early on the fifth day—the abdominal condition apparently remaining satisfactory to the last.

In reviewing the case, I cannot but regret that I did not attempt to relieve the chest-complication by aspiration of the tumour a few days before operating. Had I done so, it is possible that the patient might have fought through the lung-complication, and have recovered, always provided that there was no sepsis present, due to the tapping previously to her admission; and of this I cannot feel absolutely certain, as no *post mortem* examination was obtainable.

My third fatal case (No. 31 in the series) was a very unfortunate one. The patient, a married woman, aged 33, was admitted under my care, in the Samaritan Hospital, in May 1883. The tumour, an ordinary multilocular cystoma of the right ovary, was non-adherent, and its removal presented no special difficulty of any kind. Shortly after placing the patient in bed, my suspicions were aroused that something had gone wrong with the sponges; and, on investigation, I discovered that, before being immersed in carbolic lotion for the operation, they had been left exposed during some hours in close proximity to an open jar, containing a putrid specimen (uterus and ovaries), removed *post mortem*, a week previously, from a patient who had died in the hospital of undoubted septicæmia. No one had called my attention to this fact, and I operated in complete ignorance of anything having gone wrong.

The patient showed no signs of the mischief during the first forty-eight hours, with the exception of constant sickness; but, on the third morning, both pulse and temperature suddenly rose, and the ice-cap was at once applied. From that time until her death, which occurred five days later, the case presented all the ordinary features of septicæmia of an infective type.

The following notes of the *post mortem* examination, for which I am indebted to my colleague, Mr. Doran, are quite typical, as far as they go; the lining membrane of the pericardium, heart, and large vessels was not, however, specially examined. "*Thorax*: Both lungs were congested, the bronchial tubes being universally engorged. There was no fluid in the pericardium; the heart-substance appeared healthy; there was no valvular disease; the right cavities were filled with soft dark clot. *Abdomen*: There were no signs of general peritonitis, but the serous membrane was injected in patches near the pelvis. There was no effusion of any kind, with the exception of a drachm or two of blood-stained fluid at the bottom of Douglas's pouch. The intestines, mostly flaccid, were quite free from adhesions, old or recent. The liver was pale and bile-stained, its substance soft and greasy. The spleen appeared fairly normal. Both kidneys showed evidence of recent congestion. The uterus was somewhat enlarged; the ovarian pedicle, about equal in size to a cob-nut, was secured by a double silk ligature, and capped by a very soft dark clot. The left ovary was small, and atrophied."

Looking back, I now very much regret that I did not, on discovering what had occurred, at once re-open the abdomen, and insert a tube. Had this been done, I think it just possible that the patient might have pulled through; at all events, drainage would have afforded her an opportunity of getting rid of the poison gradually, and thus have given her some chance of life.

My fourth and last fatal case (No. 44 in the series) was that of a patient aged 53, the subject of a rapidly increasing abdominal enlargement, first noticed four months previously to my seeing her. She had been twice tapped during that period, the fluid withdrawn being considered as ovarian. At the operation, I found a very soft semi-solid tumour of the left ovary, surrounded by a considerable quantity of free fluid; the liver was greatly enlarged, extending downwards to well below the level of the umbilicus. The tumour, which, on examination after removal, proved to be malignant, was extracted with some difficulty, owing to its size. A drainage-tube was inserted before closing.

The patient, who was suffering from extensive anasarca, and in all ways a most unfavourable subject for treatment, did badly from the first. There was never any great rise of temperature, but the pulse-rate mounted steadily from the evening of the operation. In forty-eight hours, she became semi-comatose, with muttering delirium, and death occurred on the third day, apparently from exhaustion. No *post mortem* examination was obtainable.

Now, in reviewing the causes of the fatal termination of these four operations, from the stand-point of Listerism, I cannot myself feel that they in any way tend to diminish my faith in the efficacy of the method as applied to ovariectomy. Two of the cases died of undoubted septicæmia; but in both my antiseptic arrangements were at fault—in the one instance, owing to failure of the spray; and in the other, from septic infection of the sponges previous to the operation. Both the remaining cases had been tapped, without antiseptic precautions, before

coming under my care; and, although in both there were other causes than septicæmia sufficient to account for the fatal result, yet, admitting the possible existence of sepsis, its origin might well, in my opinion, have dated from these previousappings.

