hospital, where he lay for a few weeks, there being at this time vomiting and diarrhoea. Frequently the stools contained small quantities of blood. He recovered sufficiently to sail to South Shields, where he was seen by Dr. Drummond. At our consultation two days afterwards we found him bathed in perspiration. There had been rigors. The temperature was 104° and 105° in the evening. There were œdema, hæmaturia and an enlarged spleen, the other organs being apparently healthy. The case was not one of acute nephritis. There was something about it which made us both regard it as a type of malarial fever. We gave him large doses of quinine every three hours, and in a few days afterwards liquor arsenicalis. Within ten days blood and albumen had entirely disappeared from the urine, the temperature had fallen to the normal, œdema had disappeared, and the patient was quite well. Since then Dr. Drummond has had a similar case from the same river with more pronounced ague-like symptoms, accompanied by hæmaturia, in whom, although badly borne at first, the symptoms rapidly subsided upon the administration of small but increasing doses of quinine.

My second case is that of G. L.—, aged twenty-seven, a seaman, who was admitted into the Newcastle-on-Tyne Infirmary complaining of pain in the abdomen with giddiness and sickness of five weeks' duration. His father died of heart disease, his mother from an illness the name and cause of which are unknown, whilst a brother died at the age of twenty-six of phthisis and a sister of the same disease at the age of twenty-four. Eight weeks before admission the patient was on the Danube at Ibraila. The drinking water was very impure; it had a peculiar taste. The ship had run short of water, so the tanks were filled from the Danube. Twelve days after drinking this water the patient was seized with a colicky pain in the abdomen; a few hours afterwards he became delirious, and remained thus for two days. This attack lasted eight days, vomiting as a symptom being absent from first to last. Two weeks after his recovery he landed in England. Within the next few days he had a return of the fever and suffered much from pain in the front and back of the head. He was extremely prostrated by it. Vomiting now occurred, and during it he brought up a small quantity of blood. There was diarrhoea, accompanied by the presence of blood now and again in the stools. He recovered fairly well from this, but felt extremely weak. He could not walk without feeling as if he were going to fall, owing to vertigo. It was in this condition that he was admitted into the infirmary. There was considerable sallowness of the skin, but this, he said, was natural to him. The tongue was furred, the appetite good, the bowels irregular, sometimes as many as three stools daily and then perhaps no stool for a day or two. The highest temperature was 100°; the pulse ranged from 60 to 72. The heart and lungs were healthy. The area of hepatic dulness was normal, whilst that of the spleen was much increased. The urine was acid, but did not contain albumen.

The only other case that I shall mention is that of O. J.—, a Swede aged thirty-two, admitted into the infirmary a few days after the last patient, complaining of pain in the abdomen, of weakness and loss of flesh. On board the ship he had partaken freely of vegetable food and lime juice. Seven weeks before admission he had "fever" whilst at Ibraila on the Danube. There were diarrhoea and vomiting. He sailed to Gibraltar, where he was admitted into the hospital, and after a short residence there he came to the Tyne. When I saw him his tongue was very furred, he was sallow and anæmic; the bowels were regular, his gums were spongy, but had not bled; the liver dulness was enlarged and the area of splenic dulness was very much increased. On microscopical examination the blood did not exhibit any peculiarity except that the red cells did not form rouleaux. The urine contained albumen. In a few days after the administration of quinine the albumen disappeared from the urine and the patient was soon well.

The patients whose histories I have briefly recorded were seen by me some time after the original attack had been passed through, so that it is impossible to be perfectly accurate in regard to the exact nature of the illness at its commencement; but when observed later on it was clear that whilst they presented symptoms suggestive of malarial poisoning, the disease was neither pure malaria nor was it typhoid fever. In one of the cases, if not in all, the drinking water was apparently the cause of the illness; but the interesting point is that all the patients had been for some time, longer or shorter, on the Danube, and when they came under observation

they presented some of the symptoms of malaria, accompanied in almost every instance either by hæmaturia or albuminuria and presenting enlargement of the spleen. The tongue, too, as in Dr. Milnes' cases, was very furred. Whether they are to be regarded as cases of local fever to which the term "Danubian" may be applied, just as we speak of Malta, Gibraltar, or Cretan fever, will depend upon the experience of the profession and their record of a sufficiently large number of cases drawn from the same area and presenting symptoms similar to my own. The largest number of cases came under my notice in October of last year. That they were due to the entrance into the system of some poison there can be no doubt and the success of the treatment, it seemed to me, depended in very large measure upon the fact that they were regarded as a peculiar form of malaria and received quinine.

