Thesis

For M. D.

Glasgow University

Subject: Endocarditis

By

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Endocarditis.

Is a subject of great interest and importance and has drawn forth, from the pen of some of our most famous Physicians, an abundance of interesting literature. There is no subject which has received more attention, and that with — abundantly good results, yet there is room for many more labourers to follow in the steps of such men as, Wilks, Bristowe, Simpson, Bramwell, & Gairdner. I take up the subject of Endocarditis to attempt a Thesis, not that I may beautify still more a field studded with such labourers as the above mentioned, but that I may set forth a few — interesting Cases, which have seemed to me Comparatively rare, so far as the Aetiology of this subject is concerned.

"Endocarditis is either Acute — simple, Acute-Ulcerative, or Chronic" (Byrom Bramwell). It is a difficult matter, at times, to draw the line, between Simple, Acute and

Chronic, yet these are the most suitable terms; Acute Simple, being any inflammation of the Endocardium, arising in the course of any acute disease; Chronic, either the result of acute, or occurring insidiously. Dr Osler of Philadelphia objects to — Ulcerative being separated from Acute, as ulceration does not necessarily occur in cases presenting symptoms of the so called Ulcerative Endocarditis.

My attention will be directed especially to the Chronic & Acute Ulcerative forms.

Chronic Endocarditis. A few years ago I was struck by the frequency with which cases of heart-symptoms and murmurs occurred in my practice, and on inquiry, found in most cases not the slightest history of Rheumatic fever, in some not even Chorea, Scarlet-fever, or any other of the usual exciting causes. I also came across a great many cases of what might be designated Cerebral Anaemia, and

combined with this, heart murmur, chiefly mitral, but a few also aortic; in some simply incompetence; in others Stenosis and incompetence combined. Again I was struck by the fact that I had not one case of Rheumatic fever in four years, Chorea one in four years, Epidemics of Scarlet-fever and Measles twice in four years, Diphtheritic sore throat common, Typhoid fever two cases, Phthisis and Tubercular Meningitis very Common.

Chronic Endocarditis is, to my mind, truly a disease to which degeneration from any cause predisposes, and more especially in Neurotic subjects, which I hope to make clear from Cases carefully examined and watched by me for years.

The post-mortem appearances of the heart of a subject of Chronic Endocarditis show the parts affected to be thickened by dense tissue, hardened and sometimes crumpled, with very often atheromatous patches, which become dilated into Aneurisms, especially

of the valves, sometimes vegetations, various in form and arrangement, This latter more especially when Chronic results from acute.

Chronic Endocarditis occurs most frequently, if not Congenital, on the left side, and almost always affects the valves; Mitral Incompetence most common, Mitral stenosis Incompetence next in frequency, then Aortic Incompetence and Aortic stenosis and Incompetence. Females more liable than males and between the ages of 15 — 25 years.

Congenital Endocarditis is another form, which I have no doubt is more common than supposed, but affects more frequently the right side, especially in any form capable of producing symptoms during life, and can be easily understood to be more liable to further inflammatory Changes, as pointed out by Dr Peacock, but as they often exist without producing any symptoms during life, it is impossible to estimate the frequency with which they occur.

There is yet another form of Cardiac derangement, to which different authorities accord different Causes, this form is what is usually referred to as the Anaemic Mud. Chlorotic murmur, heard over the Pulmonary area, said by Dr Belfour, to be due to Mitral regurgitation, by Dr Russell, to the Pulmonary artery. Again we have Mitral incompetence, in Cases of debility as after fevers &c.

Before proceeding any further let me sketch out the situation of our Village, the inhabitants, their mode of life &c. Until within a few years ago, the village of Gerbet was all huddled together, at the base of a semicircular hill, close to the waters edge; of late years it has been much improved. The front part presents fair houses, though some of them still old fashioned, having low ceilings, small rooms and windows. Behind this is arranged the older part of the village, consisting of small one storey

dwellings, many of them previously thatched, but now slated, with little more alteration, and although they might previously be level with the road, now they have got below the level, with, I suppose, attempted improvements at road making. The windows are fixed, the ceilings about seven feet high, many of them one Compartment. Until a year ago, there was no proper sewage, but here & there a cesspool, leading by a drain directly to the shore; being at low tide a great muddy stinking receptacle, which was so obnoxious as to be the means of stimulating the authorities to set about having a main sewer constructed, collecting the filth from the whole village, by branch sewers, and emptying itself about a mile and a half from the village, but unfortunately with very little descent; which was one of the great difficulties in its construction and efficiency, and

it yet remains to be proved, whether the project will turn out satisfactorily or not. For my part I fear we will be worse than before, for previously the filth was emptied into a great open basin, the harbour where it had more chance of free dilution by the atmosphere but now, as can easily be imagined, a mile and a half of main sewer of tiny clay pipes, stagnating as it may do from want of proper descent; and bursting from pressure as it has done already, is apt to throw back a most obnoxious gas right to the doors of these ill ventilated, overcrowded, one roomed houses, which had a chance of ventilation when the roofs were thatched, but none since slated; the walls and windows being in many cases air tight.

All along the hill side are good spring wells, many of which, being collected into a reservoir, serve the village with a pure and wholesome water.

The men and women, as a rule, are robust-looking, but I am told, that with a few exceptions, they have not the same fine strapping appearance their predecessors had.

Herring Fishing has been the staple industry from the earliest times, and for the past few years the fishermen have gone out to sea on Monday morning, not returning, as a rule, till Friday night; sleeping in their boats, four men to each boat, and, wonderful to say, though confined in such little dens or floricarties, stewing as they call it; and out in the cold night-air, when they have any intimation of herrings about; they do not seem to be any the worse, at least we seldom come across any of the acute diseases among them. The women, at home during all the week, are in their little houses continually, sometimes in groups, for they gossip a good

dial. The husbands being away, they do not bother about making a dinner, but lie from morning till night. Some do not even care about fish, probably from seeing so much of it. Like all fishing villages on the west coast, inter-marriage is common which I think is a great source of mischief. combined with bad housing &c. The Population of the village has increased rapidly, doubling itself in about thirty years, and to meet this, there has not been a relative increase in the housing: The present population is about 1600.

