double cell, and dilute sulphuric acid in the outer. The cell is connected with the terminals of six Grove cells and the current allowed to run for six or eight hours. This method is perfectly satisfactory, but is capable of several minor improvements which greatly increase the simplicity of the test without altering its delicacy. The following are details of the exact method we have adopted with most satisfactory results.

"About 250 c.cm. of the suspected urine are placed in a porcelain dish (free from lead), and a few cubic centimetres of lead free sulphuric acid. A small flame is placed beneath the dish, and about 5 grams of potassium persulphate ($\text{K}_2\text{S}_2\text{O}_8$) are added little by little, with occasional stirring, the temperature of the liquid being gradually raised to 100°C . In about half an hour the contents of the dish will have become almost colourless, owing to the oxidation of the organic matter.

"Potassium persulphate is now a commercial product, and possesses many advantages over other oxidizing agents. Its substitution for hydrochloric acid and potassium chlorate does away with the evolution of noxious fumes and the prolonged boiling necessary to get rid of excess of the latter. When the liquid has concentrated to about 50 c.cm., it is introduced into a platinum dish, and an electric current passed through it for about eight hours. The current is obtained from the main supply by first running it through a lamp, as shown in the accompanying diagram:

"Before commencing the experiment the poles are tested by introducing the terminals into a solution of salt containing a few drops of phenol phthalein. After allowing the current to run for a sufficient time (conveniently over night) the liquid is poured away, and the dish well washed with distilled water. Hydrochloric or nitric acid is then added, and after digesting on the water bath or heating over a bunsen flame, a stream of sulphuretted hydrogen is passed through the liquid. The quantity of lead present may be accurately determined by matching the colour with a standard solution of lead nitrate. Great care must be taken to obtain lead-free sulphuric acid, and every fresh batch of materials should be tested by a blank experiment. As before mentioned, by employing the test in this way the most minute quantities of lead have been easily detected in specimens of urine when other tests have given negative results."

I have to thank the staff of the General Hospital for allowing me to make use of cases which I saw there while house-physician.

THE INFLUENCE OF SOME MODERN DRUGS ON METABOLISM IN GOUT.

By WILLIAM BAIN, M.D., M.R.C.P.,
Harrogate.

THE increasing attention paid to variations in the constitution of the urine in gout has been partly directed to the relative proportions of the nitrogenous end products. From the therapeutic standpoint modifications induced by different substances in such urines have been studied by many observers. It is obvious that if drugs having a beneficial effect on the disease produce variations of a similar kind, a basis is provided from which inferences can be drawn in regard to the question of its causation. Among drugs employed in the treatment of this affection are a number which have been ex-

tensively recommended in recent times, and *a priori* might be expected to produce similar quantitative modifications of the urine. Such are tartrate of piperidin, benzoate of lithium, piperazin, lysidin, urotropin, sidonal, and colchi-sal. With the main object of ascertaining the influence of the drugs mentioned on metabolism they were administered to a case of chronic gout, the patient being on a fixed diet during the investigation. The general result was to indicate an absence of uniformity; a remark which applies with special force to the excretion of uric acid.

In an earlier case the investigation was rendered abortive through the development of a subacute attack of gout. This case is however included in the paper, owing to a special point of interest. It will be unnecessary to give more than the briefest clinical details of these two cases. As the methods of analysis and diet were similar in both cases they may be described now.

Methods of Analysis.—The urea was estimated by the hypobromite method, and the uric acid by Hopkins's process. For the estimation of the acidity titration by decinormal caustic soda was adopted, phenolphthalein being the indicator. For the P_2O_5 titration with uranium nitrate was employed.

The sulphates were estimated as follows: To 200 c.cm. of filtered urine 10 c.cm. of hydrochloric acid was added, followed by an excess of a saturated solution of barium chloride. The flask was shaken, and the precipitate allowed to settle. It was then separated by filtration, and washed chloride free with cold distilled water. The filtrate and washings were boiled for fifteen minutes and allowed to stand over night. In this case also the precipitate was washed chloride-free with hot distilled water. Both precipitates were further washed with alcohol and ether, dried and incinerated in a weighed capsule, the filter papers being of known ash.

Blood.—The films in Case I were fixed with formalin vapour, and stained with eosin and Loeffler's methylene blue. In Case II the films were fixed with heat (120° for about fifteen minutes) and stained, as in Case I.