The hæmaturia which was present in four of the cases deserves more than simple mention. Davidson¹ speaks of hæmorrhages and spongy gums as sometimes met with in the relapsing fever of Cyprus—the spongy gums, be it remembered, in cases of genuine relapsing fever, where scorbutus was out of the question. Many of these cases, however, were attributed by Davidson to malarial poisoning. Hirsch² draws attention to the Danubian basin as the seat of malaria. At certain places along the river malaria, it would appear, is always endemic. In what is called "remittent" malarial fever there is hæmaturia and in some instances jaundice. Besides, there is another form of malarial fever—the typho-malarial. It occurred among the American troops during the War of Secession. Woodward, whilst stationed with the army on the Potomac, noticed the peculiar form which malarial poisoning assumed amongst the soldiers, and drew attention to a series of symptoms not unlike those met with in typhoid fever—viz., diarrhoea, abdominal tenderness, meteorism, delirium and dry brown tongue. The cases did well as a rule when treated by quinine. In the few that died post-mortem examination showed only a catarrhal condition of the mucous membrane of the intestine with swelling of Peyer's patches. The spleen was enlarged to a greater extent than in typhoid fever; so also was the liver. His description of the disease might apply to some of my own cases, but in using the term typho-malaria we would be now, as then, no nearer a solution of the question. It is quite possible that impure drinking water induced illness and developed symptoms of an enteric type, upon which was grafted malarial infection. I am more inclined to regard these cases, however, as simply hæmorrhagic forms of malarial poisoning, there having been in nearly all of them blood in the urine and stools, and in one spongy gums. This is just the form of malarial poisoning in which we may or may not have typical ague seizures. Febrile exacerbations may not occur, and yet malarial hæmaturia in certain localities and in certain seasons of the year may be so severe as to prove fatal.

Newcastle-on-Tyne.

THE SKIN ERUPTIONS WHICH OCCUR IN SEPTICÆMIA FOLLOWING SCARLET FEVER AND DIPHThERIA.

By N. S. MANNING, F.R.C.S. IREL.,
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IN 2.1 per cent. of nearly 6000 cases of scarlet fever and diphtheria treated under my care in the City Hospital, Birmingham, and in 4.8 per cent. of the cases under five years of age a condition supervened which was accompanied by a characteristic skin eruption, increase of temperature, wasting of the tissues and loss of power, and which, on account of the high mortality that followed it, may well be considered one of the most important complications that can become superadded to these diseases. The exciting cause of the condition or disease appeared to be the absorption into the system of a toxic agent or poison which was engendered by tissue necrosis taking place in septic surroundings; and though in the cases at present under consideration it followed the process of ulceration which took place in the throat, nose and nasal cavity in scarlet fever and diphtheria, it may also be brought about by many other conditions, such as sloughing

¹ *Geograph. Pathol.*, vol. i., p. 266.

² *Geograph. Pathol.*, vol. i., p. 210 (New Sydenham Society).

and suppurating burns or other wounds, in the puerperal state, in the third week of enteric fever, or, broadly speaking, by purulent infection from any cause. The following figures show in a tabular form some particulars as to the numbers, ages and mortality in the cases under notice.

Age.	Total number of cases treated in the hospital.	Number of cases of septic rash that occurred.	Number of deaths.	Percentage occurrence on the total numbers treated.	Percentage mortality of the cases attacked.
Under 1 year	64	12	11	19·0	91·6
„ 2 years	391	41	35	10·4	85·3
„ 3 „	587	33	27	5·6	81·8
„ 4 „	577	15	14	2·6	93·3
„ 5 „	671	9	3	1·3	33·3
Total under 5 years	2290	110	90	4·8	81·8
5 years and upwards	3622	18	12	0·5	66·6
Total	5912	128	102	2·1	79·6

As will be seen in the above table the age of the patient exerted the most powerful predisposing cause in determining the disease; nearly 60 per cent. of the cases were under three years old. The reason of this is very obvious when we consider how difficult it is to keep the throat lesions in patients of such tender years in anything like an aseptic condition, and how prone they are to swallow the discharge that exudes from the ulcerated surfaces. The attack came on usually during the second week of the scarlet fever illness; in 80 per cent. of the total cases it was noticed from the seventh to the fifteenth day, but it may appear as early as the fifth day or as late as the thirtieth. The invasion was gradual rather than sudden, and in many cases was even insidious in its onset. As a rule, however, in severe cases from twelve to twenty-four hours before the eruption came out there was an increase of temperature, with restlessness, sleeplessness, and an exacerbation of the throat lesions. The eruption appeared as red or dark pink coloured spots or blotches with well-defined margins in the skin over prominent bony points, such as the ankles, finger-joints, elbows, outer sides of the feet, and the extensor surfaces of the toes; occasionally a crop of small red papules on the arms and legs preceded the blotches. The spots or blotches when first seen varied in different cases from about the size of a sixpenny piece to large irregular-shaped patches; they disappeared on pressure and quickly reappeared when the pressure was removed. In about 80 per cent. of the cases the eruption appeared in the order given above, but sometimes it was first seen on the face, in which situation the most usual distribution was the upper eyelids and malar eminences. I might remark here that I have found this distribution of the rash so uniform in its early stages and so characteristic of the disease that in cases where I suspect its occurrence I look most carefully in these situations for its existence.

