about to be carried out by more capable hands, through the kindness of Dr. Burrell at the Brompton Hospital, Dr. Goodechild at Blencathra Sanatorium, Dr. Peill at The Sanatorium, Bridge-of-Weir, Dr. Varrier Jones at Papworth, Dr. Dickinson at Newcastle, and possibly also in Lancashire.

A CASE OF AORTIC STENOSIS.

BY

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BOLTON.

THE patient whose case is here recorded was a married woman, aged 53; she had had one child, which died in infancy. She gave a history of being a normal child till

Pulsus alternans, August 7th, 1929.

Auricular fibrillation, August 8th, 1929.

Anachrotic and coupling of beats, August 16th, 1929.

she was 7 years of age, when she had a slow fever with extreme weakness and purpura; she was confined to bed for many weeks, and she never completely recovered her strength, though her general health was good and no medical attention was required till she was about 35 years of age, when increasing shortness of breath compelled her to seek advice. She was then told that she had a very loud murmur, was advised to rest and not in any way to exert herself or hurry—that there was no danger in her

condition provided she avoided strain. The doctor kept her under observation till he died.

She first consulted me in 1926, complaining of breathlessness, dyspepsia, and insomnia. The pulse was 100, with occasional intermission. The area of cardiac dullness extended 5 inches to the left and 2 inches to the right of the mid-sternal line; the apex beat was heaving and well outside the nipple line. A loud aortic systolic with thrill and double mitral murmurs were present.

The dyspepsia and insomnia were relieved by bismuth, magnesia, and bromides. Calcium seemed to relieve the breathlessness, and she continued to take tablets of calcium lactate, 5 grains, daily for about three years, as when she discontinued them she always felt worse.

On June 10th, 1929, the pulse was 84, and there was an increase in the frequency of intermission. She complained of breathlessness, a done feeling in the abdomen, and loss of appetite. The liver was enlarged 2 inches. Digitalis, sp. aether. sulph. co., and tr. card. co. relieved the distress and she went to the seaside for rest and change of air. At the end of a week she returned home, much worse, with pleural effusions reaching symmetrically to the angles of the scapulae, and went to bed for complete rest. She became orthopnoeic; the temperature was raised intermittently to about 100°. The pulse was anachrotic with intermissions—partial heart-block. Pulsus alternans and then auricular fibrillation developed, as shown in the tracings. There was coupling of the beats after digitalis in small doses, but after fibrillating for one week the pulse dropped from 130 to 80. The blood pressure was 140 systolic and 90 diastolic.

On August 8th there was evidently infarction of the right lung, as effusion increased on that side, and blood was found mixed with the fluid when 30 oz. were removed, giving some relief to the dyspnoea. The urine also contained blood at about that time.

Death occurred from cardiac failure on August 22nd, and, though a private patient, I was able to obtain the heart for examination.

The heart weighed 17 oz. The aortic valves were calcified and admitted a finger-tip. Ulceration and vegetations were present on the cusps. The mitral ring admitted two fingers; the valves were thickened but not deformed; there was a deposit of calcium at the base of the anterior curtain. The extent of calcification is shown in the radiogram.

In this case evidently a rheumatic infection in childhood had caused changes in the valves—especially the aortic—which steadily progressed during forty-six years to calcification, and ended in ulcerative endocarditis with infarction of lung and kidneys.

One is in doubt as to the advisability of administering calcium in such cases. The association of auricular fibrillation with infective endocarditis is said to be rare, and is worthy of note.

VALUE OF THE BROMINE TEST FOR DIAGNOSIS OF PREGNANCY.

BY

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In the *British Medical Journal* of November 2nd, 1929 (p. 829), C. I. B. Voge described a new test for pregnancy. The test, which is simple and inexpensive, can be carried out by any practitioner and an immediate result obtained. Voge correlated his findings with those of the Zondek-Aschheim test and found a very close relation between the two. The drawback to the general use of the Zondek-Aschheim test is that it is expensive and requires a laboratory with a supply of immature female mice.

The reaction consists in the detection of the presence in the urine of compounds of the β -iminazolyl type by means of bromine water. Bromine water of ordinary laboratory strength (2 per cent.) is used and diluted with twice its volume of tap water; 1 c.cm. of this solution is added to 2.5 c.cm. of urine in a test tube and the mixture is brought to boiling point. A positive reaction is indicated by the presence of a pink or pinkish-brown coloration, which rapidly fades. In a negative reaction the original yellow colour remains. The reaction of the urine requires to be observed because in acid urine the coloration of the positive test is pinkish-brown, while in alkaline urine it is pink.

Application and Results.

We have carried out the test on 380 patients at the Obstetric Department, University College Hospital. The test was done on fresh urine specimens, and the results are recorded in the following table:

Duration of Pregnancy.	Positive.	Negative.	No. of Cases.	Percentage of Error.
<i>Ante-natal Cases:</i>				
Up to 12 weeks	6	1	7	14.2
13-16 " " " " " "	9*	2	11	18.7
17-20 " " " " " "	26	8	34	23.5
21-24 " " " " " "	19	11	30	36.6
25-28 " " " " " "	44	20	64	31.2
29-32 " " " " " "	34	6	40	15
33-36 " " " " " "	12	5	17	29.4
37-term " " " " " "	21	5	26	19.2
Total ante-natal cases...	171	58	229	25.7
<i>Puerperal Cases:</i>				
1st-5th day of puerperium ...	24	11	35	
6th-12th " " " " " "	17	23	40	
Gynaecological Cases	11	66	76	13.1

* One case of hydatidiform mole is included in this group.

