is coloured with the deepest red, and ranges from below 17 to 20 deaths to every 10,000 females living during the decade 1851-60. With the aid of these gradations of colour, we shall be enabled to compare the maps showing the proportional rate of mortality from heart-disease with that of phthisis in the fifty-three counties.

Before, however, entering upon the second process of analysis, I will recapitulate some of the facts already mentioned, and add a few others which will be necessary in the sequel.

1. More than a quarter of a million females died from phthisis during the decade 1851-60.
2. The divisional distribution of heart-disease and phthisis was shown to be the reverse of each other.
3. The most exposed divisions have the highest mortality in phthisis and the lowest in heart-disease.
4. The most sheltered divisions have the lowest mortality in phthisis and the highest in heart-disease.
5. London (I) and the West Midland Division (VI) have the lowest female mortality, being each only 24.9 to every 10,000 living.
6. The division having the highest mortality is the North-Western Counties (VIII). This fact is coincident socially with the engagement of the population in cotton and other factories, and climatically with exposure to the direct and powerful influence of the north-westerly winds. The maps of heart-disease and cancer show an exceedingly low mortality from these causes in this division.
7. In heart-disease and cancer, we see that Wales (XI) has a remarkably low mortality, whereas in that of phthisis a high mortality is depicted. It ranks next to that of the north-western division; its female death-rate from phthisis being 32.0, or 4.3 to every 10,000 living above the average.

DIAGNOSIS BY EXAMINATION OF URINE IN OBSCURE FORMS OF URINARY DISEASE.

By SIR HENRY THOMPSON,

Surgeon and Professor of Clinical Surgery to University College Hospital.

I WISH to call attention to a mode of obtaining a diagnosis in some rare and doubtful cases of disease of the urinary organs, when all other modes have failed. I described it first in my clinical lectures at University College Hospital, some years ago, as a means of observation which had never to my knowledge been recommended or practised, and which I had adopted systematically, and which I have since found of extreme value in some exceptional instances. Thus, for example, we not seldom meet with a patient whose urine, usually containing a small or varying quantity of blood and pus, presents more or less albumen, but relative to the precise origin of which it is desirable to be certain. Some of the deposit produced is of course due to the admixture named; and while we may be right in believing the quantity to be equal only to the blood and pus in the urine, we cannot be certain whether some of it may not be due to renal changes. In such a case, the other signs, and the symptoms also, are often insufficient to enable us to say whether they are due solely to vesical disease or to pyelitis, or whether there may be some renal affection, not to say constitutional albuminuria, complicating the conditions named. On the other hand, the symptoms may apparently indicate only an affection of the bladder; there may be no symptom of disease involving any higher portion of the urinary tract; nevertheless, the experiment to be described may prove the kidneys to be almost solely the seat of the malady. Few cases present more of obscurity than some of those with the characters thus briefly indicated.

The proceeding may be described as follows. A No. 6 or 7 flexible catheter is introduced into the bladder while the patient is in the upright position, and the urine drawn off is placed in a vessel apart. By means of an elastic gum-bottle containing a few ounces of warm water, the bladder is washed out two or three times, with about an ounce or two at a time, until the outflowing fluid is perceived to be quite clear. The catheter being left *in situ*, fresh urine from the kidney, untainted by any admixture, will now pass by drops into a test-tube placed to receive it; and a specimen, therefore, of true renal secretion, unqualified by vesical products, will be furnished in about five minutes, sufficing for a chemical analysis and useful to a certain extent for microscopical observation. By this simple process I have been enabled to solve the question of disease of the kidneys in some cases in which hitherto doubt as to their implication existed; and have often had the satisfaction of demonstrating that the secretion obtained direct from the organs was absolutely free from any sign of disease, where they had previously been suspected to be the seat of grave mischief. But there is one source of

fallacy on applying this test which is occasionally to be met with. An illustration of it exists at this moment in the case of a man now in my ward at University College Hospital. If the bladder easily bled with instrumental contact, as occasionally happens, the process may produce a slight admixture of blood in the urine so obtained, barely enough to tint it, but sufficient perhaps to occasion a considerable deposit to heat and nitric acid. It should never be forgotten, in estimating these products, that, for equal quantities of blood and pus, the former produces a much more bulky deposit of albumen than the latter. Of course, then, this disposition to slight bleeding, as a result of the procedure, and any augmentation of albumen so caused, is of itself strong evidence of vesical rather than of renal disease. I should say that the occurrence just named is one of rare occurrence.

Wimpole Street, December 12th, 1870.

ON OBSCURE DISEASE OF THE CÆCUM.