In many cases, after the appearance of the rash, what seemed a halt in the progress of the disease took place; no manifest change occurred for some days or the spots faded and again appeared, and in some slight cases the disappearance was permanent. In severe cases this check, as a rule, was not seen. The rash extended rapidly over the limbs, in some instances as large irregular-shaped maculæ, red or pinkish in colour and slightly raised above the level of the skin; in others in the form of diffuse patches of various shapes and sizes. It usually invaded the trunk on the second or third day from its first appearance, in which situation the macular or blotched form was replaced by a diffuse erythema. About this period of the eruption—second or third day—it also became diffuse on the limbs by the rapid increase in size and confluence of the spots. In a less numerous class of cases the eruption remained macular for a longer period; but if the attack were severe and the patient survived long enough, the tendency always was for the rash to become general. The time which the eruption took in reaching its maximum point of development is thus seen to have varied considerably in different cases, and when this was attained a decline or fading took place, which was followed by a profuse desquamation of the cuticle; this subsidence, scarcely ever permanent, was quickly followed by a recrudescence; the temperature, which usually declined with the fading of the rash, again went up, and in from twelve to twenty-four hours

a second eruption came out, which more rapidly than the former spread over the body. There was also an aggravation of all the local and general symptoms, and the cycle was completed by another desquamation of the cuticle. In this way I have been able to raise three distinct parchment-like layers of the epidermis on the hypothenar eminence of a child's hand which could be turned over like the leaves of a book—(1) scarlet fever desquamation, (2) septic fever, (3) relapse of septic fever.

The temperature was essentially irregular and was seen to vary much in different cases. Usually, however, the temperature curve was within the limits of from 100° to 104° F., but even in the same case the extreme limits often varied from 98° to 105°; the diurnally up and down or “spiked” temperature seen in enteric fever or hectic conditions was never observed. As already mentioned, a defervescence took place in many cases with the decline of the rash, which was followed by a rise before each recrudescence, and at this point, which one might term the invasion of the relapse, death frequently occurred. The heart's action was rapid, beating from 130 to 200 per minute. Nervous disturbance indicated by such symptoms as restlessness, sleeplessness and muscular tremors was commonly met with, and in some instances marked drowsiness prevailed. The progress of the disease was always accompanied by rapid wasting, in a few days the sufferers presenting quite an emaciated appearance. In cases where the urine could be obtained for examination albumen was sometimes found. Septic pneumonia, diarrhoea, or obstinate vomiting frequently supervened where the patient survived beyond four or five days, and rapidly proved fatal. To the welfare of the patient the condition of the throat was most important all through the attack; the ulceration spread over the tonsils, pillars of the fauces, pharynx and soft palate, and in many cases to the tongue and gums, engaging the deep tissues in the region of the throat, and often producing large ragged perforations of the soft palate. There was also a profuse discharge of muco-pus from the throat and nostrils and a foul-smelling colourless otorrhœa. In fatal cases, as the end approached, the secretions of the mouth dried up, sordes formed on the teeth, the tongue became glazed, the lips cracked and bled on the slightest touch; there was also suffusion of the conjunctivæ and more or less fixation of the eyeballs, which gave the eyes a staring expression, the patient finally lapsing into a marked ataxic condition. When this stage was reached the sufferers presented a very repulsive appearance and in addition a sickly odour pervaded their immediate vicinity. The duration of the attack varied greatly, the extremes in fatal cases being from two to thirty days; but between 70 and 80 per cent. died during the first week. In non-fatal cases the eruption disappeared in over 80 per cent. within five days, in 15 per cent. from five to ten days; in one case it remained until the fourteenth and in another until the twenty-second day. The most constant morbid appearance found post mortem was an inflammatory zone one or two lines wide round the attached margin of the mitral and tricuspid valves of the heart; in this situation in many cases the endocardium was found thickened and injected. The post-mortem coagulation of the blood seemed to take place in a normal way. More or less congestion of the lungs was seen in every case, and in cases where pneumonia was present the anatomical appearances of that disease were found; the kidneys also were usually congested and, where microscopic examination was made, “cloudy swelling” was seen. In the other organs no changes were noticed.

