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,

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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.,

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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