man, had one son, aged 11, at home from school suffering from a mild attack of mumps. The boy had developed definite parotitis (but no testicular involvement) on March 9th. His case ran a normal mild course.

The family live in comfortable circumstances in the country; the father comes to town daily. He called to see me in London on March 26th, complaining that for a week he had had urethral irritation, some pain, and a free discharge of pus. The patient's circumstances were against a gonococcal infection, and the laboratory report confirmed my own findings; there was a muco-purulent discharge, but no gonococci. Next day I received a telephone message that my patient was feverish and in bed. On examination I found his temperature was 100.8°; slight pain in left parotid. Twenty-four hours later the parotid was swollen to an enormous size, and the urethral discharge still continued, but it appeared to be lessening and the inflammation and redness at the mouth of the urethra was not so marked. On April 1st the left testicle rapidly swelled, the patient's morning temperature being 103°, and at 11 p.m. 104.8°; there was slight delirium.

Progress Notes

April 2nd. Temperature, morning 103°, evening 103.2°; slightly easier, but vomited twice; some epigastric pain and distension (? acute pancreatitis).

April 3rd. Temperature, morning 101.4°; general condition much better, but testicle very large and tender.

April 4th. Temperature 98.6°; very much easier.

April 8th. Temperature normal; testicle down to half; no urethral discharge.

April 12th. Testicle very nearly normal; patient getting downstairs to-day.

All through the illness there was evidence of a very severe infection, with delirium and some collapse on the fifth and sixth days of the fever. The pancreas may have been involved.

It is of some interest that a lady friend, aged 25, who was living in the house, developed mumps on March 30th—a mild case, but with considerable pelvic pain.

London, E.C.1.

ARTHUR SPENCE, M.B., Ch.B.

Reports of Societies

EPIDEMIOLOGY OF VENEREAL DISEASES

At the meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine on April 24th, with Professor MAJOR GREENWOOD in the chair, Colonel L. W. HARRISON read a paper on the epidemiology of venereal diseases.

Colonel Harrison, after remarking on the notorious fallacy concerning the statistics of venereal diseases, explained that he had constructed various tables and graphs mainly from a census carried out in Switzerland in 1920-21, in which an effort was made to obtain particulars from practitioners and institutions, from a German census in 1927, from a number of official Scandinavian figures, from various one-day censuses in the United States, and from such British figures emanating from the treatment centres as were available. He compared the incidence of venereal diseases in large towns and cities with their incidence in smaller places, and showed how great were the differences in this respect. In Norway, in 1924, for example, the rate per 10,000 was 30.7, but in Oslo it was 134; in Sweden, for the whole country, it was 18.7, but for Stockholm 99.2; in Germany, in 1927, the rate was 58, but in Berlin it was 136, and in Kiel 164. In the Swiss census the towns of more than 50,000 inhabitants showed three times the average for the whole country, and the villages only one-fourth of the average. Turning to age and sex incidence, Colonel Harrison said that it appeared from the various figures that the age of greatest incidence was 20 to 24, with the peak occurring earlier in females than in males. Recently, in connexion with a League of Nations inquiry, he had sent to Geneva approximately 3,000 records of early cases of syphilis, giving the date of infection, and analysis of these figures showed that on an average the males in this country acquired syphilis at a later age than in Germany or France. The rates for the men in the Services (except for gonorrhoea in the Navy) compared favourably with those for civilians of the same age group in Germany. Higher rates of syphilis in female children up to 10 years suggested that congenital syphilis was commoner in females than in males; which, if true, was a curious fact, seeing that in the periods of sexual activity females tended to react less to the virus than did males. An alternative possibility was that more female syphilitics survived after birth. Another fact to be noted was that there was a much lower ratio of females to males in respect of gonorrhoea than in respect of syphilis, suggesting that