It now only remains for me to say a few words respecting the cases included in my second table (nine in number), all of which recovered, with the exception of one of the incomplete ovariectomies.

The tumour in this instance was of enormous size, having developed very rapidly in the course of the previous nine months. The patient, who had been tapped no fewer than six times during that period, was extremely feeble, and so reduced by constant vomiting that it was evident she had not many days to live, unless something were done for her relief. The operation, in these circumstances, was undertaken only at the earnest solicitation of herself and her friends. Adhesions were universal, and, although the main mass of the tumour was removed, a considerable portion of it, closely involving the splenic flexure of the colon and the neighbouring parts, was left perforce, owing to the alarming collapse of the patient. It was found impossible to revive her, and she died before the operation could be completed.

The details given in the table sufficiently explain the nature of the remaining eight cases; and I will here allude specially only to one of them—the last of the three exploratory incisions—because it serves to illustrate one of the many risks incurred through tapping ovarian cysts. The patient in question had been tapped four times in the course of eight months previously to operation. The abdominal cavity was found full of free fluid, due to masses of papilloma, which had sprouted through a very evident tapping-puncture in the wall of a small ovarian cystoma. The case was a hopeless one for further interference, as the pelvis was quite blocked by the growth, and the parietal peritoneum was extensively infected. I accordingly sponged out dry, and closed the incision. The patient returned home at the end of three weeks, but the fluid was then fast reaccumulating; and I have since learnt that she is now as large as she was before the operation.

ON THE PHYSIOLOGICAL AND CURATIVE INFLUENCE OF THE SALINE WATERS OF DROITWICH IN CERTAIN FORMS OF DISEASE.¹

By S. S. RODEN, M.D.,

President of the Worcestershire and Herefordshire Branch.

MEETING as we do to-day, on the site of the new baths of Malvern, it will be not inappropriate for me to address to you a few practical remarks on the physiological effects of the hot brine-baths upon the human system, and their bearing upon the relief and cure of various diseases.

I must preface my observations by stating that the brine is pumped up from the earth in a perfectly cold state; that it has a high density, and contains from 38 to 42 per cent. of saline matter; the latter percentage being the point of saturation; and at this strength, each gallon contains 22,212 grains; of this, 21,461 grains are chloride of sodium, 350 grains sulphate of soda, 300 grains sulphate of lime, and about 100 grains chloride of magnesium, with traces of iodine and bromine.

This brine, as may readily be supposed, is too strong to be swallowed undiluted; but, in the proportion of one part to six of common water, it can be easily taken. Hitherto, however, its internal administration has not been adopted.

For its administration in baths, the brine has to be conveyed through pipes in a cold state, being mixed with boiling water in, or immediately before passing into, the bath itself, and the temperature made exact by a judicious blending of hot and cold water with the brine. Any attempt to heat the brine itself would speedily cause precipitation of the salt, and clogging up of the pipes and valves. The brine and water are mixed in about equal proportions, giving the bath a density of 1080, or 1100.

The temperature varies from 84° to 104° Fahr., according to the effect required to be produced, and the constitution and temperament of the patient.

The hot bath proper ranges from 96° to 104° Fahr. The patient remains immersed from ten to thirty minutes. The sensation while in the bath is almost invariably one of great comfort, all pain being lulled for the time. As to the amount of perspiration that takes place in the bath, there is, of course, no means of judging further than the inference to be drawn from what is visible on the face and forehead. On emerging from the bath, the patient is enveloped in a sheet made

¹ Read at a meeting of the Worcestershire and Herefordshire Branch.

quite hot, and is put to recline on a couch for about twenty minutes, during which time there is very free perspiration. As soon as the patient feels cool enough, he proceeds to dress, and, taking reasonable care to avoid chill, returns to his rooms, where generally he remains for an hour or two, feeling probably a drowsy languor, and pretty certainly a warm glow without perspiration over the whole body. This sensation of warmth is usually persistent during the remainder of the day, but it does not prevent exercise from being taken freely in the open air, ordinary precautions presumably being taken against damp or cold winds.

