highest recorded in this case, though in this instance it was taken by the maximum thermometer without the special precautions used on the above occasions, may be taken as genuine. It may also be inferred, from numerous observations made, that it is likely that the high temperatures were always rapidly evanescent.

I have dwelt thus long on this case, as it is perhaps the only one that I am fully justified in considering as able to stand *alone* as establishing the facts alleged. For, though in some of the others the evidence is very strong, I have not been able to investigate and observe them personally to such a rigorous extent as the nature of the inquiries would claim. But, if genuine, as I believe them to be from the evidence in my possession, they are valuable as illustrations.

CASE II.—This case was kindly supplied to me by Dr. Greig Smith, of the Bristol Royal Infirmary, and was published by his permission in the *Lancet* of March 15th, 1879, to which I must refer for particulars and good evidence of precaution in the establishment of the facts. The temperature frequently rose to 108 deg., with no evidence of organic disease. The girl, aged 19, was very emotional, and suffered from abdominal pain, "ovarian" tenderness, and at first vomiting. She had "hot flushes" at the time of the high temperatures, and looked flushed. On one occasion, Dr. Smith found a temperature of 99 deg. ten minutes after one of 104 deg.

CASE III.—This was published by Dr. Ormerod in the *Lancet* of November 9th, 1878. A woman aged 32, among many other high temperatures, had one of 115.8 deg. There were great abdominal pain, and marked excitability, but no urgent symptoms; and no organic disease was discovered.

CASE IV.—Dr. Cheadle reports to me a case of a girl aged 18, in St. Mary's Hospital, convalescent from enteric fever, where a series of rapidly fluctuating temperatures occurred, beginning about one month after the fever had seemingly disappeared. The highest was 111 deg. One of 108.6 deg. was taken with every precaution by Dr. Cheadle himself.

CASE V.—This case was published by Mr. J. Cæsar in the *Lancet* of June 14th, 1879. Among other high temperatures, 113 deg. was taken. The girl, aged 15, was unconscious during the period in which the high temperatures occurred. She had been suffering from enteric fever, complicated by double pneumonia; but made a rapid and complete recovery. Mr. Cæsar himself made the observations of temperature.

CASE VI.—A man aged 34 was admitted into Westminster Hospital under my colleague Mr. Davy, with synovitis of the knee. After the actual cautery, he suffered great pain. His temperature on one occasion was found to be 112 deg.; on another, 110.4 deg. was noted, falling in twenty-five minutes to 100 deg. More than one thermometer were used; two having been tested and found to be nearly accurate by Dr. Dupré. There was no constitutional disturbance other than a feeling of great heat, and no evidence of organic disease or pus-collection. Great pain was always coincident with the high temperature.

CASE VII.—This case was of a woman aged 42, who was admitted into the London Hospital suffering great pain in the stump of a thigh, injured after amputation. She had several temperatures over 108 deg. On one occasion, 111.2 deg.; on another, 112 deg. There was profuse sweating. On incision into the stump, no pus was found; but the pain was relieved after the removal of some diseased bone, and the high temperatures occurred no more. There was evidence in this case that the high temperature did not probably last *more* than an hour; but no observation was made as to how *short* a time they may have continued. I am indebted for the notes of this case to Mr. J. Andrew Clark, the house-surgeon, from whose account I have condensed the above notice.

CASE VIII.—I mention this case as being probably valuable on account of several very high temperatures having been noted in the *rectum*. On one occasion, two thermometers being placed simultaneously in the rectum and axilla, registering respectively up to 115 and 117 deg., both indices were driven up to the top of the stem. Though I have notes of this case, which occurred abroad, and good evidence of its accuracy, I have not yet received permission to publish the particulars. But in general I may say that it corresponds with most of the other cases, both as regards recovery and the presence of great pain.*

REMARKS.—In analysing these cases from the facts in my possession, over and above what I have space to quote here, the following results appear.