he swayed the affairs of the medical school at every crisis. Presently the influence of Dean's personality—one of exceptional power—became felt. He quickly and quietly began to take the place which Sir Frederick Treves had occupied in hospital and in school. It was then, too, that Lord Knutsford came to the rescue of the London Hospital; his quick eye soon recognized the altogether exceptional abilities of Percy Dean, both as surgeon and as master of men. Dean at once set about reorganization of the medical school. It was he mainly that brought into the school Sir Leonard Hill, Sir Peter Chalmers Mitchell, Sir Henry Head, Dr. Robert Hutchison, Professor William Bulloch, and several others beside myself. He became the dominant spirit of the school for an altogether too brief period. He could organize; he not only gave everyone the impression he had great gifts—he possessed them. He had a most efficiently arranged mind; he reached his conclusions after due and deliberate consideration; having formed his judgements, he at once proceeded to impose them on public policy, pursuing the objectives he had in view without fear or favour. He was a born teacher; his thoughts were clearly cut; he laid them before his students with a conviction which can be born only of personal experience. In these early days he had established himself as an authority on the surgical treatment of sequelae which result from middle-ear disease. His contributions to surgery attracted the attention and won the approbation of the medical world. He could operate, and he was a clinician. Students sought his help in their troubles, and practitioners his advice and skill with their patients. He seemed destined to reap the highest rewards his profession could confer on its most distinguished votaries. What happened? I cannot tell. All I know is that some tragedy in his life robbed modern surgery of a man who, if things had been otherwise, would have left on its progress an enduring memorial.

Dr. THOMAS REDMAYNE, who died on April 1st at St. Leonards-on-Sea, was the younger son of Robert Robey Redmayne; he was born on June 20th, 1863, and from Repton went to Trinity College, Cambridge, completing his medical education at the London Hospital. He obtained the diploma of M.R.C.S. in 1886, the M.B. degree in 1888, and the Fellowship of the Royal College of Surgeons in 1889. After acting as receiving officer, house-physician, and house-surgeon at the London Hospital, Dr. Redmayne began practice at St. Leonards in 1890, going into partnership with Mr. Claude Baker Gabb. In 1896 he was appointed junior surgeon to the Royal East Sussex Hospital, and after a time became ear, nose, and throat specialist. On the administrative side of the hospital he served as a member of the house committee and as chairman of the medical committee. He was ultimately senior surgeon, retiring at the end of 1930, after thirty-four years' unbroken service. Dr. Redmayne had been a member of the British Medical Association since 1893. During the war he served for a year at the Netley Military Hospital. He had an important practice, to which he devoted most of his time; his advice was always valuable, and his opinions carefully expressed. A somewhat gruff exterior covered a kindly personality, and he was loved by his patients. For several years Dr. Redmayne was consulting surgeon to the Catherine House Home for Invalid Ladies, St. Leonards, and chairman of the Hastings Medico-Chirurgical Committee. He is survived by a widow and two daughters.

Dr. JAMES CAMPBELL HALL, who died on April 8th at his residence, Rowantree House, Monaghan, was for many years an outstanding member of the profession in Ulster. He was born at Killeel, County Down, in 1851, being the eldest son of the Rev. Richard A. Hall. After graduating M.B., B.Ch. at Trinity College, Dublin, in

1878, he became physician to County Monaghan Fever Hospital in the following year, and in 1890 he was appointed surgeon to the Monaghan County Infirmary, a post from which he recently resigned. Dr. Hall's life-work was the development of the county hospital, which was opened in 1896 largely through his perseverance. His devotion and generosity to this institution, with which he was associated for forty years, were commemorated in 1929, when a mural tablet, recording his services, was unveiled at the hospital. From the inhabitants of the county, by whom he was much beloved, he received an address and a presentation. In addition to his hospital work, Dr. Hall had an extensive private practice, and took a great interest in public affairs. In 1886 he contested unsuccessfully the constituency of North Monaghan as a Conservative candidate. He was a past-president of the Ulster Medical Society and of the County Monaghan Medical Association.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

In congregation on April 24th, Sir Humphry Rolleston, Bt., Regius Professor of Physic, was appointed the delegate from the University to the centenary of the School of Medicine of the University of Leeds on June 30th and July 1st.

At a congregation held on April 24th the following medical degrees were conferred:

M.D.—*H. V. Coverdale, G. K. Kirwan-Taylor.
M.B., B.CHIR.—M. A. Robertson, W. V. Howells, J. J. Keevil,
I. B. Morris, J. A. Pocock.
M.B.—G. Rocyn-Jones.
B.CHIR.—G. K. Kirwan-Taylor

* By proxy.