In cases of gouty or rheumatic pains, the effect of the first two or three baths is to aggravate rather than to subdue them, excepting during the immersion. True neuralgic pains, on the other hand, usually are subdued at once.

The primary and possibly the chief physiological action of the hot brine upon the human frame is the powerful stimulation of the capillary circulation, first on the surface, but finally and speedily throughout the entire system.

This increased fullness of the whole capillary system may, perhaps, explain to us the increase of the pains in the early treatment by the increased amount of compression to which the nervous distribution, in parts already hyperæsthetic, must be suddenly exposed. At the same time, the marked effect produced on local effusions and thickenings in and around joints and tendons may probably be explained best by the equalisation of the general capillary circulation produced, tending to dissipate all local congestions and vascular obstructions.

This stimulation of the capillaries also influences in a marked manner the liver and kidneys, rendering the exhibition of a cholagogue purgative every few days a necessity. After four or five baths, the urine shows usually a great change; from having a density of perhaps 1018 or 1020, with light colour and little or no deposit, the density will run up to 1028, or even as high as 1032, with heavy deposits of urates and great acidity; the quantity passed is not observably diminished, but, on the contrary, in some cases would appear to have actually increased in bulk.

To enumerate the variety of ailments that derive benefit from these baths would entail a long list; but those in which the benefits are most marked and most speedily manifested are: 1, acute and subacute rheumatic gout; 2, gout and rheumatism after they have passed the true acute stage, but seem to have taken a firm grip of the system, and refuse to give up possession; 3, acute and subacute sciatica and lumbago; 4, neuralgia; 5, chorea; 6, amenorrhœa; 7, the cachectic debility of the young, spinal irritation; 8, rachitis in its earlier stages; also stiffened joints, loss of power over the limbs from rheumatic or gouty thickening of the fibrous aponeuroses and envelopes of the muscles and nerves. Affections of this character are greatly benefited by the combination of the hot and cold douche, but more especially by the hot brine-douche with the bath. Many singular and anomalous affections of the nervous system seem to yield to the influence of this treatment. As a last remark, I may say that the general effect of the bath is tonic, and not debilitating.

BEQUESTS AND DONATIONS.—Mr. William King, of Ovington Gardens, has bequeathed £100,000 Three per Cent. Consolidated Bank Annuities for endowing, or augmenting the endowment of, St. George's Hospital, on condition that one of the wards therein shall, for ever, be called "The William King Ward."—The Weymouth and Dorset County Royal Eye Infirmary has received £200 under the will of Miss Outlaw, and £50 under that of Mr. John Jacobs.—Mr. George Sturge has given £50, being the first instalment of a contribution of £500, in five years, to each of the following, namely, the West End Hospital for Nervous Diseases, etc.; the Hospital for Diseases of the Throat; the New Hospital for Women; the National Orthopædic Hospital; and the Royal London Ophthalmic Hospital.—The Grocers' Company have given £100, additional, to the Royal Free Hospital.—The Skinners' Company have given 100 guineas to the Royal Medical Benevolent College.—The Victoria Hospital for Children, Chelsea and Margate, has received £100 under the will of Miss J. C. Rawlings. The Earl of Sandwich has bequeathed £1,000 to the Dorset County Hospital, Dorchester.—Mr. George Hudson, of Monkwearmouth Grange, has bequeathed £500 to the Sunderland Infirmary.—The Jessop Hospital for Women, Sheffield, has received £250 under the will of Mr. William Ranfield, of Jurby, Isle of Man.—The Queen's Hospital, Birmingham, has received £100 under the will of Mr. Edward Cotterill, and £100 under that of Mr. J. F. West.—The Corporation of the City of London have given £210 to the Royal Free Hospital, in addition to many previous contributions.—The Grocers' Company have voted £500 in aid of the building fund of the Great Northern Central Hospital.