1. In most, *pain* is a very prominent symptom.
2. The female sex is probably more prone to show these phenomena than the male. Seven of the above cases were females. The man,

moreover (Case VI), was described to me by the house-surgeon as very emotional.

3. There is no serious importance in the temporary rise of temperature *per se*. All of these cases ended in recovery; in some, notably in Case I—where even *pain* was not a very prominent symptom—there was generally no concomitant complaint of any severity, with the exception of pain at the time of the high temperatures.

It has been objected to these cases, that most of the high temperatures have been taken in the axilla; and it has been said that this fact (1) renders fraud a more likely hypothesis than if the thermometer had been placed in the mouth or rectum, and (2) may mean merely a local temperature.

With regard to fraud, Case I shows that some high temperatures occurred in the mouth, and that others, though taken in the axilla, were verified by precautions which may be said to have excluded fraud. The objection that the temperature was merely "*local*", whatever this may mean, applies equally to all clinical observations of temperature. It is assumed, when a temperature of (*e.g.*) 104 deg. is taken in the axilla in a case of fever, that this is the temperature of the body. The difference between a temperature taken in the axilla and one taken within a mucous orifice, such as the rectum, depends chiefly on minor and accidental points, as evaporation, etc., and is simply a matter of a degree or two. An observation of a high temperature taken simultaneously in two axillæ is, as far as our present knowledge goes, as valuable an evidence that the heat is not merely local, as if one of the thermometers had been placed in the rectum, or on any other mucous surface.

It is for the physiologist to discuss the question as to whether or not a surface-temperature, taken with proper precautions either on the skin or the mucous membrane (allowing for accidental modifications), represents approximately in all cases the temperature of the whole circulating blood. At present, certainly, clinical thermometry is based on the assumption that it does.

And further, should future observation confirm the facts I have alleged, we must look to physiology to give us some explanation of the rapid fall of temperature which seems to have taken place at least in some of the cases. In some cases, as my notes show, there was considerable sweating with the high temperatures; in others, shortness of breath. In Case No. 1, in which alone I have any observations on the quantity of urea eliminated, there appears, from one series of observations of the urine carried on every two hours, that there was no concomitant increase of urea with the higher temperatures. From the want of evidence of increased oxidation occurring with these abnormally high temperatures, further observation is needed, in similar cases, of the products and state of the eliminatory organs; and it is important to have additional evidence as to the length of time the high temperatures last. This is more difficult to obtain than would appear at first sight.

Cases of this nature would seem, as far as my very limited observation goes, to hint at some "nervous" origin. In the absence of any evidence of an accepted cause of increased body-temperature, and of other symptoms that we might in such a case expect, we find, in most of the instances I have quoted, some amount of emotional excitement, and in nearly all *great pain*. I will enlarge no further on this, as the suggestion of an ultimate nervous origin for any symptom is after all at present almost a cloak for ignorance, and an illustration of the method *obscurum per obscurius*.

To refer to the sympathetic supply to the blood-vessels, or to a "heat-regulating centre", in this context, would be premature. I am therefore content to bring the facts alleged in this paper, with such evidence for them as I have been able to give, before the notice of others, in the hope that further clinical observation will decide in one way or the other as to their genuineness; and, in the event of this being confirmed, that physiology may throw some light on their explanation.

AMPUTATION AT THE HIP: USE OF DAVY'S LEVER.

By R. CLEMENT LUCAS, B.S.Lond., F.R.C.S.,
Assistant-Surgeon to Guy's Hospital, and to the Evelina Hospital for Sick Children.