By THOMAS KING CHAMBERS, M.D.,

Consulting Physician to St. Mary's Hospital; Honorary Physician to H.R.H. the Prince of Wales.

TUMEFACCTIONS, with dullness on percussion in the cæcal region, are usually referred either to organic tumours, to the forming of an abscess in the perityphlitic tissue, or to a collection of fæces. There is a fourth class of cases not included in any of these, and of much importance to distinguish from them; inasmuch as the treatment required is very different; yet they will be found by no means uncommon if the attention be directed that way. The patients are ordinarily such as, having previously had ague, or being resident in a somewhat paludal district, may be supposed to retain traces of the poison, and to have a malarial constitution in all diseases to which they may be subjected. The instances I have fallen in with have been residents either in the low flats of the eastern counties or in the Thames valley; where, in spite of cultivation, the old curse of marsh-miasm still tries to linger, and may be dug up in newly opened ground, or made active by accumulation when the free flow of air or water is obstructed. But it is not always easy to track the virus to its external source, and its manifestations in the human body are irregular and obscure.

The first hint of illness is usually a sudden pain in the lower part of the epigastrium, which sometimes causes vomiting by its intensity, but when less severe is not accompanied by nausea. The vomiting gives no relief. There is no tenderness on pressure. Then the pain transfers itself to the right iliac region, and some increase is felt on manipulating the part. Examination shows a rounded lump in that part of the abdomen, giving the impression of being about the size of a small orange, or from that up to double the diameter. Then the pain gradually abates. The swelling is dull on percussion on firm pressure, and is slightly moveable. There is no diarrhoea or constipation in patients who have taken no medicine to act on the bowels; but they are very apt to exhibit the latter condition from strong purgatives having been administered. In fact, these cases are often referred to accumulated fæces, and the copious stools elicited by copious drastics are shown as evidence—which they are not. Diarrhoea, however, whether natural or medicinal, certainly makes the patients worse, produces a great feeling of illness, brings back the colicky pain, and does not allow the swelling to diminish so soon as it otherwise would. I have known even such a childish dose as a teaspoonful of olive oil nightly to have an injurious effect. If not interfered with, the stools are solid and formed; and the more solid they are, the less ill a patient feels. The subsidence of the lump is gradual, and it may sometimes be detected by careful scrutiny several days after the bearer has ceased to be conscious of its existence.

Relapses, or, more properly speaking, recurrences of the disease are common. Slighter things will cause it each time. But yet, each recurrence is milder than the first, especially as respects the colic at the outset. This is just like ague.

As to the immediate cause, it is not always to be identified. In the case of a country gentleman, it was obviously the standing about with the thighs wet in cold weather, dragging a fish pond. In a builder, it was a somewhat similar exposure in his business. In a young laundress at St. Mary's Hospital, the illness seemed due to the heats and chills of a wash-house. A resident on the banks of the Thames accused a railway embankment, which has run through her garden, of having made the house unhealthy.

Towards explaining the pathology of these cases, morbid anatomy has contributed nothing but negatives. If I might be allowed to hazard a guess in the dearth of evidence, I would suggest that there is a specific congestion of the parietes of the cæcum, similar to that which takes place in the spleen in orthodox ague. I have no doubt that if it were

continued too long, or were too often repeated, permanent disorganisation might result, as happens to the spleen.

As to treatment, I have found a large hot poultice on the abdomen a relief during the painful period, but I do not know that it diminishes the tumefaction. An agreeable one is made of half and half linseed meal, and young laurel leaves chopped small, with a teaspoonful of chloroform added at the times of application and renewal. I have been disappointed with the effects of quinine. It is a good general tonic, but it does not in large doses cut the ailment short, as in the case of regular ague. Bark is apt to purge in large doses. Arsenic has given me more satisfaction, and I feel sure it is curative in these cases. When there is diarrhoea, opium checks it, and is not contra-indicated by the nature of the disease.

CASE WHERE A HALF-SOVEREIGN WAS IMPACTED IN THE LARYNX.

By HENRY SMITH, F.R.C.S.,
Assistant-Surgeon to King's College Hospital.

A TIPSY shoemaker, on the evening of Sunday, December 11th, placed a half-sovereign in his mouth; it at once disappeared, and he was seized with dyspnoea, which for a time was urgent. He was subsequently taken to the police-station, where he was locked up all night and half the following day. After the effects of his potations had gone off the man felt considerable pain in his throat, could not swallow, and breathed with difficulty. He applied to a hospital, and a probang was passed into his gullet, but nothing further was done, and the man returned home, remaining in great distress until Wednesday afternoon, when I saw him. He narrated his history to me as well as he could, and, from the fact of his not being able to speak above a whisper, as well as from nearly a total absence of air in his lungs, I had no doubt that the coin was in his larynx. I sent him into the hospital, but, as it was late and there was no urgent distress, I waited until next day before taking any steps to remove the foreign body. Sir William Fergusson saw the man with me, and agreed with me as to the presence of the coin in the larynx. Dr. George Johnson, who is well-skilled in the use of the laryngoscope, examined the patient with this instrument, and clearly showed to the bystanders that the coin was impacted in the larynx between the vocal chords, with its surfaces up and down, tail uppermost, almost completely filling up the inlet of the larynx, only a small space for air being left between the coin and swollen mucous membrane behind. (See Plate.)