Fixed Diet.—Breakfast: Tea, 1 pint; bread, 3 oz.; butter, 1½ oz.; and egg, 2 oz. Lunch: Milk, ½ pint and 2 biscuits. Dinner: Bread, 1½ oz.; meat, 4 oz.; potatoes, 3½ oz.; butter, ½ oz.; apples, 4 oz.; and lemonade, 4 oz. Tea, 1 pint; bread, 3 oz.; butter, 1½ oz.; and egg, 2 oz. Supper: ½ pint beef-tea.

Case II was placed on the fixed diet with regulated exercise four days before the analysis of the urine was commenced, and after Christmas similar conditions were observed.

I take this opportunity of thanking Dr. Barrs for his courtesy in placing the two cases at my disposal, and also Dr. Telling for supervising the diet and treatment.

CASE I. History.—W. P., aged 54, a coach trimmer, was admitted on November 4th, 1900, into the Leeds Infirmary. His relatives were long-lived, and there was no family history of gout or rheumatism. Apart from gout he had always enjoyed good health. Twenty years previously he had an acute illness associated with severe pain in the great toe. This attack he attributed to sleeping in a damp bed. Subsequently other joints became affected. During the last five years subacute attacks had recurred every three or four months. He had always lived well, eating, as he said, more meat than bread, and drinking a moderately large quantity of beer.

State on Examination.—On admission there were many tophi in both ears, with small gouty deposits in the fingers and toes. The radial tension was markedly increased. On November 11th his temperature rose to 100°F , the left knee being painful and swollen. On the following day his temperature was 101°F . The urine at first contained a moderate amount of proteid, about one-twentieth by measurement, but with the advent of the febrile attack the proportion rose to about one-fourth.

An interesting point was the marked preponderance of serum globulin over serum albumen. As this is considered very unusual it is advisable to detail the method of estimation.

Quantitative Estimation of Serum Globulin.—On the addition of acetic acid in the cold to the filtered urine no precipitate formed. On boiling the filtered urine after the addition of a few drops of acetic acid there was a precipitate amounting to about ⅓ by measurement. A sample of the urine was half saturated with ammonium sulphate. It was then filtered, and the filtrate boiled after the addition of a few drops of acetic acid; a mere cloudiness resulted which remained unchanged after the lapse of forty-eight hours. Full saturation with magnesium sulphate in neutral solution gave a similar result.

It was decided that the supervention of the febrile attack with marked albuminuria rendered this case unsuitable for the investigation of the action of drugs and another was selected.

The results obtained in Case I are given in Table I on p. 244. The most notable and characteristic features of these results are the low excretion of uric acid preceding the subacute attack, and the increase after its development. Possibly the uric acid secretion was modified by the exhibition of colchi-sal, but, judging by its effect in the second case, this modification

CASE I.—TABLE I.—Showing the Analytical Details of the Urine in the Twenty-four Hours.

Date.	Drugs Administered.	Total Quantity.	Specific Gravity.	Urea.	Acidity in Terms of Oxalic Acid.	Uric Acid.	P ₂ O ₅ .	Preformed Sulphates.	Ethereal Sulphates.
		c.cm.	grms.	grms.	grms.	grms.	grms.	grms.	grms.
Nov. 6	—	1,150	1018	25.30	2.79	0.281	1.78	1.84	0.196
" 7	—	950	1020	24.70	2.51	0.243	1.99	1.82	0.146
" 8	—	1,390	1017	26.01	2.62	0.340	1.94	1.91	0.156
" 9	—	1,120	1016	28.02	2.58	0.304	1.90	2.01	0.289
" 10	—	1,394	1014	25.78	2.46	0.250	1.88	1.81	0.136
" 11	—	1,084	1012	27.72	2.61	0.316	1.97	1.89	0.114
" 12	Colchi-sal,	820	1020	25.42	2.37	0.389	1.76	1.96	—
" 13	3 capsules	960	1022	29.76	3.29	0.480	1.72	2.10	—
" 14	three times	890	1024	27.79	3.66	0.460	2.12	1.87	0.091
" 15	a day	860	1023	24.94	2.60	0.472	2.28	1.79	—
" 16	—	1,284	1017	28.24	3.07	0.501	2.34	2.02	0.183

was not in the direction of an enhanced excretion. Some writers state that the acidity of the urine varies directly with the excretion of uric acid. To this view the results give some support, although the variations are not consistently parallel.

