8. The commonest antecedent disease is rheumatic fever. Rheumatic fever or chorea was found in 39 per cent. of the total number questioned, while 19 per cent. of the total gave a history of no previous illness. Graves's disease very definitely leads to fibrillation.

9. Primary myocardial involvement was found in as many cases as were associated with pure mitral stenosis. The other conditions in the order of their frequency were mitral regurgitation, both mitral and aortic disease, and lastly, aortic disease alone.

10. Fibrillation of the auricles can continue until the auricles are completely exhausted and become practically a passive chamber. The contractions may then come on only occasionally and be very slight, but impulses will still be transmitted to the ventricles.

11. There is no predisposition in either sex towards fibrillation.

12. As the pulse-rate usually does not give the ventricular rate of contraction, it is necessary in all cases of auricular fibrillation to count the apex-rate as well.

13. A murmur presystolic in time can be heard in some cases of auricular fibrillation associated with mitral stenosis, but this is usually due to a diastolic murmur running into the following systole when the rest period is short.

14. 25 per cent. of all patients admitted into the wards of the National Hospital for Diseases of the Heart have auricular fibrillation.

I have to thank Dr. J. Strickland Goodall for his invaluable help and kind interest in the preparation of this paper, and also Drs. R. O. Moon, S. Russell Wells, P. Hamill, and F. Price for permission to use the cases admitted under them.

PERCENTAGE AND FRACTIONAL DILUTIONS.

By B. BLACKLOCK, M.D. EDIN.

(From the Liverpool School of Tropical Medicine.)

IN THE LANCET of Jan. 29th, p. 223, Dr. William Fletcher gives formulæ for preparing percentages of fluids and for fractional dilutions. Professor J. W. W. Stephens and Dr. S. R. Christophers gave 12 years ago¹ a simple formula for obtaining percentage dilutions. It shows the amount of diluting fluid which it is necessary to add to 1 volume of fluid of percentage x in order to reduce that volume to the desired percentage y . The formula is $\frac{x}{y} - 1$; where x represents the original percentage and y the desired percentage. Thus, to dilute a solution from 20 per cent. to 5 per cent. add to each volume of solution $\frac{20}{5} - 1 = 3$ of the diluting fluid.

The following formula can be used where it is necessary to prepare specified volumes of lower percentage or higher dilution from higher percentages and lower dilutions respectively.

Percentage dilution.—To prepare a specified volume z of a y per cent. solution from an x per cent. solution, take of the latter $\frac{z \times y}{x}$ volume and make up to z volume with diluting fluid.

Example.—To obtain 12 c.cm. of a 24 per cent. solution from an 80 per cent. solution, take of the latter $\frac{12 \times 24}{80} = 3.6$ c.cm., and make up to 12 c.cm. with diluting fluid.

Fractional dilution.—To prepare a specified volume z of a $\frac{1}{y}$ dilution from a $\frac{1}{x}$ dilution, take of the latter $\frac{z \times x}{y}$ volume and make up to z volume with diluting fluid.

Example.—To obtain 60 minims of a $\frac{1}{100}$ dilution from a $\frac{1}{10}$ dilution, take of the latter $\frac{60 \times 10}{100} = 6$ minims, and make up to 60 minims with diluting fluid.

¹ Stephens and Christophers, 1908: Practical Study of Malaria and Blood Parasites, p. 441.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON

NON-INFECTIVE THROMBOSIS OF PELVIC AND ABDOMINAL VEINS.

By R. J. MORRIS, C.B.E., M.D. DURH., M.R.C.P. LOND.

INTRAVASCULAR clotting (thrombosis) may occur under imperfectly understood conditions; this is particularly true of non-infective thrombosis. The following case is illustrative; the cause is obscure, the termination unusual, and the difficulty of diagnosis from the initial symptoms is apparent.

M. D., aged 59, weight 15 st. 2 lb., height 5 ft. 11 in. Always had good health; no venereal disease; led an active athletic life; wore a double inguinal truss since April, 1918. No serious illness up to August, 1918, when he had an operation for appendicitis. Recovery appeared to be complete and satisfactory. He resumed military duty six weeks after the operation, and remained in excellent health up to April, 1919, when he had a severe attack of influenza affecting throat and chest. After four weeks he made a satisfactory recovery, and was in usual health up to Nov. 5th, 1919.