UNIVERSITY OF LONDON

UNIVERSITY COLLEGE

The Bayliss-Stirling memorial scholarship, of the annual value of about £120 (with exemption from tuition fees), is open for award by the University College Committee. The scholar will be required to follow a course of study approved by the Jodrell professor of physiology, involving a training in the principles of, and methods of research in, physiology and biochemistry. Applications, giving full particulars of academic career and qualifications, together with the names of three referees, must be sent by May 15th to Mr. C. O. G. Douie, secretary, University College, Gower Street, W.C.1, from whom copies of the regulations can be obtained.

LONDON HOSPITAL MEDICAL COLLEGE

An open entrance scholarship, value £100, offered by the London Hospital Medical College has been awarded to G. E. Godber of New College, Oxford.

UNIVERSITY OF DUBLIN

TRINITY COLLEGE

At the first summer commencements, in Trinity Term, held on April 24th, the following degrees in the Faculty of Medicine were conferred:

M.D.—H. O'D. Burke-Gaffney, J. V. Carroll.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Six Hunterian Lectures on "Human monsters and malformations," illustrated by specimens, will be delivered in the theatre of the College by Sir Arthur Keith, M.D., F.R.S., on May 4th, 6th, 8th, 11th, 13th, and 15th. The first five lectures will be given at 5 p.m., and the last at 4 p.m.

Colonel Robert McCarrison, M.D., F.R.C.P., I.M.S., will give two lectures on "Experimental research at the Pasteur Institute, Coonoor, South India," on May 18th and 20th, at 5 p.m. The lectures will be illustrated by lantern slides and by specimens.

The subject selected for the Jacksonian prize for 1932 is "The pathology, diagnosis, and treatment of diverticula of the large and small intestine." Candidates must be Fellows or Members of the College, and essays must be received by December 31st, 1932. Full particulars can be obtained from the secretary.

Medical News

The Robert Jones Medal and Association Prize of the British Orthopaedic Association for 1930 has been awarded to Mr. Harold Clifford Edwards for his essay on "Injuries of the tendons and muscles."

The annual banquet of the Royal Medico-Psychological Association will be held in Dublin on Wednesday, July 8th, under the presidency of Dr. Richard Leeper.

A festival dinner in aid of the West London Hospital will be held at the Guildhall on May 12th, when H.R.H. Prince Arthur of Connaught will take the chair as president of the institution. On the afternoon of April 24th Prince Arthur visited the hospital and inspected the departments affected by the scheme of reconstruction and extension.

The annual general meeting of the Society for Relief of Widows and Orphans of Medical Men will be held at 11, Chandos Street, Cavendish Square, W., on Wednesday, May 13th.

A discussion on the relative value of induction of premature labour, test labour, and Caesarean section in the treatment of minor degrees of contracted pelvis will take place at the annual meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on Friday, May 15th, at 8 p.m.

Particulars of the lectures and demonstrations arranged for next week by the Fellowship of Medicine will be found in our Diary of Post-Graduate Courses, published in the *Supplement* at page 188. Several special courses have been arranged. Copies of syllabuses and tickets of admission can be obtained from the Fellowship, 1, Wimpole Street, W.1.

At a meeting of the National Institute of Industrial Psychology on Tuesday, May 12th, at 5.30 p.m., in the committee room of the Royal Automobile Club, Pall Mall, S.W., Dr. G. H. Miles, the director of the institute, will lecture on practical tests for drivers. This lecture is being held in connexion with the National Safety Week. The chair will be taken by the Hon. Sir Arthur Stanley.

An intensive post-graduate course in neurology and psychiatry will be held in Professor Wagner von Jauregg's Clinic, Vienna, from June 30th to July 31st. The pathology and treatment of the various nerve diseases will be dealt with fully, and special attention will also be paid to psychotherapy in its different aspects. The fee is 150 dollars U.S.A. (about £30), and payment may be made to the American Medical Association of Vienna, Alserstrasse 9, Vienna VIII, whence full details of the course may be obtained.

The following Friday evening discourses will be given this month at 9 o'clock at the Royal Institution (21, Albemarle Street, W.): May 8th, Dr. G. W. C. Kaye, superintendent of the physics department, National Physical Laboratory, on the measurement of noise; May 15th, Professor J. C. Philip, on experimental aspects of hydrogen-ion concentration; May 22nd, Sir William Bragg, on x-ray investigations of the structure of liquids; May 29th, Dean Inge, on the future of the human race.