The examination of the blood revealed a distinct leucocytosis. On a differential count it was shown that the true eosinophile cells were markedly increased, and there was present a moderate number of the peculiar myelocyte-like cells originally described by Chalmers Watson. I am indebted to Professor Birch for his kindness in preparing the films in this case.

CASE II.—TABLE I.—Showing the Analytical Details of the Urine in the Twenty-four Hours.

Date.	Drugs Administered.	Total Quantity.	Specific Gravity.	Urea.	Acidity in Terms of Oxalic Acid.	Uric Acid.	P ₂ O ₅ .	Preformed Sulphates.	Aromatic Sulphates.
		c.cm.	grms.	grms.	grms.	grms.	grms.	grms.	grms.
Nov. 21	—	1,290	1016	24.51	2.76	0.412	2.19	1.61	0.155
" 22	—	1,100	1018	23.10	2.32	0.400	1.92	1.54	0.132
" 23	—	1,083	1015	23.76	2.48	0.437	1.84	1.56	0.132
" 24	—	1,144	1015	24.02	2.34	0.456	1.77	1.50	0.084
" 25	—	1,105	1013	22.10	2.57	0.396	1.82	1.65	0.100
" 26	—	995	1016	20.89	2.19	0.388	1.76	1.48	0.085
" 27	Tartrate of piperidin,	965	1016	20.74	2.12	0.394	1.59	1.64	0.135
" 28	10 gr. three	1,075	1015	20.96	2.21	0.398	1.61	1.37	0.133
" 29	times a day	1,310	1015	21.61	2.52	0.412	1.81	1.59	0.137
" 30	—	1,390	1013	21.78	2.29	0.464	1.71	1.55	0.131
Dec. 1	—	1,250	1015	25.00	3.15	0.491	2.08	1.71	0.108
" 2	—	1,125	1014	22.61	2.33	0.417	1.70	1.54	0.143
" 3	—	1,500	1012	22.50	2.45	0.449	1.87	1.48	0.131
" 4	Benzoate of lithium 15 gr.	1,375	1015	20.90	1.99	0.405	1.75	1.47	0.172
" 5	three times a day	1,445	1012	24.56	2.45	0.411	1.84	1.06	0.146
" 6	—	1,015	1014	20.09	2.12	0.373	1.74	1.46	0.104
" 7	—	1,240	1016	25.79	2.71	0.481	1.93	1.80	0.104
" 8	—	1,060	1015	22.26	2.16	0.373	1.85	1.50	0.095
" 9	—	1,190	1014	26.18	3.14	0.467	2.14	1.73	0.143
" 10	—	1,083	1013	22.20	2.59	0.407	1.79	1.54	0.102
" 11	—	1,495	1013	25.41	3.76	0.508	2.27	1.86	0.136
" 12	Piperazin	945	1017	21.92	4.47	0.421	1.70	1.46	0.082
" 13	15 gr. three	1,334	1016	24.41	3.52	0.531	1.76	1.87	0.091
" 14	times a day	1,350	1012	22.27	3.06	0.538	1.78	1.63	0.113
" 15	—	1,315	1014	22.80	3.31	0.468	1.89	1.65	0.072
" 16	—	1,735	1012	28.10	3.42	0.612	2.28	2.14	0.167
" 17	—	1,285	1015	22.48	2.67	0.452	1.72	1.71	0.122
" 18	—	1,515	1012	23.62	2.86	0.433	1.82	1.71	0.165
" 19	—	1,495	1012	22.42	2.61	0.452	1.94	1.83	0.128
" 20	—	1,390	1013	21.42	2.41	0.459	1.76	1.66	0.131
" 21	Lysidin,	1,375	1013	23.37	3.44	0.599	2.06	1.76	0.148
" 22	15 gr. three	1,290	1013	24.60	2.63	0.599	1.96	1.72	0.073
" 23	times a day	1,485	1014	25.24	2.86	0.550	2.01	2.11	0.130
" 24	—	1,220	1014	21.96	2.19	0.452	1.75	1.73	0.146
Jan. 8	—	1,218	1015	22.27	2.38	0.481	1.91	1.81	0.132
" 9	Urotropine,	1,265	1014	24.66	2.69	0.426	1.99	1.86	0.135
" 10	10 gr. three	1,460	1014	25.30	2.50	0.423	2.01	1.83	0.113
" 11	times a day	1,365	1012	24.84	2.64	0.460	2.07	1.87	0.130
" 12	—	1,525	1011	24.30	2.51	0.414	2.06	1.71	0.146
" 13	—	1,555	1011	23.32	2.37	0.466	1.92	1.81	0.158
" 14	—	1,385	1012	21.85	2.93	0.492	2.07	1.72	0.145
" 15	—	1,508	1011	22.62	3.13	0.539	2.17	1.94	0.139
" 16	Sidonal 25 gr.	1,388	1013	23.59	2.27	0.505	1.87	1.74	0.121
" 17	three times a day	1,370	1015	24.11	2.80	0.538	2.02	1.87	0.188
" 18	—	1,325	1014	21.12	3.02	0.511	1.94	1.75	0.161
" 19	—	1,523	1011	22.84	3.43	0.536	2.12	1.99	0.172
" 20	—	1,130	1015	21.47	2.53	0.364	1.66	1.75	0.158
" 21	—	1,585	1015	26.04	3.85	0.488	2.15	1.98	0.116
" 22	Colchi-sal,	1,345	1014	22.86	3.21	0.348	2.12	1.67	0.168
" 23	3 capsules	1,290	1016	23.68	2.93	0.346	2.00	1.95	0.195
" 24	three times	1,025	1018	21.52	2.58	0.397	1.76	1.62	0.172
" 25	a day	1,265	1016	22.77	2.86	0.459	2.09	1.56	0.215
" 26	—	1,165	1015	20.97	2.77	0.502	1.97	1.66	0.101