As it is by the accumulated experience of many surgeons, rather than by the extended practice of one, that an instrument is accepted or condemned, I think it right to state the result of my trial of Mr. Davy's lever for the compression of the common iliac artery during amputation at the hip-joint. The patient was a boy, aged ten years, who had suffered from hip-joint disease for six years. When he was admitted into the Evelina Hospital, there were shortening of the limb, eversion, and a gluteal abscess. I excised the head of the femur on August 4th, but the patient showed little recuperative power; he suffered from profuse sup-

* Since this paper was written Dr. Roddick of Montreal has kindly informed me that he has no doubt as to the accuracy of the observations as to temperature. The case was admitted for some uterine trouble, but afterwards symptoms of pyo-nephrosis occurred. The high temperatures happened nearly always when the urine had been clear for a day or two. They were very frequent.

puration and a high temperature; he grew gradually thinner; and it became evident, after a time, that a pelvic abscess had formed. The rapid emaciation and pallor left no doubt as to his approaching end. I therefore determined, on November 15th, to amputate.

Before placing the patient on the operating table, an experimental trial of the lever was made, under chloroform, on a convalescent patient. We satisfied ourselves in this way that, with very slight pressure, the femoral artery and its branches could be completely controlled.

The patient was prepared for operation as follows. His body and extremities (except the one to be amputated) were wrapped in cotton-wool, to keep up the temperature and favour circulation in these parts; Esmarch's bandage was then tightly applied from the foot to the middle of the thigh, to squeeze all the blood out of the limb; and ether was administered in preference to chloroform, as it has a stimulating rather than depressing effect upon the heart's action. Dr. H. Davy, the house-surgeon, passed the lever between eight and nine inches into the bowel, and raised the handle till pulsation could no longer be felt in the femoral artery. I then cut an antero-external flap, commencing below the pubic spine, and ending in the old wound made for excision. The flap was dissected up until the femoral artery was exposed, and this was then seized by two pairs of forceps, divided between them, and twisted. The femoral vein was treated in the same way. Another light cut exposed the profunda artery, which was secured like the femoral before division, and afterwards twisted. The soft parts were then divided to the level of the bone. At this time, a little spurt came from a branch of the external circumflex, but raising the handle of the lever appeared to control it. The amputation was completed by cutting a postero-internal flap. One or two vessels bled in the posterior flap uncontrolled by the lever, and from this I concluded that the lever was pressing at or below the bifurcation of the common iliac. My opinion of the lever is that, in action, it is efficient and preferable to that of other instruments at present employed in similar cases. At the same time, seeing how important it is in these amputations to save every drop of blood, I would strongly commend the proceeding of the dissecting-up of the anterior flap, and securing the vessels with forceps before their division. The surgeon thus, whatever tourniquet may be employed, renders himself almost independent of mechanical aid, and uses it only as an additional safeguard against loss of blood. Neither of the patients on whom the lever was tried suffered from diarrhoea or any abdominal symptom subsequent to its use. During the operation, the patient's pulse gave us no cause of anxiety; and since then (now a fortnight) his general condition has improved, although the discharge from the pelvic abscess and bed-sores remains profuse.

Before closing this note, I would like to insist on the extreme importance of keeping up the temperature, and of preserving every drop of blood during this amputation—details in operating which I have more fully discussed in the last volume of the *Guy's Hospital Reports*. Having by these means, and by the free use of stimulants during the first twelve hours, tided the patient over the danger from shock, there ought to be little further cause for anxiety, since torsion has eliminated all fear from secondary hæmorrhage, and antiseptic surgery has done much to exclude the possibility of death from septicæmia.

CLINICAL MEMORANDA.

THE PREVAILING EPIDEMIC OF MEASLES.

THE cases of measles which have come under my observation, in the epidemic now prevailing in the centre of West London, have presented certain unusual features. The experience of some other physicians corresponds, I believe, with mine; and I should be glad to inquire more widely whether these variations from the ordinary type mark generally the existing form. The peculiarities are these.

1. A previous attack of the disease has afforded no immunity from the present disorder. Children who have had measles before in the most typical form, and as lately as within the last twelve months, have suffered equally with those who have not had it before. Out of twelve cases of which I have knowledge, nine have had the disease previously, and eight of them within the year.

