friends; but it was constantly in my mind that a renal calculus might be the source of the mischief, and that further developments would substantiate this suspicion.

I saw little of my patient during 1896 until the last week of the year. She was then suffering from dyspepsia, and I could not help noticing that she had become considerably thinner and altered in appearance. On examination in bed I detected a slight musical murmur, which was persistently heard a little to the right of the apex beat. Her pulse-rate was about 48 a minute at the outset of my attendance, and her symptoms were headache, restlessness, and insomnia. Later on fainting attacks supervened, which soon became frequent and very alarming, and I considered a great change for the worse had come over her. I had very little success in the management of the case during the very dull wet days of late January and early February of this year; rest in bed, occasional doses of antipyrin and bromide of ammonium to relieve headaches, and a course of treatment aiming at checking acidity were the means mainly relied on. Later on free heart stimulation by digitalis, alcohol, and subcutaneous injections of strychnine with ether were employed to remedy the faintings, which were incessant. With the warmth of bed and a supervised diet the attacks of lumbar pain completely ceased. One day on exposing her chest for stethoscopic examination I was surprised to find an eruption of herpes zoster extending round the same region where she had suffered previously from the neuralgic attacks.

During the whole course of my patient's last illness her temperature was subnormal and pulse abnormally slow, ranging about 40 per minute. A fortnight before her death on counting the radial pulse and comparing with the beat at the apex the rate did not rise above 35. The character of the pulse was that of moderate tension, the rhythm was regular, and, with the exception of its curious behaviour on one day, its course was that of gradually increasing slowness.

As the condition was obviously serious the case was seen with me by a neighbouring practitioner, a careful observer, to whom I had sent details by letter. We had some distance to go to meet at the house, so I had not seen the patient previously during the day. I was much surprised when on auscultation the consultant said to me in an undertone: "Your bradycardia is gone." On examining for myself I then found that the slow laboured action of the heart had disappeared, being 128 beats per minute. Our conjoint prognosis was a grave one, the consultant agreeing with me that the patient's condition was very serious. How the changes in the pulse-rate took place I am unable to say, but on my subsequent visits the bradycardia was again pronounced. In a day or two the pulse had returned to the 35 per minute rate, and on the tenth day after the consultation the radial pulse and the heart beat, counted together, registered 26. On the evening of that day, while the nurse and daughter were preparing some article of food in the room, the patient suddenly died.

It was a matter of extreme regret both to the consultant and myself that the relatives would on no account permit the patient's body to be subjected to a post-mortem examination.

The clinical facts in this case were:

1. Old age and degenerated blood vessels; uric acid diathesis. The patient had enlarged small joints, and the urine was habitually acid, with deposit of lithates. One brother had suffered from gout severely.

2. Intercostal neuralgia, the climax of the foregoing condition. The cycle of habits previous to her last illness was: Intense pain, doctor, morphine, examination of urine, treatment for acidity, recovery, care for a time, less care, no care at all, recurrence of pain, etc.

3. Cardiac dilatation, with probably diseased semilunar valves. The patient exhibited short breath and had a slightly cyanosed appearance with blue lips. My patient suffered from headache and vertigo towards the last, but had no convulsive seizures.

Bradycardia, as is generally known, is coupled with tachycardia, as the extremes of aberration from the pulse-rate of health; 40 beats per minute and anything under may be considered as morbid, and bradycardia established. It has been held that the cause of the affection is the application of an irritant to the ends of the vagus in the heart, and that the inhibition of the heart is increased by the presence of certain morbid matters circulating in the blood which act directly on the heart muscle. In the case I have recorded one would certainly have found some gross pathological condition associated with the abnormal cardiac rhythm. Probably the changes on which bradycardia depends are degeneration of the heart walls, fatty heart, and depression of the nervous system through the action of poisons, bile, urea, etc., which are present in the blood in certain conditions. In my case the development of the slow pulse was simultaneous with the changes in the heart and system, evidenced by the symptoms and physical signs of progressive cardiac dilatation. Neuritis and acidity were present during many years of intermittent suffering, but not until definite structural changes in the heart appeared was the bradycardia distinctly pronounced.

I have related the case mainly on account of the interest attached to its unexpected termination. Its lesson is the grave significance of the onset of the very slow pulse, combined with the symptoms of fainting, sufficiently alarming at first, but not enough to lead one to predict that treatment would be altogether ineffectual, and that the patient's end

was so very near. Again, the sudden interruption in the course of the bradycardia is to be noted. This is difficult to explain. Emotional excitement of a patient submitted to a consultation between two medical men is scarcely a strong enough reason; but nevertheless its occurrence corresponded with that transaction.

PEMPHIGUS CONTAGIOSUS.

By GERALD SICHEL, F.R.C.S.Eng.,
Surgeon R.N.

[Communicated by the DIRECTOR-GENERAL OF THE MEDICAL DEPARTMENT OF THE NAVY.]