For some years past the herring fishing has been a great failure, some families not making more than from £10 to £15 per year, for three successive years; others again have been more successful.

Permit me now to lay before you some cases as they have come under my

notes, with symptoms, diagnosis, and treatment.

Case I. J. McP. 19 years, female, unmarried, at home. Father died from [illegible] Mother living, healthy, one brother and sister, both living. Pt was healthy up to the age of 17. having menstruated about 14. She never had Rheumatic pains, neither had any other member of the family; never had Scarlet-fever, Measles, Chorea, in fact she never had a complaint up to the age of 17, nor was there the slightest history of any strain. Here then is a young girl, living an apparently healthy life up to 17 years of age, menstruating at 14, and continuing quite regular for 2 years. After 17 she complained more or less of frontal headache, sleepy tired feeling, loss of appetite, and altogether a depressed feeling, with a little shortness of breath and palpitation, if startled, but no pain over the heart; irregular and

painful menstruation. About 2 years after, she, being 19 years old, came to consult me, chiefly about her head, stating that she suffered from severe, dull, constant, headache, all over the top of the head, sometimes frontal, with black specks floating before her eyes, loss of memory, a tired sore feeling in her limbs, (a sort of powerless feeling,) no appetite, frequent sickness after food, palpitation, especially on being startled, or walking up a hill, with shortness of breath on exertion; no pain over the heart; no cough more than a short dry ~~cough~~ one occasionally; tongue pale, furred, thick, especially in the morning, bowels constipated. General appearance did not strike one as marked in any way beyond dullness, appearance of skin and lips slightly paler than normal, no pulsations of superficial vessels, no venous hum in the neck,

Examination of Urine.

Quantitative estimation of Urea (Hypobromite process)

Average daily quantity = 1368 C.C.
Sp gr = 1013
June 4th Urea = 14.1 grams
" 6th " = 13.54 "
" 7th " = 16.63 "

} before treatment

Daily average quantity = 1750 C.C.
Sp gr = 1017
Oct. 10th Urea = 20.6 grams
" 14th = 21.3 "

} four months after treatment

slight- oedema of ankles at- bedtime, and puffing of the eyes in the morning

Physical Examination

Inspection of Precordial region shows nothing abnormal.

Palpation. Apex beat below the 5th interspace in line with the nipple. no tenderness. no thrill.

Percussion superficial dullness, right border corresponds with the middle of Sternum, left with a line a little to the left of Nipple line. Upper border, with lower border of 2nd rib.

Auscultation gives a distinct murmur over the base to left of Sternum, U. S in rythm, rather a soft- murmur. Second sound apparently perfectly normal, heart action accelerated.

Exam of Lungs respirations 23 per minute, sounds normal.

Pulse small firm 85 per minute. regular.

Reflexes Knee jerk exaggerated

Urine Average daily quantity diminished. 1366 C.C. Sp. gr 1013. High Coloured, sediment- brick dust-. reaction acid. Albumen moderate. no sugar.

This finishes the history and examination of Case I but it shall be considered again under Ulcerative Endocarditis.

The points of greatest importance to which I would direct attention in forming a diagnosis, always bearing in mind the nature of surroundings, &c, as previously described, are:-

1st The family history, free from Rheumatism or Heart affection, and the subject herself, apparently in perfect health up to 17 years.

2 The prominent head symptoms, and apparent anaemic or depressed state with suppression of menstruation.

3 The Subjective symptoms, referrible to the heart, and slight puffing of ankles & eyes.

4 Stomach symptoms

5 Physical examination revealing point of maximum intensity of murmur over pulmonary area & accelerated heart action, increased reflexes, respiration & pulse

6 Character of the Urine;

all of which I consider evidences of a syphilitic rel-

alone, and presenting some grave symptoms, many of which cannot be called functional, but, nevertheless, do leave some permanent effects of Mitral regurgitation.

Treatment: Gentle regulated exercise in the open air, tepid bathing with friction, tepid spray from an ordinary watering can over the Spine, nourishing foods. Tea prohibited.

Mediemal ℥ Liq Arsenic m iii
Potass Bromid gr v
℥ Aqua Pericklor m v
Ter in die.

℞ Pil Aloes ⊂ Myrrh 1. every night

Blister over praecordia & Epigastrium to allay irritation, Hot hip bathing, at time of expected menstruation.

Great improvement in three months. Gait became much livelier in appearance; headache all gone; palpitation and nervousness improved, respiration 18 per minute, pulse 80. Urine nearly normal, but murmur still persists, a soft blowing murmur, and was

three 18 months after.

Case VI S.P. 25 female. dressmaker, Father dead but Cannot give any definite Cause, one brother and one sister living. Menstruation commenced at 13 years of age. about three years after, she suffered much from diarrhoea and vomiting, which sometimes contained a little blood, loss of appetite, pain over the stomach; since then she has been more or less irregular in menstruation, and always slowly. She lived in lodgings, and chiefly subsisted on tea. At the age of 25, she consulted me, complaining, as in the former case, of severe dull headache, black specks before the eyes, partial loss of memory, palpitation, shortness of breath, sleepy heavy feeling, loss of appetite, frequent micturition, but quantity small, with burning or scalding feeling during the act; sickness + constipation, marked pitting of the ankles. No history of Rheumatic pains in herself or any of her friends, never had Scarlet fever or Chorea, had measles when very young, which, with the diarrhoea

and stomach symptoms, 10 years ago, are the only illnesses she had up to that date. Since then she has not felt so well.

Physical Examination General appearance somewhat sallow but fairly well nourished, apex beat not visible, no pulsating vessels.