CASE II. History.—J. M., aged 56, a plumber, had nothing of importance in his family history. His habits were temperate both in regard to alcohol and food. His first attack occurred sixteen years previously, but shortly before this he had symptoms which his medical adviser ascribed to lead poisoning. There was moderate pain in the proximal joint of the great toe. This disappeared in a few days. In a few months there was recurrence, other joints becoming affected. A year after the first attack he had an acute illness—probably rheumatism—during which nearly all the large joints were affected.

State on Examination.—Tophi were found on both ears. There was slight eversion of the fingers, with gouty enlargement of several joints. The metatarso-phalangeal joints of the great toes were somewhat enlarged and the toes slightly everted. The left knee was tender, and creaking could be heard on flexion. There was loss of power in the left leg owing to the sciatic nerve being affected. The pulse tension was slightly increased. There was the merest trace of albumen in the urine, which persisted throughout the investigation. The patient improved considerably during his stay in the hospital.

Referring primarily to the estimations made before the administration of drugs, it will be seen that the fluctuations are within physiological limits with one possible exception, namely, the aromatic sulphates. On two occasions their amount in relation to the preformed sulphates are below what may be regarded as the normal proportions. The uric acid excretion throughout is somewhat below the normal average. It will be observed that the acidity does not bear any proportionate relationship to the uric acid. I have stated in former papers that a rough parallelism existed between the excretion of uric acid and phosphorus pentoxide. In this case and the previous one the urine was generally very faintly acid and occasionally neutral, with the result that some of the earthy phosphates was frequently deposited. It is a point of practical importance that, even by vigorous agitation, this deposit cannot be uniformly diffused throughout the urine; consequently, the results obtained by the titration of a portion are not strictly reliable. The difficulty could be overcome by redissolving them with acetic acid, but this proceeding would interfere with the estimation of the acidity.

In view of the theory that impairment of the renal function is a necessary antecedent of gout, it may be pointed out that in the cases considered in this paper there was albumen associated with very moderate gouty deposits, whereas in two cases formerly reported by me the patients' urine contained no albumen, and yet the uratic deposits were excessive. It is also of some interest in the same connexion that in Case I there was a marked augmentation of the albumen coincident with the development of the subacute attack.

The blood preparations in this case, as compared with the former, gave almost negative results. There was an absence of leucocytosis, and the eosinophile cells were normal in number. There were, however, a few scattered leucocytes of the type described by Chalmers Watson with the pale staining eccentric nucleus.

CASE II.—TABLE II.—Averages.