FIFTY-SECOND ANNUAL MEETING

OF THE

BRITISH MEDICAL ASSOCIATION.

Held in BELFAST, July 29th, 30th, 31st, and August 1st, 1884.

SECOND GENERAL MEETING: WEDNESDAY, JULY 30TH.

THE second general meeting was held in the Library of Queen's College, at 11 A.M.; Dr. JAMES CUMING, President, in the chair.

President of Council.—The PRESIDENT announced that Dr. B. Foster, of Birmingham, had been elected as President of the Council for three years, in the place of Mr. Wheelhouse.

Vote of Thanks to Retiring President of Council.—Dr. FOSTER moved: "That the best thanks of this Association be given to Mr. Wheelhouse for his eminent services as President of the Council during the past three years, and for the courtesy and ability with which he has discharged the duties of his office; and that he be elected a Vice-President of the Association for life."

During the past three years, and for many years previously, he had been closely associated with Mr. Wheelhouse on the Council of the Association, and during all that time he had been unremitting in his devotion to his duties. On no occasion had he been absent from the meetings of the Council or of the committees or subcommittees with which he was connected. When it was remembered that he was a man in busy and extensive practice, they would understand the amount of sacrifice which the discharge of his duties had entailed upon him; and they could see in that a complete answer to the statement occasionally made by their London friends, that provincial men were unable to fulfil the duties of certain honourable offices in connection with the colleges. The last year had been one of exceptional seriousness, and in previous years also there had been difficulties and dangers to be surmounted; and Mr. Wheelhouse had always fulfilled his duties with firmness, courtesy, and extreme fairness. With reference to the appointment of Mr. Wheelhouse as Vice-President, he (Dr. Foster) felt his responsibility in accepting office greatly lightened, in remembering that he should have at his side a trusted counsellor and guide in the late President of the Council.

Dr. A. T. H. WATERS (Liverpool), in seconding the motion, said he could testify to the ability, zeal, courtesy, and tact with which Mr. Wheelhouse had discharged his duties. He was glad to know that his place would be filled by one who had also shown great zeal and interest in the affairs of the Association. Happily, Mr. Wheelhouse would still be retained as one of the officers of the Association. In honouring him by electing him as a Vice-President, the Association was at the same time honouring itself.

The motion was unanimously adopted.

Mr. WHEELHOUSE said he was extremely gratified to find that the Council and the members were satisfied with the way in which he had discharged his duties; and was very grateful for the vote of thanks.

Place of Meeting in 1885: President-Elect.—Dr. FOSTER moved:

"That the invitation to hold the annual meeting in 1885 in Cardiff be accepted, and that Dr. W. T. Edwards, senior physician of the Glamorganshire Infirmary, be appointed President-elect."

The Council had received a numerous signed requisition from the profession in Cardiff and the district; and they had that day received a deputation, headed by Dr. Edwards, conveying the invitation to the members, who would be sure of a hearty welcome in South Wales in 1885.

Dr. J. W. T. SMITH (Belfast) seconded the motion, which was unanimously adopted.

Dr. EDWARDS (Cardiff), in thanking the members for his appointment as President-elect, and for their acceptance of the invitation to Cardiff next year, said that for many years the South-Wales Branch, now one of the strongest in connection with the Association, had desired to invite the Association into its borders. They had not the facilities possessed by many larger places for entertaining the members; but they could offer the Association a hearty welcome and lovely scenery, which he hoped would render the meeting of 1885 a pleasant and a successful one.

Address in Medicine.—This address was delivered by Dr. W. M. ORD, Physician to St. Thomas's Hospital, London. It was published at page 205 of last week's JOURNAL.

Dr. A. T. H. WATERS, in moving that the best thanks of the Association be given to Dr. Ord for his able and interesting address on medicine, said that Dr. Ord had travelled over a wide and difficult field, and had treated his subject with great success. The important relations of reflex action in the human economy had long occupied their atten-