Palpation gives slight tumor over apex, beating under the 6th rib, no tenderness.

Percussion superficial dullness to left nipple line on left border, and corresponds with right border of sternum on right side.

Auscultation distinct murmur, best heard over the apex, L.S in rythm, hearts action accelerated, though regular.

Lungs slight bronchial catarrh over the bases of both lungs, breathing a little hurried, 21 per minute.

Pulse small, firm, 75 per minute.

Reflexes Knee jerk exaggerated.

Urine small in quantity, average daily 1300cc, reaction acid, normal in colour and deposit, albumen slight Sp. gr. 1016.

This finishes the history and examination of Case II

the symptoms pointing to mitral regurgitation longer standing than in Case I, and more marked, as the very slight Bronchitis at dependent parts of lungs. the slightly enlarged, superficial dullness over heart, and B. S murmur, with point of maximum intensity over the apex, show.

Treatment as in Case I with the addition of Digitalis in ▽ minim doses. the use of a respirator twice daily, containing a drop or two of a mixture of Iodine & Creasote, with great improvement. When seen a twelve-month after, she was fairly well but continued the respirator at times, and other treatment as described.

Case III. M.J. female, at home. Parents living and healthy, one brother and three sisters all well. Mary was under treatment by me four years ago, complaining of, as in Case I, persistent dull headache, lassitude, palpitation, shortness of breath on exertion, sickness & loss of appetite. M.J was 14 years of age when she first menstruated, but was irregular,

Urine Examination

Quantitative Estimation of Urea

Before Treatment

Average daily quantity = 1240 C.C.

Sp gr = 1015

Sept 6th Urea = 13.78 grms

" 8th " = 12.32 "

Six Months after

Average daily = 1620 C.C.

Sp gr = 1020

Feb. 2nd Urea = 19.418 grms

Feb 3rd " = 18.72 "

painful and scanty. At the age of 19 she first consulted me for the first time, having suffered for a long time previously, similarly to Cases I and II. No history of Rheumatism or heart-affection in any member of her family, she herself only having had Whooping Cough, and that when very young.

Physical Examination General appearance in no way marked, no pulsating vessels, no Venous hum. no visible pulsation over Praecordia. Palpation + Percussion normal.

Auscultation. Murmur, V. S in Systole. point of maximum intensity to left of Sternum in 2nd interspace, with reduplication best heard at the apex, + therefore probably due to 1st Sound. This point is interesting as we afterwards find an A. S. murmur develops.

Pulse 80, small.

Lungs Breath sounds normal. respirations increased, 22 per minute.

Reflexes Knee jerk slightly exaggerated

Urine deposit-urates. average daily quantity 1240 C.C. 2% for 1015. Acid reaction, Albumen

moderate.

This case presents so far very little beyond what we have had in Cases I and II

Treatment followed exactly as in Case I, with improvement.

Two years after, I was sent for to see M. J. at home. On arrival I found her in bed, fairly well as regards general health, and had been keeping pretty well for these two years. On examination I found partial loss of sensation and motion in the left arm, with partial loss of sensation, but no loss of motor power, in the left leg. The only pain complained of was on the right side of the head.

Auscultation of heart reveals a murmur A.S.T.V.S in rythm and heard over the apex.

When first markedly exaggerated

Treatment ℥ Potass Bromid gr X
Liq Arsenic m iii
Tr Ferri Perchlor m V
Aqua ad dil.

Will rest in bed, friction to parts affected,

milk diet and soups. In about a week, sensation and motion returned gradually, and soon after Mary was able to be about; Continuing treatment for some weeks. About 12 months after a similar attack came on, but this time the right side was affected. Treatment as before with recovery.

Physical Examination revealed nothing new. No aphasia with either attack.

Case IV Mrs M'L. female, married. 35 years. Children five. This case is similar to Case III and occurred about a year ago. Previous history of family satisfactory, no Rheumatism or heart affection. Personal history, no trouble since Childhood, and then only measles and whooping cough. When summoned to see Mrs M'L., I found her sitting in bed, with slight difficulty of articulation in the way of expressing herself, slight paralysis of sensation and motion on the left side of the body, but no pain anywhere. Her general health had

always been very good, but of late years she became nervous and excitable, with severe palpitation and shortness of breath at times. Accordig to her own account, she never suffered from headache, noises in the head, or any other symptom of anaemia.

Physical Examination reveals nothing more than V. S. murmur, best heard over the base of the heart with accentuated second sound, accelerated action of the heart. Lungs & sounds normal. Pulse 88 respirations 23 per min. Blood pressure exaggerated. Urine albuminous.

Treatment same as in Case III with perfect recovery in about four weeks. Diagnosis in Cases II & IV. Mitral stenosis and regurgitation in Case III. mitral regurgitation simple in Case IV. Slight paralysis due to embolism carried in the blood current from valve in each case.

Case V. B. M'L. age 25 female, unmarried, housemaid. Family history good. father and mother living. one brother and sister, both living. Nothing in history of Rheumatism or Heart affection. Personal history Never had Rheumatic pains, Chorea, or any other trouble, but was always healthy, menstruating at 13 years, and continued regular until a few years ago, when she suffered a good deal from constant dull headache, tired sleepy feeling, specks before the eyes, partial loss of memory, noises in the head, palpitation and shortness of breath, sickness and loss of appetite, frequent micturition. and has continued more or less so.

Nine months ago, she consulted me, complaining sickness and pain in the Epigastrium occasional vomiting, frequent dull headache, palpitation. shortness of breath, tired feeling after exertion, pain over Praecordia.

Since thought she suffered from indigestion and biliousness.

General appearance good, slightly pale.

Urine Examination

Quantitative estimation of Urea.