	Urea.	Acidity.	Uric Acid.	P ₂ O ₅ .	Preformed Sulphates.	Aromatic Sulphates.
	Grams.	Grams.	Grams.	Grams.	Grams.	Grams.
Fixed diet ...	23.70	2.44	0.413	1.88	1.55	0.114
Tartrate of piperidin...	21.27	2.28	0.417	1.68	1.53	0.134
"	23.37	2.64	0.452	1.88	1.57	0.127
Benzoate of lithium...	22.83	2.31	0.419	1.81	1.47	0.131
"	24.01	2.91	0.438	2.01	1.65	0.119
Piperazin ...	22.87	3.59	0.489	1.78	1.65	0.089
"	23.60	2.79	0.481	1.90	1.81	0.142
Lysidin ...	23.79	2.78	0.505	1.94	1.83	0.124
Urotropin ...	24.80	2.84	0.430	2.03	1.81	0.128
"	22.58	2.65	0.479	1.99	1.76	0.156
Sidonal ...	22.85	2.93	0.525	2.02	1.83	0.156
"	24.20	3.19	0.426	1.90	1.86	0.162
Colchi-sal ...	22.70	2.89	0.387	2.01	1.68	0.187

Tartrate of Piperidin has been introduced by Tunncliffe as a biurate solvent. Its action in this case on the excretion of uric acid appears to be slight, but the rise after its discontinuance warrants the hope of a more definite result if given in larger doses over a longer period.

Benzoate of Lithium.—The lithium salts have had a great reputation in gout since Garrod recommended them, but the administration of the benzoate has absolutely no apparent effect on metabolism.

Piperazin.—It is evident that piperazin has a slight augmenting influence on the excretion of uric acid, but a more

striking concurrent variation was the diminution in the aromatic sulphates.

Lysidin.—The augmentation of the uric acid excretion by lysidin is distinct, other variations being inconsiderable.

Urotropin is a drug specially efficacious as a urinary antiseptic. Its influence on uric acid excretion is shown in the table to be practically negative. The average is certainly higher than before the administration of drugs, but there is actually a slight fall relative to the excretion of the previous day.

Sidonal.—It has been claimed for sidonal that it reduces the production of uric acid to a remarkable extent, but it will be observed that the figures in the table are distinctly antagonistic to that claim. Of all the drugs used sidonal is the one with which is associated the most marked advance in the uric acid excretion.

Colchi-Sal.—As regards uric acid colchi-sal stands at the opposite end of the scale from sidonal with a minimum excretion. On the other hand it will be noted that the ethereal sulphates rise to a point above the normal proportion of 1 to 10 in relation to the preformed sulphates, the figures being the highest in the table. Curiously enough the patient was of the opinion that he derived greater benefit from colchi-sal than from any of the prescribed substances.

Subsequent to the investigation of the drugs just reviewed, my attention was drawn to tetra-ethyl ammonium hydrate, a uric acid solvent the power of which was demonstrated in Edison's laboratory to be ten times greater than piperazin. If a reliable biurate solvent were available it would provide an important means of treating gout. I therefore tested *in vitro* the solvent properties of the drug in this respect. The method employed has been described in a previous paper dealing with the solvent action of mineral waters on sodium biurate. The subjoined table indicates the result:

Table showing the Solubility of Sodium Biurate in 100 c.cm. of Distilled Water at a Temperature of 38° C., and in Distilled Water containing various Proportions of Tetra-ethyl Ammonium Hydrate.

	Sodium Biurate Dissolved in Terms of Uric Acid.
Distilled water... ..	0.115 gram.
1 per cent. tetra-ethyl ammonium ..	0.142 "
3 " " " " " "	0.240 "
5 " " " " " "	0.360 "

It will be seen that a 0.5 per cent. solution is a moderately powerful solvent for biurate. The substance being strongly alkaline it was a question whether the effect depended on an inherent chemical attribute or was the outcome of its alkalinity. To decide this point approximately liquor potassae was then tried, and its solvent power found to be comparable with the other. The experiment was carried a step further by exactly neutralizing the alkalinity of tetra-ethyl ammonium hydrate with hydrochloric acid. This resulted in an absolute loss of solvent power. The clinical test is, however, the more important. The dose is 10 to 20 minims of a 10 per cent. solution. This drug should not be confounded with tetra-methyl ammonium, which is a powerful poison.

SUMMARY OF OBSERVATIONS.

1. There was an increase in albumen coincident with the development of a subacute attack of gout.
2. A preponderance of serum globulin over serum albumen was observed.
3. There were present in the blood the peculiar leucocytes described by Chalmers Watson.
4. Lithium benzoate and urotropin were ineffective as regards uric acid excretion.
5. Tartrate of piperidin, piperazin, lysidin, and sidonal in the order named showed an increasingly augmenting effect on the uric acid excretion.
6. The excretion of uric acid was diminished during the administration of colchi-sal and the conjugated sulphates increased.
7. The solvent action of tetra-ethyl ammonium hydrate on sodium biurate probably depends upon its alkalinity.