Dr. Johnson thus made it clear that the coin was so closely impacted that it would be useless to attempt to dislodge it by placing the man head downwards; and with my concurrence he made very careful attempts to remove it with the laryngeal forceps, and repeatedly reached the coin and scratched its surface; but, from its position, it was found impossible to grasp its margin. I then made an opening in the crico-thyroid space, and passed a strong silver probe into the larynx from below, and, using considerable force, I pushed the coin out of its purse into the man's mouth, and he immediately ejected it.

The patient, who bore the manipulations of Dr. Johnson and the operations by myself with remarkable fortitude, was at once relieved. The opening was closed, and he so quickly recovered that he begged to be dismissed in less than a week.

Instances of foreign bodies in the windpipe are, I think, amongst the most interesting in surgery. In no condition of accident or disease can the value and power of the art of the surgeon be demonstrated more clearly; humanly speaking, the issues of life and death are in his hands, according as he acts with promptitude or otherwise. These cases have become even more interesting than they were since the application of the laryngoscope as a means of surgical diagnosis; for, if the foreign body be imbedded in the larynx, we can now not only demonstrate its

locality, but its exact position as well, as was illustrated in the case just narrated. A valuable guide is thus furnished to the surgeon, who can direct his operations according to the information thus afforded him. We could at once see that it would be useless to attempt the removal of the coin by inclining the body as in the well-known case of Mr. I. Brunel. Moreover, it was at once clear to me that I ought not to attempt to extract it through the wound, but to adopt the simple expedient of pushing it into the mouth from below. I must here record my thanks to Dr. Johnson for the great assistance which he rendered me in this interesting case.

BONE IMPACTED IN THE LARYNX: REMOVAL THROUGH AN OPENING IN THE TRACHEA.

By T. PRIDGIN TEALE, M.A., M.B.,
Surgeon to the Leeds Infirmary.

PHILIP MACBRIDE, aged 36, residing at Clifford, near York, was admitted into the Leeds Infirmary on September 30th, 1867, suffering from great difficulty in breathing. On the previous day, whilst drinking broth, he sucked into his mouth a thin plate of bone, which was carried into the fauces beyond his control, and drawn into the larynx. He was not immediately seized either with violent coughing or with difficulty in breathing. He made considerable efforts by coughing, tickling the throat, etc., to dislodge the offender, but without avail. Next day, he walked to the house of his medical man, Mr. Scatchard, who made further attempts to remove the bone; and, not succeeding, sent him over to Leeds. When I saw him, his breathing was somewhat croupy, and the bone could be felt by the finger to be firmly lodged in the larynx. Examined by the laryngoscope, the bone was seen to be a long thin piece, impacted between the thyroid cartilage in front and the arytenoid behind. Guided by the same instrument, I was able to seize the bone with long forceps; but, owing partly to the irritability of the muscles of the glottis and partly to the springiness of the long blades of the forceps, I was unable to move the bone from its firm position.

3 P.M.—As it seemed to be impossible to remove the bone, and the breathing was becoming more and more embarrassed, I performed laryngotomy. After the introduction of the tracheotomy-tube, further efforts were made to seize the bone with forceps, introduced through the mouth, but it was discovered by the aid of the laryngoscope that the bone had been pushed lower down into the larynx. A probe then passed into the wound struck against the lower edge of the bone, which was seized by dressing-forceps and dragged downwards. The tracheotomy-tube having been removed, two or three upper rings of the trachea were one by one divided, until the wound was large enough to allow the bone to escape. The bone proved to be generally flat and somewhat triangular, and two sharp angles had fixed it antero-posteriorly in the larynx; and the apex pointing downwards, wedge fashion, had facilitated its passage towards the trachea.

His progress was satisfactory. For two or three days there was slight bronchial irritation and congestion of the fauces; but the tube was removed on the second day, twenty-four hours after the operation. He left the hospital on the twenty-fourth day, with a voice perfectly restored, good breathing, and the wound all but healed. No injury to the larynx could be detected by laryngoscope.

The notes of this case were taken by Mr. Robert Atkinson.