Before Treatment

Average daily quantity = 1200 C.C.
Sp gr = 1014
Jan 10th Urea = 17 grms
" 12th " = 19.4 "

After Treatment

Average daily quantity = 1320 C.C
Sp gr = 1017
Sept 7th Urea = 22.32 grms
" 9th " = 21.7 "

no pulsating vessels, no subcutaneous oedema.

Physical Examination.

Inspection Praecordia, ayatoi.

Palpation apex beat normal, below and to the inside of nipple line. but feeble. no appreciable thrill or friction. No tenderness.

Percussion no increase of superficial dullness.

Auscultation well marked aortic B. S. murmur, with accentuated 2nd sound, best heard at mid sternum.

Lungs Sounds normal, Respirations 19 per minute. Pulse 80 slightly waterhammer.

Reflexes knee jerk very slight.

Urine normal in Colour, sediment, slightly albuminous, reaction acid average daily quantity 1200 c.c. Sp. gr 1014.

Diagnosis Aortic stenosis.

Treatment being in a situation as house maid, I advised her to give it up, as she felt great shortness of breath and exhaustion after morning work, which was a little hard, especially carrying coals upstairs.

medicinal & Hygienic treatment, as in previous cases, blister over midsternum & epigastrium is followed by improvement, but still the murmur remains, with shortness of breath on exertion. Pain over praecordial region gone.

Case VI K. McE. 27 years. female, unmarried, dress maker. Father living, healthy. Mother living, the subject of mitral stenosis & regurgitation, with bronchitis, yet she never had Rheumatic pains or Chorea. She has been the subject of heart affection for at least 20 years, being at present about 56 years. Katie has 2 brothers and 3 sisters all living and well.

About 2 years ago, Katie consulted me, for the first time, complaining of severe headache, weakness, shortness of breath, palpitation very exaggerated at times oedema of the feet, Cough and slight expectoration, pain over the sternum, uneasy full feeling after food.

General appearance marked, being

pale, with dull, heavy, oppressed look, but apparently fairly well nourished. She dates this illness five or six years back, when she suffered from irregular painful menstruation, dull constant headache, many tired feeling, palpitation, sickness &c. yet she never had Rheumatic fever, Chorea or any other trouble except Whooping cough. Her illness she states has been very gradual

Physical Examination Heart: apex beat to left of nipple line, feeble, thrill over apex, suggested superficial dullness, right border corresponding to right edge of Sternum, left border to left of nipple line, a soft marked soft a. S & a. S murmur heard best over apex, but also heard, though less distinctly, over the base. irritable, irregular action of the heart; pulse small, feeble, irregular, 72 per minute. Urine 1005 C.C. Albumen abundant.

Diagnosis This is evidently a case of soft

marked Obstruction & regurgitation of mitral origin, with well marked enlargement & mechanical symptoms, in the form of oedema of feet and Bronchial Catarrh.

Treatment - rest in bed nourishing diet: Belladonna plaster over praecordia with ℞ Vin Ferri ℥ss } ter in die p.c.
℞ Calumb gr XV }

℞ Tr digit gtt V
Syr Scill gtt X
Pil Aceta gr X ter in die p.c.

followed by ℥ss of fiss in water in 20 minutes. Great improvement in three weeks; after continuing this treatment for a month, I prescribed Ferri. Arsenic & Pil Strych with Infus Quassiae. to be continued for some time.

The use of a respirator twice daily, with 2 or 3 drops of a mixture of Creasoti and Iodini. Occasionally for a week or 10 days. I have advised a return to Ferri and digitalis as before. for the past two

years Katie has kept pretty well.
The point pointed, in this case, is the
fact of the mother having similar affection,
with equally obscure aetiology.
Case VII J. P. 29 female. Unmarried. at home.
This case is similar to Case VI in
relation to my own, without any history
of Rheumatic fever, Chorea &c. J.P. had
measles when 5 years old, beyond that
she enjoyed good health, menstruating
at 14 years, and continuing well
for some years. Family history
very good, and free from Rheumatic
or Heart-affection. Father and Mother
both living and well, one brother
living, Two dead, one in Childhood,
the other 13 years, of jaundice.
First symptoms appeared about 18 years
of age; when going to Church, a distance
of two miles, J.P. felt shortness of breath
and palpitation, and took the precaution
of leaving for Church some time before
the rest of the family, resting once

or twice on the way, and this went on for some time. When I was beginning my clinical studies, about 10 years ago, I took her to Consultor McCall Anderson, when he diagnosed mitral disease and slight Bronchitis. Treatment Iron. Digitalis. Calumba. Aurantii: great improvement.

~~Fourth~~ Past four years J.P. has been under my immediate care, during which time she has had four very serious illnesses. On each occassion I found her in bed, unable to lie down on account of difficulty of breathing, excessive Cough, with frothy mucus expectoration, Ascites and oedema of the lower limbs. Physical examination reveals very marked general Bronchitis over front and back of Chest: Heart, marked superficial dullness, rumbling, irregular action of heart, well marked, booming double murmur heard all over, well marked praecordial thrill, Pulse ~~very~~

irregular, breathing laboured; Urine small in quantity, reaction acid, albumen copious. The points of special interest are under the head of Treatment.