On the 5th he had much abdominal distension, slight abdominal pain, pain in area of prostate gland, congestion of penis and a very thin urine stream, took considerable time to empty the bladder; the congestion was less and the bladder was emptied with more ease in the recumbent position than when standing up. On the 6th, during a round of golf, he felt an acute pain over the left sacro-iliac joint. The next day the pain was more acute in the back, and he had a feeling of great abdominal distension, and some nausea and vomiting. On examination a fibrositic nodule over the left sacro-iliac joint, some tenderness over the gall-bladder, and slight oedema of right foot were found. Temperature normal, heart and lungs normal, pulse 68. No cause could be found for the distension and oedema, and there was no notable point in the history of the case except that he had been taking an aperient dose of Epsom salts in a glass of hot water before breakfast since the attack of influenza in April, 1919. No definite diagnosis could be made.

On the 8th he was seen by surgeon in consultation. Much abdominal distension. Dull continuous pain in abdomen; pain in back more acute; tenderness on pressure over the external abdominal rings. Examination per rectum revealed nothing. Condition remained the same up to the 11th, when in addition to the abdominal pain and distension acute pain commenced in right thigh, and pain over the femoral vessels in Scarpa's triangle. No tenderness on pressure. Oedema of both feet. On the 12th again seen in consultation. Abdominal pain and distension more marked. Temperature 99° F. Urine had trace of albumin, and on centrifugation a few red blood cells were seen. An elastic swelling found in right lumbar region. On the 14th left thigh became painful. Much tenderness in Scarpa's triangle. Temperature rose to 101° 2'. On the 16th right thigh and groin more painful, and much oedema of both legs from hips to toes. No oedema of back. Temperature varied from 101° 2' to 99° 6' during the day.

On the 17th examination per rectum revealed nothing further than some ballooning and emptiness. Urine loaded with urates. Fluid appeared in tunica vag. testis. Acute pain to right of umbilicus. Temperature 99°. Oedema of legs increased, much pain in legs, no tenderness. On the 20th he was seen by surgeon in consultation. He found "a definite 'pappy' or semi-elastic swelling in right lumbar region, felt bi-manually in neighbourhood of right kidney." Discussion ensued on the possibility of the condition being inflammatory (diverticulitis). Temperature varied between normal and 99° 8'. Castor oil emulsion by the mouth, and simple enemas were given daily; good result, and the tumour in lumbar region rapidly diminished in size.

By the 22nd condition improved: abdominal pain ceased; pains in both legs became less; oedema remained about the same and confined to legs; no oedema or swelling of back, and not higher than Poupart's ligament. Abdominal distension still continued. On the 23rd pains in legs and much abdominal distension, with pain and tenderness in right half of abdomen. Temperature 99° 8'. On the 24th gripping pain in abdomen caused restlessness, but less aching in legs, and less pain and tenderness in Scarpa's triangles. Temperature normal or subnormal. Blood examination: hæmoglobin, 92 per cent.; red cells, 5,200,000; white cells, 9100. Urine: minute trace of albumin, centrifugated deposit showed red blood cells in small numbers.

On the 29th consultation with the two surgeons. Operation was discussed and the decision came to not to operate. Discussion followed on the probability of the tumour being malignant and partially occluding the inferior vena cava. From this date up to Dec. 4th condition remained about the same, oedema tending to subside. Pain and tenderness remained along the femoral vessels in both legs, in Scarpa's triangles, and Hunter's canal. Weight was found to be increased by 2 lb., accounted for by the fluid in the tissues of the legs. On the 12th patient was partially dressed and walked a little in bedroom; much aching in both legs followed and oedema increased. Notwithstanding this, he got up each day for varying periods and steadily improved from this date.

On Jan. 7th, sixty-fourth day of the illness, consultation of physicians and surgeons. Tumour in right lumbar region much smaller and difficult to locate. Change of air and scene recommended. Arrived Hyères, France, Jan. 31st, 1920, and returned May 7th.