2. The symptoms of coryza have been unusually slight, the sneezing little, and in some cases absent; while the laryngeal catarrh and cough have been exceptionally severe. The latter especially has been a striking feature, being most violent and incessant, and, at the height of the disease, recurring so distressingly and constantly every few minutes as entirely to prevent sleep, and indeed rest of any kind, for a period of many hours.

3. Another symptom, unusually prominent in some cases, has been vomiting—coming on with the first fever, and continuing at intervals

until the eruption began to decline; the retching not being a result of the cough, but independent of it—an effect of the measles poison.

4. The eruption has been profuse; more raised and papular than usual, and largely confluent in patches on the face and limbs.

5. About forty-eight hours after the fever has commenced to decline with the subsidence of the eruption—i.e., on the fourth or fifth day after the first appearance of the eruption—severe earache has supervened, lasting several hours, and then passing away without discharge or other sign of otitis.

The temperature has ranged from 102° to 103.8°; the pulse 120 to 160; but in this there is nothing beyond what is seen in severe cases in ordinary epidemics. Leaving out of consideration for the present all but the first point, viz., the recurrence of the disease in the same individual a second time, the proportion of cases in which this has occurred is very remarkable. The question arises: Whether the first attack was really identical in nature with the second? Are these two distinct diseases, or forms of the disease (apart from Röheln), each of which confers immunity from a second attack of the same variety, while affording no protection against the other? W. B. CHEADLE, M.D.,

Physician to the Hospital for Sick Children.

RAPID PULSE.

IN recent numbers of the JOURNAL have appeared instances of "slow pulse". The following is an example of rapid pulse which has come under my observation. A young man aged 20, while intoxicated, received a scalp-wound across the vertex of the parietal bones in the middle line. Previously to this accident, he had been in perfect health. Subsequently, there were abscess and necrosis of bone, and, later on, all the symptoms of acute pyæmia. In two months, he recovered from all these conditions, and applied for medical relief, complaining only of general weakness as a result of his former illness. On examination, the patient was found perfectly convalescent, all his functions and organs being healthy. The cardiac dulness was normal; the heart's action was rapid, but regular; the sounds were clear and unaccompanied by any abnormal murmur. The pulse was weak, compressible, regular, and the number of its pulsations was as follows.

Date.	Pulse.	Date.	Pulse.
October 12	120	December 9	180
" 13	96	" Evening	240
" 14	100	" 10	196
" 16	116	" 11	176
" 17	120	" Evening	180
" 18	124	" 12	180
" 19	128	" Evening	194
" 21	120	" 13	190
" 24	118	" Evening	162
" 26	120	" 14	160
" 28	126	" Evening	190
" 30	140	" 16	160
November 1	120	" 17	160
" 3	120	" Afternoon	136
" 6	120	" Evening	120
" 7	144	" 18	150
" 8	144	" Evening	180
" 9	144	" 19	194
" 11	128	" 20	200
" 12	136	" 21	140
" 13	142	" 22	174
" 16	144	" 23	160
" 17	140	" 24	172
" 18	132	" 25	196
" 19	124	" 26	160
" 20	120	" 27	150
" 22	140	" 28	154
" 24	120	" 29	160
December 6	180	" 30	168
" 8	162		

During the entire month of January, the pulse was counted daily, and varied from 120 to 200 beats per minute. The sphygmographic tracing was minute, but presented the general characters of a normal tracing. During these four months, the patient was to all appearances quite well in every respect, and he declared himself to be in excellent health and spirits and able to resume his work. I met him accidentally in the street some months afterwards, carrying on his trade as a baker. He asserted that he had never been in better health. His pulse, on being counted, was 160 per minute.

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Assistant-Physician to the Westminster Hospital.

ON Tuesday, December 9th, the officers of the Army Medical Department stationed at Portsmouth entertained Surgeon-General Best, lately Principal Medical Officer there, at dinner at the Naval Club. The farewell banquet was a very cordial affair, as Dr. Best had won golden opinions among his officers by his kindness and urbanity of disposition.