The administration of Digitalis, Squills and Mass acetate, as in Case VI, failed completely in two of the attacks, and on resorting to Strophanthus (which I had also tried in this and similar cases without benefit) giving it in 3 minim doses in plain water every hour, had now the most wonderful effect, when I was despairing of recovery. The pulse became stronger, less interrupted in four hours, and two hours sleep was obtained, which was a marked improvement, for 5 minutes sleep had not been obtained for days previously. Beyond this there seemed to be no further improvement for a few days, and I prescribed the Digitalis Squill & Mass as before and after that there was a steady improvement; the Bronchitis, ascites, oedema, all passing off, leaving

the heart less burdened, slop natural; and even a little exercise in the room could be had daily. Before and after any such attack, there was always irregularity, and finally cessation of menstrual flow.
Although J.P. has had so many severe attacks of heart-failure, & their extreme consequences, yet for the past-year, she has enjoyed good health; not being laid up one day, and this is chiefly owing to general management-treatment, during that time, being use of respirator as described in Case II to check Bronchial Catarrh, one of the most serious complications of heart-affection, interfering with the proper purifying of the blood, and causing great obstruction to circulation. India-rubber bandages are applied to legs daily, to prevent oedema as far as possible, but are taken off at night. When the slightest feeling of oppression arises

about the epigastrium, with loss of appetite, and the well known dark complexion, which are among the 1st symptoms of recurring failing Cardiac action. Then a mixture of Digitalis, Squill, and Potass, is prescribed after food, with Vin Ferri & Calumba before food. About 3 to 6 days suffices to remove all these premonitory symptoms, and the bright cheery look comes back. Diet, no restrictions, only those foods found to agree best in her own experience. Exercise, gentle walking, out-door if suitable; pianoforte and a little vocal music has been indulged in without bad effects.
Stimulants, only at bedtime in the form of 3i gin or whisky in water, without which sleep is delayed.
I said that in this Case there was no history of any previous affection beyond Measles at 5 years of age. My opinion is that Strain was the probable Cause, at a time

when the system could least bear it:- the age of menstruation. Being a good pianist and vocalist, her services were much run after, for concerts in aid of the poor, and as she was an enthusiast, ~~[illegible]~~ indulged to excess. About this time, being 16 years of age, while trying a very high run, and accompanying herself on the Pianoforte, she felt a sudden twinge, as if something had given way, inside the left breast, probably rupture of one of the Cordae Tendineae, and resultant inflammation and [illegible]

Case VIII J. S. 36 years, male, gamekeeper, Consulted me 3 years ago, about a severe attack of diarrhoea, sickness and vomiting from which he had suffered for a year, an oppressive dull headache for 3 months, followed by giddy stupid feeling, inability to do anything, even to walk, unable to sleep, tongue tired and slimy. J.S. stated that he had tried different treatments

without benefit. On seeing him approach, one conceived the idea that he was dazed and stupified with drink, while on sitting down he appeared very much exhausted. Burns history quite free from any complaints as far back as he can remember. About 10 years ago, he received a severe blow on the back of the head, but had no trouble from it. He cannot account for the diarrhoea &c. He says he never was intemperate but was not an abstainer; since then I have known him 3 years and found him most regular in habits.

Physical Examination reveals nothing beyond a little tenderness over the bowels, small, hard pulse, prolonged 1st sound of the heart, the only symptom which attracted my attention; reflexes exaggerated, Uric acid, slightly albuminous.

Diagnosis Chronic dysentery with resultant exhaustion, Cerebral anaemia

HC Treatment Iron. Arsenic + Potass Bromid, with great improvement; entire disappearance of diarrhoea in 4 weeks, headache and dull, tipsy feeling passing off gradually. Seen 6 months after still continuing Treatment, medicinal, dietetic, and Hygienic, as prescribed, and feeling very well. Seen again, 12 months after, still well and not using medicinal treatment. Seen again 2 years after, complains of palpitation, pain over praecordia, severe shooting pain at the back of the head, but only occurring as he is about to fall asleep; a terrible feeling of despair seizing him he springs into a sitting posture in the bed.

Physical examination reveals an aortic regurgitant Murmur, best heard at mid sternum, irritated heart action; reflexes increased, Urine slightly albuminous, acid. Treatment as before; by Arsenic, Ferri. + Potass Bron is followed by improvement, but not complete relief

from shooting pain at moment of slup.
Blister to back of head is followed by no improvement, and after trying various treatments, I at-last advised a stimulant, in the form of ℥iss of whisky in water at-bedtime, under the impression that the pain and despair were due to sudden distension of vessels and rapid emptying of heart, arising from arrest of vaso constrictor centres, at moment of slup, and thereby increased action of vaso dilators. This experiment was most successful, the whisky stimulating Hearts action and nerve centres, causing, more or less, general hyperæmia before sleep, which was shortly induced painlessly. This is the only means yet discovered for giving relief from this symptom.
Case IX similar to Case VIII Emotion merely on account of this symptom of shooting pain and sinking of despair at moment of slup coming on, not-constantly as in Case VIII, but occasionally,

especially when active daily exercise is not indulged in, and which, in this case also, is relieved by stimulation at bed time. G. McA. aged 28 years, fisherman, Complains of palpitation & exertion, especially after work, at times, uneasiness after food with sickness, severe rushing pain at the back of the head, and feeling of impending suffocation, at moments of falling asleep. Physical examination reveals U S + D murmurs, best heard at midsternum. He admits having been an excessive drinker for years. The family history is also unsatisfactory.

Population of Tarbert about 1800

Deaths in four years up to October 1889 = 149

Average yearly death rate = 37.2 Per 1800 = 20.6 per 1000

Cause of death	Number in 4 years	Yearly average	Average yearly deaths per 100 deaths
Heart	14	3.5	9.4
Phthisis	22	5.5	14.7
Tabes Mesenterica Meningitis Tubercular & Strumous disease	15	3.7	9.9
Diphtheritic sore throat	10	2.5	6.7
Typhoid	2	.5	1.3

Taken from the registers to show the deaths occurring from diseases most common in the district & which influence or predispose to heart affection.

In fourth it will be noticed die from Phthisis or one of their near relations :- Meningitis. Strumous disease or Tabes.

Having finished the record of cases, under Chronic Endocarditis, cases which I have carefully watched, some of them for years, will now proceed to note the points of chief importance, and give explanations as they occured to me in studying these cases. Each case herein recorded has been faithfully investigated, as to family history and previous personal illness, and although might have given more cases, yet I abstain from doing so, on account of some history of diphtheritic sore throat, any of the fevers especially Rheumatic & Scarlet, Chorea, Syphilis Strain, Alcoholism &c.