UNDER this name, Dr. Patrick Manson (in Davidson's *Hygiene and Diseases of Warm Climates*) describes a skin disease of damp tropical countries. It is unaccompanied by any constitutional symptoms, and the elementary lesion is described as a large, hemispherical, clear, tense vesicle or bulla; these vesicles become flaccid and burst. Two forms are described, according to their distribution: an axillary form, met with in adults; and a diffuse form, mostly seen in infants. As the name implies, Dr. Manson considers it a contagious disease.

This description more or less tallies with a series of cases which occurred on board H.M.S. *Gibraltar* during the first three or four months that the ship was at Zanzibar (arriving there during the "lesser" rains or "vuli"); cases also occurred on board H.M.S. *Sparrow*; she had just recommissioned, so that the men were new to the climate. The disease does not appear to be met with on shore, so that I take it to be more or less special to newcomers.

The disease as I observed it appeared to occur in three forms, two of which were met with as sequelæ to lichen tropicus, and the third in which the eruption appeared on previously healthy skin. By far the most common was a pustular rash, following closely on "prickly heat." The following case is a typical one:

D., aged 29, a chief stoker, who had been suffering from an attack of fever (from which he had entirely recovered), had also had an extensive outbreak of lichen tropicus, especially on his legs, the remains of which still lingered both on these and on the trunk. The following rash then appeared: flat-topped, bright yellow pustules, surrounded by a narrow, well-marked, hyperæmic ring, varying in size from a pin's head to half an inch in diameter, for the most part discrete but closely set, with nothing noticeable as to arrangement. These burst after a few hours or a day or two, the contents and covering collecting in a semilunar or circular scab around the edges of very well-defined circular scars, at first pink and shining, soon becoming pigmented stains which persisted for about three weeks, looking like syphilitic pigmentation. The rash was roughly symmetrical, being limited to the lower extremities and the lower part of the trunk. It itched very much. His urine was free from albumen, and there was no constitutional disturbance.

Many other cases occurred, identical in character, except as to distribution, the rash occurring not only on the legs, but also on arms, axillæ, face, neck, and upper part of trunk. The most troublesome were those which attacked the inner side of the upper part of the thighs.

In one case of a man who was suffering from a very severe attack of fever, to which he ultimately succumbed, the rash was mixed with numerous boils, and was also peculiar, inasmuch as many of the spots were umbilicated almost like small-pox. In no case could contagion from other cases be definitely traced.¹ In some patients the disparity in size of the pustules was well marked, but in others they were much more uniform, generally about the size of a split pea, sometimes two or three small ones ran together to form a large irregular pustule.

Another class of cases may be described as follows: A rash appears—on the face and neck especially, but also on the trunk and limbs—in patients who have suffered for some time from prickly heat; spots come as scattered vesicles, at first clear, but soon opaque and milky-looking, surrounded by a narrow pink areola; the size varies from a pin's head to a small split pea; these soon burst, either by being scratched or naturally, without becoming pustular, leaving dry, pink stains, with a circular or semicircular border of dried secretion and cuticle of the vesicle; the colour of these stains does not entirely disappear on pressure, and, although discrete at first, they rapidly become confluent, and then present large pink patches surrounded by sinuously-curved, well-defined borders. The rash itches slightly; it is not symmetrical, but occurs in irregular patches. If neglected and much scratched it becomes almost impetiginous in

appearance. There is no constitutional disturbance. The contents of the vesicles are not acid, so that they are not simply full of retained sweat. Moreover, it differs from hydroadenitis, inasmuch as it is a much more superficial disease. These vesicular rashes were chiefly observed in the earlier cases, not when the disease had become a regular epidemic.

The third variety occurs in persons who have not suffered from prickly heat, or at any rate not to any great extent; the spots are vesicular or pustular, and, when coming out, are accompanied by a sharp stinging pain, like in herpes zoster, another point of similarity to this disease being that they remain strictly local and are arranged in small groups. There is little or no itching in this variety. In one case, which occurred on the right thigh, the vesicles were arranged in groups just where the middle and external cutaneous nerves and the cutaneous branch of the obturator pierce the deep fascia to become superficial.

Manson's axillary form of the disorder also appears to me to belong to the same class, its localisation possibly being explained partly by the excessive perspiration in this region and partly by the distribution of branches of the intercosto-humeral nerve. In all other characteristics this form was identical with one or other of the first two varieties.

There is no doubt in my mind that the disease depends primarily upon excessive sweating. This over-action of the functions of the skin gives rise to inflammation, and whereas in lichen tropicus we get a papular form of eruption, in these cases we see a further advance to the vesicular and pustular varieties.

Contagion and auto-inoculation are not marked features, and pemphigus is a bad name, inasmuch as the characteristic lesion is a flat-topped, flaccid vesicle or pustule, instead of being raised, hemispherical, and tense. Moreover, whereas nothing definite is known as to the etiology of pemphigus here, it seems to me we have a very definite sequence of events. The term sudoral dermatitis (dermatitis sudoralis) would be better, as naming the disease from its cause; its varieties could be further described as pustular, vesicular, and herpetiform respectively.

I had no staining reagents on board, and so was unable to make any conclusive microscopical examination of the contents of the pustules. All I could make out were pus cells and a few scattered epithelial cells.