An international conference on child welfare in Africa will be held at Geneva from June 22nd to 25th. The subscription is 15 Swiss francs. Further information can be obtained from the British Committee of the International Conference on African Children, c.o. Save the Children Fund, 26, Gordon Street, W.C.1.

The second biennial conference of the National Council for Mental Hygiene will be held from May 27th to 29th at the Central Hall, Westminster, and the subject of discussion will be the human factor as it affects international problems, crime, industry, the social services, and education. There will be afternoon and evening sessions, at 3 p.m. and 8.15 p.m. respectively. Delegates from societies and associations throughout Great Britain and from the Colonies have been appointed to the conference, and representatives from foreign organizations for mental hygiene are also expected to attend. Further particulars may be had from the secretary, 78, Chandos House, Palmer Street, S.W.1.

The fifth Congress of the French Societies of Oto-neuro-ophthalmology will be held in Paris from June 18th to 21st, with Professors Barré of Strasbourg, H. Roger of Marseilles, Portmann of Bordeaux, and Coppez of Brussels as presidents of honour, and Dr. Velter of Paris as president. The subject for discussion will be the oto-neuro-ophthalmological sequels of epidemic encephalitis, introduced by Drs. Portmann of Bordeaux, Riser and Ménéil of Toulouse, and Teulières and Beauvieux of Bordeaux. Further information can be obtained from the general secretary, Dr. A. Tournay, Rue St. Lazare, Paris 9e.

The eighth International Congress of Photography, which was to have been held in Dresden in the last week of July next, has been postponed until August 3rd to 8th owing to the third International Radiological Congress being held in Paris at the former date. Further information can be obtained from Dr. R. Luther, Paradiesstrasse 2, Dresden-A-20.

An International Milk Congress will assemble in Copenhagen from May 14th to 17th, when a discussion will be held on the preparation of milk in different countries, with special reference to public health. Further information can be obtained from the secretary, International Milk Congress, 1931, Copenhagen.

A congress on nephrolithiasis will be held on May 24th and 25th at Vittel, when addresses will be given by Drs. Loeper, Valléry Radot, Labbé, Legueu, Abrami, van Leersum, and others. The subscription is 25 francs. The congress will be followed by a motor car excursion to the Vosges. Further information can be obtained from the general secretary, Dr. Maurice Boigey, Vittel.

The anniversary of Florence Nightingale's birthday, May 12th, is to be celebrated this year as Red Cross Day throughout the Empire. The April number of the *British Red Cross Society's Quarterly Review* is largely devoted to a study of her life.

Messrs. W. Heffer and Sons, Ltd., of Cambridge, have published for the Association of British Chemical Manufacturers, at the price of 2s., an *Index to Acts of Parliament and Statutory Rules and Orders affecting the Chemical Industry*, revised to the end of last year. The next list will be published early in 1932.

The issue of the *Zentralblatt für Gynäkologie* (No. 11a) is dedicated to Professor Walter Stoeckel, director of the women's clinic of Berlin University, on the occasion of his 60th birthday.

Strasbourg médical is this year celebrating the ninetieth anniversary of its foundation in 1841, when it was known as *Gazette médicale de Strasbourg*, a title which it retained until 1914.

The King has granted to Major John C. Collins, R.A.M.C., licence and authority to wear the Insignia of Commander of the Order of the Nile conferred upon him by the King of Egypt in recognition of valuable services rendered.

Dr. W. Norwood East, Medical Commissioner of Prisons, has been appointed by the Home Secretary a member of the committee to inquire into existing methods of dealing with persistent offenders, and report what changes, if any, are desirable in the present law and administration.

The Brighton Town Council has ordered the preparation of plans for a sea-water swimming bath, medical baths, and a clinic for the treatment of rheumatism.

In the course of last year twenty-seven new Italian medical journals appeared and nineteen suspended publication. The largest output was presented by phthisiology, the journals dealing with this subject representing at least a quarter of all the new periodicals published in the course of the year.

We are asked by the Cure Commission at Hofgastein, Austria, to announce that their thermal baths will in future be available to qualified doctors and dentists free of cost. Members of these professions are exempted from the cure and music taxes, as are also their immediate relations, for whom special terms have been arranged.