Whooping Cough or Measles occurred in one or two of these cases recorded, but only during Childhood, and perfect health was enjoyed for many years after, so that that could hardly be advanced as a cause.

One case VIII history of strain as probable cause

One case IX " " Alcoholism " " "

but recorded, mostly on account of some points in treatment and interesting symptoms. On looking over all these cases, one may notice many points of similarity, a few of dissimilarity, but what appear most interesting to me are the forms of heart-affection met with, and the obscure aetiology.

The Forms

In cases I. III. IV. Physical examination reveals a distinct murmur, L. S in rythm, and best heard over the base of the heart in the pulmonary area; the so called area of functional murmur, and area of romance. The arguments in favour of this being functional in the cases quoted are:- (1) Age; (2) Sex; (3) cessation of menstruation, and other anaemic symptoms as headache, lassitude &c.

The arguments against are:-

(1) The persistence of murmur after disappearance of anaemic symptoms, and even for years;

(2) the fact that in organic mitral a basic

murmur
mitral is often heard;

(3) In Case III an apex murmur developed after the basic;

(4) in Case VI an apex murmur occurs with a basic;

(5) Want of Venous & pulsating vessels.

(6) Cases III & IV present what, to my mind, are embolic symptoms, in the form of slight Hemiplegia.

(7) Cases II & VI are most diagnostic of Mitral affection, and are as obscure in aetiology as I III & IV

(8) Cases V & VIII. acute, without any history of the usual causes of Endocarditis.

Aetiology

As regards the aetiology of these Cases; taking the various symptoms into account;

Anaemia in Cases I, III V VI, there seems to have been for some time, shortly after the age of menstruation, a chronic, irritative, anaemic state, inferred from the premonitory symptoms, about an age when they would be leaving school, and their

healthful recreations, for confinement at home. The result of underfeeding, or improper feeding, combined with a close obnoxious atmosphere, and drain from menstruation, in the shape of exalted nerve force and vascular tension, might be sufficient causes for degenerative changes. Depending on this state of the blood are many results, all of which I think can be fairly said to act as factors in the production of Chronic Endocarditis. Nutritive quality. The blood of a healthy subject has a definite composition. The nutritive quality depends on the Proteids contained and that chiefly in the corpuscular elements; these again depend on the amount and quality of food, as, from the urinary examination, there was found diminished excretion of Urea, showing either that Proteid matter was not introduced in sufficient quantity in the form of food, or the proper destruction and elimination

of nitrogen in the form of Urea was not complete.

The blood, when healthy, has a most important function to perform, Viz:- the carrying and interchanging of material, solid and gaseous, between itself and the various organs. If the Composition of the blood is altered, by being reduced in nutritive value, the results must be serious:- degenerative changes in tissue and organs, respiratory changes not properly fulfilled; combined with this a vitiated atmosphere, which permits of the entrance of injurious and irritative material, instead of the pure oxygen so essential to purifying of the blood, bringing its effete products; so also with the other organs; they cannot perform their various duties of transformation and elimination, and the result is a still more irritative state of the nutritive fluid. Dr Bristowe in his "System of Medicine" mentions the results of retention of effete products on the blood vessels as:- "Muscular Contr-

"action of capillaries; increased blood pressure
" loss of albumen, and deterioration of blood,"
all of which are evident in the cases
examined, and herein recorded, especially
cases I & III. The thickening and contraction
of arterial tunic may be seen. Wm
Gull and Dr Sutton pointed out, due
to hyaline fibroid thickening, like sclerosis
of other organs, due to degeneration.
The effect of this arterial tension and contraction
must be to increase the hearts work.
According to "Dr Gaskell" the heart must be
considered as a specially developed piece
of artery or vein. It is says "Brunwell"
apart of the general vascular system, specially
developed as a muscular pump, for the
receiving and propelling of the blood, along
with this, the elasticity of the arterioles assists
greatly. If there an obstruction is in front,
in the shape of contraction, and loss of
elasticity, the heart must work harder,
or circulation will cease. Ludwig, Hesse
& Macalister have shown, that regurgitation

is provided, by contraction of ventricular fibres around Auricula Ventricular orifice, and closure of valves. The increased action on degenerated muscle then will, as Dr Bramwell mentions cause dilatation of Ventricular fibres around Auriculo Ventricular orifice (relative + muscular incompetency) and regurgitation. So also in the case of Aortic, and the same conditions which cause the hyaline fibro thickening of arterioles may cause sclerosis of valve, segments and stenosis, and I consider that the specially irritative condition of the blood in the cases mentioned may induce warty vegetations, or similar outgrowths from the edge of the valves, where most irritation exists. "Cases III + IV."

Nervous system That the nervous system is affected, probably by degenerative changes in the cord and brain, is shown by the irritable state of the heart and system generally; increased reflexes, and loss of memory. But the nervous mechanism

of the heart is so complex and ill understood, that one can only give what seems to him a reasonable theory:- the loss of balance between the stimulating and inhibitory fibres due to irritation and defective nutrition of nerve cells.
The muscular contraction of arterioles may be due to direct stimulation from irritative fluid contained; or partly to reflex stimulation, induced by impulses sent from peripheral ganglia or nerve terminations in coats of arterioles to nerve centres, overexcited from degeneration. If then the over stimulated centres respond to sleep, suddenly there is dilatation of arterioles, caused by impulses from Brain and Cord through vaso dilator nerves, producing the shooting pain in aortic Cases 8 and 9, and feeling of despair resulting from sudden emptying of heart cavities; but if we use a stimulant before sleep, we shall have increased dilatation through stimulation of centres in medulla

sending impulses along vaso dilator nerves, and thus avoidance of symptoms, for at the moment of sleep the vaso dilators seem to come into play, and the vaso constrictors to cease through exhaustion. This sudden dilatation would account for the frequency of death during sleep, in cases of heart affection or degenerated vessels.