DONATIONS AND REQUESTS.—At a meeting held on January 16th on behalf of the Hospital for Women in Birmingham £13,000 was raised, of which Mr. Arthur Chamberlain and Mr. Barrow Cadbury each gave £2,000.—The Chelsea Hospital for Women has received from "H. M. E." a further donation of £2,000.—Under the will of the late Mr. William Wells, of Guildford, the Royal Surrey County Hospital receives a legacy of £1,500, and the Surrey Convalescent Homes, for Men at Seaford and for Women at Bognor, receive £1,000 each.

ON A CASE ILLUSTRATING THE VALUE OF PHYSIOLOGICAL REST.*

By W. M. WILLIS, F.R.C.S.ENG.,

Assistant Surgeon, Nottingham General Hospital and Nottingham Children's Hospital.

IN that delightful book of the late Mr. John Hilton, entitled, *Rest and Pain*, are recounted numerous cases illustrating the facility with which obscure cases of disease were accurately diagnosed by an ingenious process of reasoning from a knowledge of the anatomical distribution of nerves applied to the situation of pain complained of by the patient. The ingenuity of the reasoning and the accuracy of diagnosis arrived at by this anatomical knowledge cannot but excite admiration; and one is struck, as is usual with great truths, by the simplicity of the whole.

In addition to these lectures dealing with the diagnostic value of pain, there are others, which equally excite interest, in relation to the value of mechanical and physiological rest as a curative agent in injury and disease.

The case which forms the basis of this short paper is one which illustrates this truth very forcibly.

G. K., aged 72, is a man whom I saw in consultation with my friend Dr. Fulton on February 27th, 1902.

History.

His complaint was of pain in the rectum and the passage of large quantities of pus and blood. The passage of a motion was attended by severe pain, which was aggravated if the faeces were hard. In addition to the pus and blood which accompanied the motion there was a similar discharge coming through the anus in the intervals also. He had to some extent lost control over the sphincter, and was therefore in the horrible condition of a person who has involuntary evacuations. A short time before he began to complain of rectal symptoms he had sustained some accident by being crushed, but no bones had been broken, and the injuries were chiefly bruising and the shock which such an accident would entail on an old man. There was no evidence to show that his accident had any bearing upon his rectal disease, but it was in the course of his enforced rest in bed which the accident entailed that he first made any complaint about his bowel.

Fifteen years previously he had suffered from fistula in ano, and had been operated upon for this condition. This had been well for years, and did not appear to have been in any way connected with the condition for which I was asked to see him. Quite recently he had had an attack of urethritis; whether this had any bearing on his rectal trouble I cannot say.

Shortly after he began to have trouble in his rectum a large slough was passed per anum, and thereafter, in spite of treatment, he continued to pass pus and blood, and to suffer much pain, especially when the bowels acted.

Physical Signs.

On examining the rectum, which had to be done with the utmost gentleness on account of the pain it produced, there was discovered a large ulcerating surface on the posterior wall, and extending around the greater part of the circumference of the bowel, and reaching down to within about 2 in. of the anus. It had a ragged feeling to the touch, but was not indurated to a greater degree than that usual in inflammatory tissue which has been newly produced. A little above the lower edge of the ulcerated surface the finger entered a hole, and without the slightest force passed into a sinus or fistula which appeared to traverse the rectal wall in the direction of the upper part of the sacrum; it was of such a length that its upper limit could not be defined. The finger could, however, reach healthy mucous membrane beyond the upper border of the surface ulceration.

Dr. Fulton agreed with me in my belief that we could exclude malignant disease from the fact that there was an absence of the extreme induration of the edges of the ulcer which usually characterizes that condition. In addition, it is uncommon for a growth in the rectum to be attended with so large a discharge of true pus as in this case.

There was nothing in the history of the patient beyond the fact of the fistula, which existed years ago and had been well for so long, to excite a suspicion of it being tuberculous in character. His age, and the acuteness of the trouble also rendered tubercle improbable. His sex and the characters of the ulcer were opposed to the idea of its being syphilitic, and in addition to that there was no history suggesting that he had at any time had syphilis. Dysentery could also be excluded in the absence of any symptoms of this disease, and from the fact that the rectum is rarely ulcerated in this condition.

To what then was it due? At the time, the most I felt I could say was that it was of an inflammatory nature, but that

* Read at a meeting of the Nottingham Medico-Chirurgical Society.