the anaesthetic after their operation the patients began to abreact their battle experiences. The psychiatrist on duty was called by her, and he continued the abreaction; and a day or two later these patients stated that they felt much less tense and anxious than before the operation. The remaining 10 patients showed no neurotic symptoms and had very stable personalities.

The age distribution and length of service were similar to those for the group admitted with neuroses, while the proportion of conscripts to volunteers was also comparable.

The degree of severity of a wound bears little or no relation to the development of a neurosis. Constitutional predisposition in the form of a positive family history, neurotic personality, or poor work record is the most important factor, while personal and domestic worry, severe battle stress, and length of service appear to be contributory factors.

It seems certain that a large proportion of wounded (in this series 28 out of 38=73%) suffer from undiagnosed anxiety or other neurotic symptoms, and it would seem important to question each battle casualty in base hospitals as to whether he suffers from battle dreams or other anxiety symptoms. In many cases the mild symptoms will clear up on giving sodium amytal, while the more severe cases should be referred to a psychiatrist.

Medical Memoranda

Uraemia and Heat-stroke: An Exercise in Diagnosis

The following case illustrates the importance of thinking again when signs and symptoms point to a certain diagnosis but the general clinical picture is not typical of, or even consistent with, the disease diagnosed. As my primary object in publishing it is to illustrate a diagnostic argument, I will describe the case as the problem presented itself and not as a clinical case sheet.

CASE HISTORY

A lad aged 20 complained of pain in the right groin, and frequent micturition with pain in the penis, after a route march in Italy. His M.O. found a tender swelling in the groin which was "reduced easily into the scrotum" and must have been the right testicle. He was admitted to the V.D. wing, where he continued to complain of dysuria and started vomiting. He had had two days' constipation. There was a rash on his body which was thought to be a sweat rash. He was transferred to the surgical division because strangulated hernia was suspected and there was no sign of venereal disease.

The surgeons found that there was a heavy albuminuria; the urine, in fact, solidified on boiling. There were also granular casts. He was somewhat vague mentally and lethargic; his tongue was dirty, and his temperature 101° F. He complained of weakness in the legs. The blood urea was estimated and found to be 108 mg. per 100 c.cm. The triumphant diagnosis of nephritis with uraemia was made, and the case was shown to the physicians as a *fait accompli*.

The physicians, however, had the bad taste to remark that the case conformed with no known type of nephritis. This was looked upon as a confession of ignorance, but it was argued that nephritis did not account for the frequent desire to pass small quantities of urine or for the pain on micturition. It could not be a case of terminal renal failure as the urine was highly coloured and well concentrated. If, on the other hand, it was acute nephritis severe enough to cause uraemia, why was there no haematuria, oedema, or hypertension? (The blood pressure was 105/90.)

A period of contemplation on renal and extrarenal causes of uraemia ended with the sudden revelation that it might be a case of heat-stroke. The patient was questioned again, and stated that the route march took place at the end of a "scheme" which had entailed several days' marching in the heat of the sun. On the final day he had been taking turns in carrying a heavy weapon in addition to his own equipment. Memory was refreshed by reference books, and it was established that the following symptoms may occur in heat-stroke: Mental changes, especially abnormal behaviour, leading in some cases to charges of insubordination; weakness and cramps; frequent micturition with pain in the penis; albuminuria; high blood urea; vomiting; loss of knee-jerks. The knee-jerks were tested and found to be absent. A qualitative test showed that chloride was virtually absent from the urine.

The forecast was made that with rest, fluids, and salt the patient would be cured in a few days. This was received with much scepticism, for in the minds of the surgeons albuminuria and uraemia could only mean Bright's disease. On the following day the blood urea was 88 mg., the mental condition had improved, the albumin was much less, and there were very few casts. Next day the albumin was less than 0.5 g. per litre. Two days later he was much brighter: no albumin, blood urea 48 mg. Five days later he was mentally normal and getting up: no albumin, blood urea 20 mg. per 100 c.cm., urinary chloride still somewhat diminished.

The mental state described in heat-stroke was nicely illustrated in this case. On the first day the patient described his urinary symptoms and the site of his pain in adequate but very vulgar terms, embarrassing in the presence of the ward sister. This was not considered to be diagnostic, as he came from the East End of Sheffield, but two days later gentility had returned and his nomenclature was completely revised.

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A Simple Test for the Detection of Bile Pigments in Urine

It has been shown that "adsorption colorimetry" may provide a convenient method for the estimation of coloured substances such as mepacrine (Yudkin, 1945a, 1945b). The principle of this technique is the adsorption of the coloured substance on to a measured amount of white adsorbent powder, the intensity of the colour produced being proportional to the amount of the substance. "Adsorption colorimetry" may also be used for a qualitative test, and the present communication describes a simple method for the detection of bile pigments in urine by this technique. It requires only one reagent.

THE TEST

Materials.—Test-tubes; silica gel powder (preferably sifted so as to pass 60 mesh but not 120 or 130); a scoop delivering 0.25 ml.

Method.—Take about 10 ml. of urine in a test-tube. Add about 0.25 ml. of silica gel powder by means of the scoop. Shake up the powder in the urine at intervals of 1 or 2 minutes by holding the top of the tube and swirling sharply once or twice. After ten minutes allow the tube to stand for a minute or two while the powder settles and then gently pour off the urine. Add a few millilitres of water, allow the powder to settle again, and gently pour off the water. A brown coloration of the silica gel indicates the presence of bile pigments. Mepacrine is also absorbed in these conditions, but its presence can be determined from the history of the patient and by the yellow colour developed on the adsorbent.

Sensitivity.—Some deeply coloured urines, containing no bile pigments, give a slight yellowish-brown colour. This is readily distinguished from the deeper and browner colour produced by even small quantities of bile pigment. By making dilutions of urine containing excreted bile pigments it was shown that the method of "adsorption colorimetry" will readily detect appreciably smaller quantities of pigment than those detected by the current "bedside" tests. It is, for example, about 15 times more sensitive than the iodine test and about 8 times more sensitive than Gmelin's (nitric acid) test. It compares favourably with the more elaborate laboratory tests, being, for example, only slightly less sensitive than the Fouchet test. With pure bilirubin dissolved in urine the approximate limits of sensitivity were as follows:

Test	Minimal Detectable Concentration, mg/100 ml.
Iodine	3
Gmelin's	1.5
Silica gel	0.2
Fouchet	0.1

COMMENT

An indication of the usefulness of the test in practice is given by the results of the analysis of 100 samples of urine. Of these, 58 samples were negative by all of the four tests mentioned; 42 were positive by both the adsorption and the Fouchet test; 8 were also positive by Gmelin's test; and only one was positive by the iodine test. All but one of the 42 positive samples were from patients with known hepatic damage. In these instances, therefore, the adsorption test was just as useful as the more elaborate Fouchet test and decidedly more useful than Gmelin's or the iodine test.

Silica gel powder, already sifted, may be obtained from Silica Gel, Ltd., Aldwych House, W.C.2.

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Major Rolfe M. Harvey (*Amer. J. Roentgen.*, 1944, **52**, 487) states that 18 of 500 consecutive cases of atypical pneumonia had fractured ribs, and in 9 of them the fractures were multiple. The occurrence of these fractures was not related to the severity of the pneumonia, and he believes they are caused by the severe, dry, irritating cough of this condition. He therefore suggests that, when excessive pain in the chest arises in the course of an atypical pneumonia and is difficult to account for by pleurisy, the possibility of a fractured rib should be borne in mind.