Stomach symptoms which are present, more or less, in all the cases, are no doubt another symptom of a system suffering generally from degeneration: In well marked cases of mitral disease, as Cases VI & VII, passive congestion is most probably the true cause, which also is the cause of Ascites and Oedema. The slighter oedema of the ankles in Case I might be produced by debility.

Lungs the respirations are increased, more or less, in number per minute in all the Cases. In I, III, V. the increase in frequency will be due to an attempt of nature to rid the surcharged blood of its excess of Carbonic acid, and to inspire pure Oxygen

which is an indispensible element of the blood in the processes of oxidation; while in the more advanced cases, the attendant Catarrh or oedema will be a further cause. Mind on account of the inactivity and depressed state of the individuals affected. an excessive amount of work is put on the kidneys, which are not able to do their own proper amount of work, from want of sufficient nutrition, the result being as we have seen in the different examinations of urine; diminished excretion, excessive quantity of urates in proportion to amount of urine, diminished excretion of Urea, and presence of Albumen. Professor Grainger Stewart in "Brit: Med. Jour. 11/6/87 puts it as one of his conclusions that "moderate muscular exertion diminishes albumen" which appears true in these cases.

Paralyses In cases III & IV the slight paralyses I thought would be due to embolic origin. That vegetations might form on the valves is quite compatible with vegetations of Rheumatic origin in Rheumatic cases, as the conditions must be very similar.

Whether or not an anaemic condition exists in acute Rheumatism, there is decidedly an altered irritative state of the circulating blood, which is the cause of inflammatory changes and exudations. In the cases mentioned there we have a degenerated state of tissues and irritative alteration probably slightly septic condition of blood not capable of producing a true septicaemia, and yet capable of producing inflammatory changes on degenerated tissues, and when our means of research are more improved, we may find micrococci or some other specific element in all tubular affections.

Basic murmur As regards the basic murmur Naunyn says that mitral regurgitation may have its seat of intensity in the 2nd interspace 1½ inches to left of sternum; so also does Dr George Balfour in connection with anaemic murmurs, and their explanation is "that conduction of sound through dilated auriculo appendix. Well! whether there is dilatation of appendix or not, I should be inclined to

believe the more dilatation of Auricle, with its difficulty or almost inability to compensate itself, dilating earlier and more rapidly than the Ventricle, in Cases of regurgitation, and having the direction of current backwards towards auricle, might in some cases be more distinctly heard over Auricular appendix, and as is shown in some of the cases noted, heard afterwards at the apex also on account of dilatation and thickening of Ventricular wall, the increase being gradual, and secondary to the Auricle, which would not probably occur if the case had been seen and treated at commencement of regurgitation. Besides symptoms given and explained to prove that cases of Endocarditis may arise from degenerative changes, combined with an adynamic state of atmosphere, and without causing any other ordinary septic diseases I would further offer the following arguments.

10 Taking the deaths occurring in Ireland a very large proportion are due to Phthisis and

Tubercular Meningitis which are truly diseases associated with bad housing, overcrowding, and vitiated atmosphere, together with inter-marriage

(2) A large proportion are septic diseases especially Diphtheritic sore throat.

(3) The fact as before stated that I have not had one case of Rheumatic Fever in four years nor do I know of one occurring

(4) Deaths from heart-disease are recorded in registrar's returns

(5) Not one of the seven cases I II III IV V VI VIII had the slightest history of any disease likely to cause Endocarditis.

(6) Anaemic conditions favour heart-affection as there is more relation between the severity of heart-affection and the Anaemia of Rheumatic Fever, than between the severity of Rheumatic fever itself and heart. (my own opinion in English Practice). It may be advanced against this opinion, that the anaemia in most cases only appears after the fever symptoms abate, when the injury has been done in the heart, yet are most severe

that anaemia predisposes to Rheumatic fever, and that the Rheumatic symptoms place the anaemic in the back ground, to a great extent, as the Rheumatic symptoms must be the more prominent.

Heart-affection following on typhoid fever appears late with the anaemia, probably because the poison has not the same tendency to irritate the endocardium, and the anaemia is not commonly a predisposing cause, but is generated by the fever.

Arguments against Atheroma:-

(1) It seldom affects the Mitral valve.
(2) " occurs after 45 years of age
(3) " affects males chiefly.
(4) " presents tortuous vessels

Arguments against Congenital:-

(1) Congenital affects right side generally
(2) " has often cyanosis or other grave symptoms (Bramwell)

Treatment. the treatment of heart-affection depends on the rapidity with which symptoms develop, the degree of recuperative power in the tissues themselves, which is influenced by age and surroundings, the amount of damage done, and the special value affected. Unless we can restore the muscular tone we cannot treat successfully heart-affection, for then Compensation is impossible. As said before, heart-disease in any form is, of all diseases, most unfavourably influenced by degeneration or anaemic conditions. If we have no marked mechanical symptoms of failing Compensation, then entirely tone treatment, increasing the quality of the blood is most beneficial as in Cases I III IV V VIII, Combined with gentle exercise in the fresh air, friction, nourishing food, lipoid bathing, all of which tend to restore to each organ its own peculiar function, and thereby ease the over burdened Kidneys, thus allowing of diminished blood tension, the elimination of effete products Urea &c, the disappearance of albumen,

improved state of the nervous system, and a return of vigour to all the tissues and organs. Thus if mitral regurgitation has not excited long, and without regulations it (although even they are often reabsorbed) the incompetence may be completely cured, stenosis not so liable, and aortic less liable still to occur. If however compensation is wanting as in Cases VII. VIII., we must first relieve urgent symptoms, as in these cases there is rather a want of tension.

Heart-tonics no drug can surpass Digitalis in most cases of failing compensation, especially mitral, although it failed tonic in Case VII, probably the dose was at fault (7 minims every two hours) although I have always found the greatest benefit derived from small doses gradually increased, and never to exceed 10 minims every 2 to 4 hours as required.