The most important part of the treatment is to keep the patient quiet, so that he sweats as little as possible. Warm baths are cleansing and soothing, after which a powder of zinc oxide and starch may be applied, or sublimed sulphur in the pustular form, to check the ingress of micro-organisms. In other cases applications of vaseline or lead lotion give great relief.

It is seldom necessary to diet the patient, or to give other internal remedies than an occasional mild purgative.

NOTE.

¹ Four experimental cases—two of inoculation in other persons and two of auto-inoculation—failed.

PERFORATED GASTRIC ULCER.*

By WALTER BROADBENT, M.D., M.R.C.P.

PERFORATION of a gastric ulcer is a subject on which much has been written, especially in the last few years, since the operations undertaken have been more successful; but the difficulties that may attend the diagnosis of perforation, and the different conditions resulting, if the diagnosis is not at once made, have led me to investigate the subject since the time when, as a resident at St. Mary's Hospital, I had under my care two cases of subphrenic abscess due to this cause, one under the left wing and the other under the right wing of the diaphragm. For this purpose I have made an analysis of the notes of 50 cases, as well as seeing several necropsies and operations.

As regards the proportion of gastric ulcers which perforate, I find that in St. Mary's Hospital during the last five years, there were 18 cases of perforation, while 308 patients were

admitted suffering from gastric ulcer as indicated by pain, vomiting, and hæmatemesis, omitting in this number many with pain and vomiting not sufficient to make the diagnosis probable. This gives 6 per cent., and Willig¹ having searched specially for ulcers in 3,440 *post-mortem* examinations, finds scars or ulcers 221 times, but perforation only 6 times, a proportion of only 3 per cent. Another fact which comes out in the St. Mary's statistics is that two-thirds of the cases are admitted to the wards in the six months October to March, and 11 of the 18 cases of perforation occurred in these six months. This is probably due to the greater prevalence of anæmia during the winter.

SEX.

The percentage of perforations is greater in females affected with ulcer than in males; in these 50 cases of perforation there are 43 females to 7 males. Crisp² found 39 females to 12 males, but Brinton collected 74 males to 164 females.

SITUATION.

The position of the perforated ulcer was in 31 cases the anterior surface, in 15 the lesser curvature, and in 3 the posterior surface, which corresponds roughly to Brinton's 70 per cent. on the anterior surface, 21 per cent. on the lesser curvature, and 9 per cent. on the posterior surface. But in my cases, 5 of those on the anterior surface were within 1 inch of the lesser curvature, and 7 more within 2 inches, so that the ulcer was most frequently near the lesser curvature. Three cases had ulcers on the posterior surface as well with their bases formed by the pancreas, 2 others had an ulcer on the posterior wall only through the mucous membrane, and in 1 case a perforation occurred in an ulcer on the posterior surface after the anterior one had been sewn up.

APPEARANCE.

The perforated gastric ulcer has in most cases the appearance of an ulcer of some standing; the size varies from that of a farthing to a half-crown, or rarely larger, and the perforation is from one-eighth to three-eighths of an inch in diameter. The edge of the ulcer is raised and thickened with inflammatory infiltration, and the base is less supple and more easily lacerated than the rest of the stomach from the same cause, so that an ulcer is usually readily felt by the finger as a stiff and thickened patch in the stomach wall; also for a couple of inches round the perforation on the serous surface there is a quantity of flaky adherent lymph if more than about six hours have elapsed since the accident. In a few cases the ulcer is found to be of quite recent formation, with no inflammatory reaction in the edges, and then has the characteristic "punched out" appearance of Rokitsansky, the serous membrane being punctured at once. Again, on the other hand, the necrosis of the serous membrane may take place slowly enough for a protective peritonitis to glue the ulcer to a neighbouring organ, so that one finds after death from other causes ulcers adherent by their bases to the pancreas, liver, diaphragm, and even to the abdominal wall; in most of these cases there is no further trouble, but in some the gastric juice gradually erodes a sinus into the tissue to which the ulcer is adherent; this has been the cause of abscess in the liver and in the spleen, of gastro-colic fistula, of perforation of the abdominal wall, and by working through the diaphragm, of pyopneumothorax, pericarditis, and perforation of the heart itself.

SUBDIAPHRAGMATIC ABSCESSES.

When the ulcer has perforated there is not necessarily general peritonitis; out of these 50 cases 23 had sub-diaphragmatic localised collections of lymph or pus, and it is probable that in some of the others operated on by surgeons the spread of fluid over the whole abdomen did not occur till the free incision was made. Mr. Victor Horsley reports this as occurring in one of his successful cases, and it occurred in an unsuccessful case at St. Mary's. Leyden pointed out this not infrequent result of perforating gastric ulcer in his paper on Pyopneumothorax Subphrenicus in 1880; and it is interesting also that the first case recorded in medical literature, by Grassius in 1696, had caused a subphrenic abscess containing food and pus. In the 14 *post-mortem* examinations at St. Mary's the peritonitis was localised in 8, and in examining

* A paper read before the Brighton and Sussex Medico-Chirurgical Society.