It is apparent that the test is not pathognomonic of pregnancy. The error of 25.7 per cent. among the ante-natal cases makes the test of little, if any, value. The urine was pale in colour and of low specific gravity (1002-1004) in a number of the pregnant cases with negative bromine test. This may mean that the urine was too dilute to give a positive result. The test was positive in two cases where the foetus was known to have died twenty-four to forty-eight hours before the test was carried out. The positive result in the case of hydatidiform mole agrees with the theory that the test is dependent on a hormone formed by active placenta. Finally, the error of 13.1 per cent. in the non-pregnant group makes the test valueless in the diagnosis of pregnancy. The ten positive non-pregnant cases were: fibroid 1, retroverted non-pregnant uterus 1, cervicitis 2, prolapse 1, chronic pelvic peritonitis 1, menorrhagia 1, right-sided pain 1, and chronic pyelitis 2.

Conclusion.

It is clear that the bromine test is not pathognomonic of pregnancy, although the frequency with which a positive result is obtained is interesting and suggestive.

I am indebted to Professor F. J. Browne, director of the obstetric unit, University College Hospital, for permission to publish these results.

THE FAMILY INCIDENCE OF JUVENILE RHEUMATISM.

BY

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AND

MARY ALLAN, M.A.

Information has been collected from the parents of 400 of the rheumatic children that have been nursed at Queen Mary's Hospital, Carshalton, relating to the incidence of rheumatic manifestations in their families. The knowledge so obtained has been briefly summarized in the three following tables.

TABLE I.

Total number of families investigated	400
Total number of children in these families	2,156
Total number of rheumatic children in these families	540

TABLE II.—Showing the Composition of the 400 Families, and the Number of Rheumatic Children in them.

Families with 1 child	19; rheumatic children ...	19
" " 2 children	51; " " " "	56
" " 3 " " " " " "	70; " " " "	84
" " 4 " " " " " "	41; " " " "	59
" " 5 " " " " " "	46; " " " "	66
" " 6 " " " " " "	47; " " " "	67
" " 7 " " " " " "	32; " " " "	48
" " 8 " " " " " "	28; " " " "	38
" " 9 " " " " " "	19; " " " "	32
" " 10 " " " " " "	18; " " " "	27
" over 10 " " " " " "	29; " " " "	44
Total	400	Total 540

TABLE III.—Showing the Number of Parents with a History of Juvenile Rheumatism.

Both parents	6 cases = 1.5 %
Father (but not mother)	49 " = 12.25 %
Mother (but not father)	67 " = 16.75 %
Neither parent	278 " = 69.5 %
No family history of juvenile rheumatism	171 " = 42.75 %

In some cases it has been rather difficult to assess the value of the histories given by the parents about themselves, and still more so about their more distant relatives, but the information concerning the patients' brothers and sisters should be fairly reliable. The term "rheumatism," as commonly used, denotes many different pathological conditions, and embraces rheumatoid arthritis and even osteo-arthritis, fibrositis, myositis, myalgia, and other more ill-defined maladies, so that the answers to questions are often difficult to interpret. It is possible, of course, that in a certain number of instances adults may develop a disease closely analogous to acute or juvenile rheumatism, but in the great majority of cases they suffer from the rheumatoid diseases that are distinctly different, although there may be certain etiological factors in common.

For the purposes of this investigation the chronic rheumatic conditions met with among the middle-aged and more elderly have been disregarded, and special stress has been laid on a history of acute rheumatism, rheumatic fever, chorea, or heart disease, or some combination of these ills, making their first appearance in the parents before the age of 25. In a certain number of instances a rather arbitrary decision as to the nature of the disease has had to be made from the evidence available.

It is interesting to note that in not one of the large families—those with six children or more—was there a majority of rheumatic children; in many instances only one member of the family shows evidence of the disease. It is of course possible that a more exhaustive inquiry, made only after the entire family had passed the age of 25, would show an increased number of rheumatic members; but the present rather limited inquiry seems to indicate that very few of the brothers and sisters of the rheumatic patients develop the disease. This is surprising, since they must live under similar environmental conditions, and in all probability will get very much the same amount of maternal care and home comfort, and the same diet, while they are exposed to the same risk of infection and possess the same hereditary predispositions.

In our series there are eight pairs of twins, and in not a single instance have both twins developed recognizable manifestations of rheumatism. A rather striking point is that in only six families do both father and mother give a history of juvenile rheumatism, and in only a comparatively small number of instances is there a history of rheumatism among both the father's and mother's relatives, a point of more significance when the size of many of their families is considered.

There is, however, slight evidence in favour of the view that juvenile rheumatism occurs more frequently in certain families than in others. Excluding the children who have been patients at Carshalton, the families investigated comprised 1,756 children. Probably less, and certainly not more, than 2 per cent. of children develop rheumatism, so that if those other children were absolutely comparable with the rest of the child population, we would expect to find rather less than 35 cases of rheumatism among them, while, in fact, we find 140 cases.

We wish to thank Dr. Gordon Pugh, medical superintendent of Queen Mary's Hospital, Carshalton, for permission to publish these notes.