Strophanthus I have tried repeatedly with very trifling benefit, yet in Case VII it acted like a charm in 4 hours, (3 minims every hour) probably in this case Strophanthus, being a more powerful tonic, acted like a large dose of Digitalis.

Arsenic cannot be too much lauded as a tonic,

especially in cases tending to degeneration of heart muscle the most valuable results are obtained, and in an ordinary case of insufficiency, with a system generally out of tone, complete cure may be accomplished, and I always advise its use in all Mitral heart-cases, after the more urgent mechanical symptoms disappear, and compensation pretty well established, when it seldom fails to increase the general vigour of the system. For the mechanical symptoms and complications arising from heart-failure, combinations with heart-tonic must be made to suit complications.

Bromide of Potass in minute doses (gr v) may be combined with advantage. I have found it act well by its gentle tonic and sedative action on the nerve centres.

Oedema & Ascites purgation in some cases is a great benefit, by first increasing the general activity of the general alimentary system, and relieving slightly the passive congestion, then a diuretic as Potass Acetat with Digitalis, sometimes the addition of Scoparium, as

combinations seem to act better. Other means of stimulating the kidneys may be employed, as poultices with mustard. &c.

Lungs To check catarrh of the lungs, so common a complication, and one which easily upsets the balance of circulation, especially in cold damp climates, I advise the use of a respirator twice daily, for a short time, having a few drops of Creasote & Iodine for inhalation; as a rule this is a very great benefit. Combined with this the expectorant properties of Squills may be taken advantage of in combination with tonic and diuretic drugs, or still more purely expectorant treatment may be employed, alternating with tonic and diuretic.

Stomach complications. In the early stages, and often in the late stages, Gastric irritation is common, and may often be successfully treated by a mustard blister over the epigastrium. Arsenic acts well as a sedative & tonic in those cases, otherwise attention to diet and general treatment must be depended upon. Stimulants I avoid as much as possible but in failing Compensation, and in sleeplessness

I allow whisky or Gin and water at bedtime to prevent sleeplessness which is another troublesome symptom. In extreme cases more frequent stimulation may be required.
Morphia, I found of no apparent benefit.
Other than genius treatment, as already described, I advise when practicable, laying special stress on diet: small quantities, being given frequently, of the most nourishing and easily assimilated food.

Ulcerative Endocarditis. I mentioned in the first part of this paper, that I should treat with, Chronic, and Acute Ulcerative forms, of Endocarditis and having finished the treatment, of the subject of Chronic Endocarditis; let me now record a case, of what seemed to me, to be the acute Ulcerative form of Endocarditis, and that occurring in the subject, whose family history, and personal history, I have already sketched out; under Case I of Chronic Endocarditis.
I said in the final remarks of Case I that I met was much improved, yet the manner presented

18 months after first confinement. Jennet then went to service on my advice, continuing in very fair health for fully twelve months, when she again consulted me about the beginning of August. Her complaints then were very vague, not knowing exactly how to describe her symptoms. At first she felt generally depressed, and out of sorts, a feeling faintishness, with creepy sensations over the back and arms, at times hot and feverish, sometimes sweating, loss of appetite. She did not complain of any of her previous symptoms of palpitation, or shortness of breath. The examination of the heart did not reveal a state worse than before. These vague symptoms continued about three weeks, when headache supervened; she also felt pain over the first metacarpophalangeal joint to its inner side, which ulcerated forming a small deep ulcer. In about a week after the first ulceration, another formed on the corresponding joint of the little finger; at the same time pain, with fluency over the lower part of the right lung, pains in the joints, chiefly the smaller joints and toes. Temperature varying

from 100°7 to 103°7. At this stage I made up my mind that I had a case of Rheumatic Fever and prescribed Salicine freely, without the slightest benefit, but rather harm, for the stomach symptoms got worse, and once or twice a little blood was vomited. At this time, being about seven weeks after the first vague symptoms, Congestion of the base of the right lung set in, with Temperature varying from 102°7 to 104°7 and once 105°7 a trace of blood in the urine, with copious albumen, at times becoming slightly delirious and for the first time about the ninth week she complained of pain over the Praecordia, examination of which revealed, a well marked double murmur (mitral). The Urine contained blood and albumen the former not Constantly. Purpuric spots appeared on the body twice. After the 9th week marked rigors, with profuse sweats set in frequently, sometimes daily, and lasted for fully six weeks. Quinine was of no use in checking these rigors. For about 10 days after the rigors there was improvement-

Temperature going down to 100°F. about the end of November, there was a sudden rise of temperature to 103°F but with very irregular variations. Headache gradually got worse, with delerium slight, coming on at night, great prostration, pulse 120 feble. During the last week of the illness she became completely Comatose, and died in the beginning of December. A Post-Mortem examination could not be obtained.

Diagnosis Acute Ulceration Endocarditis.

Remarks

About the time of the first vague symptoms appearing, an Epidemic of Diphtheria broke out in the village, where this girl was at service, about 12 miles from Tarbert; this might be the source of infection by inhalation, although no diphtheria existed in her case, either before, or during the illness recorded. No other Cause could be ascertained.

This Case is another to add to the experience of such men as Virchow, Sir James Paget, Dr Goodhart, Dr Osler and Dr Bramwell.

that a Chronic derangement of the valves is a most frequent predisposing cause of Ulcerative Endocarditis, presenting a suitable soil for Micrococci to settle.

This Case may be classed as Pyæmic.

The Ulcers appearing on the hand, the pains in the joints, Pleurisy, Hæmaturia and finally Meningitis, all being due to irritating material carried in the blood current, forming embolisms.

The length of illness is another interesting point, extending as it did over four months, although Dr Bristowe has recorded in the "British Medical Journal Page 800 Vol I" a most extraordinary case pernicious onset simulating, Intermittent Fever, and lasting many months.