The treatment may be divided into prophylactic and curative. In the former much can be done by careful attention to the state of the throat; the removal of the exciting cause by keeping the ulcerated parts in as clean and aseptic a condition as possible is all important. This, in my experience, can best be attained by irrigation. The use of caustics or other irritants during the inflammatory stage cannot be too strongly deprecated. Healthy surroundings, proper diet and good nursing are of course most essential. In the way of curative treatment little can be done except to follow up the lines already indicated and support the patient's strength by every means possible. The administration of drugs, except for the relief of special symptoms, I have not seen attended with any beneficial results.

The question of diagnosis is most important, but want of space prohibits me going into the subject fully. The disease with which this condition is most frequently confounded is scarlet fever, and indeed its occurrence even during an attack of this exanthem is regarded by most authorities as a relapse of the disease. The invasion, the distribution of the rashes in

the early stage and the course which the two diseases run are so entirely different that a diagnosis is easily made; moreover, in cases that arise in the course of other diseases, in addition to the differences just stated, there is an absence of the throat lesion and that characteristic condition of the tongue—signs that should guide us almost more than any other in determining an attack of scarlet fever. There is no doubt but that the eruption, when fully developed, resembling so closely as it does the intense or blotched rashes often seen in scarlet fever, and the subsequent desquamation combine to render a correct diagnosis difficult if the primary symptoms have not been carefully observed. It is also confounded with measles, rtheln, eruptions produced by drugs, urticaria, erysipelas, &c., and although the rash sometimes resembles that of measles and rtheln, by careful attention to the invasion, the early distribution of the eruption, and the absence of the catarrhal symptoms found in these diseases—more especially measles—it is always easy to arrive at a correct diagnosis. In the other conditions named the differences are so many and so manifest that a diagnosis should present no difficulty.

Birmingham.

TWO CASES OF RETRO-PHARYNGEAL ABSCESS IN INFANTS.

BY W. F. BROOK, F.R.C.S. ENG.

THE notes of the following two cases may be of interest, as they not only closely resemble the cases which form the basis of Mr. Bilton Pollard's paper on the above subject in THE LANCET of Feb. 13th, but also bear out his remarks as to their etiology and treatment. I believe I am right in saying that these were the only two cases of the kind which presented themselves at the Hospital for Sick Children, Great Ormond-street, during the fourteen months that I was house surgeon there.

The first case—M. G.—, a female child aged one year and seven months—was brought to the hospital on Oct. 13th, 1890, suffering from difficulty of breathing and swallowing and a "lump" in the neck. The history given was that a swelling had been noticed in the neck a fortnight previously, which gradually increased in size. Breathing and swallowing became difficult and continued to get worse until admission. She had had whooping-cough the previous February, since which she had suffered from discharge from the nose. There had been no pain or stiffness in the neck before the swelling was noticed. Four months previously she fell from a chair, striking her head. On examination, in the right side of the neck was a diffuse non-fluctuating swelling, situated behind but extending under the sterno-mastoid and pushing it and the carotids forwards, with a more defined lump in the centre, apparently a gland rendered prominent by the subjacent swelling. The right tonsil was seen to be pushed towards and beyond the mid line, obscuring the view of the parts beyond. Chloroform was given, with a view to making a more thorough examination and doing what might be required. A gag was introduced into the mouth for the more complete examination of the pharynx, when the breathing suddenly stopped, the child becoming cyanosed. The trachea was immediately opened and the patient brought quickly round by artificial respiration. With the tube in the trachea, the swelling in the pharynx could be examined at leisure. It extended from the right tonsil across the back of the pharynx nearly to the left. Its upper limit was at the base of the skull, its lower limit below the level of the glottis. It was so tense that fluctuation could barely be made out. Although, had the abscess been opened from the pharynx, the presence of the tracheotomy tube would have removed the danger of asphyxia, the impossibility of keeping the cavity aseptic under these conditions led me to prefer to drain it from the neck. Accordingly a small incision was made along the posterior border of the sterno-mastoid and the dissection continued beneath it until a wave of impulse could be distinctly felt between a finger at the bottom of the hole thus made and another on the swelling in the pharynx. With a blunt director and a pair of dressing forceps the abscess was then speedily emptied, the swelling in the pharynx at once subsiding. No bare bone could be felt by the finger introduced into the abscess cavity. The latter was washed out with perchloride of mercury (1 in 2000), a drainage tube introduced, and the incision closed at

the ends with sutures. The tracheotomy tube was removed and the wound sutured also. The breathing was now in every respect normal. The temperature, which on admission was 98.8, on three occasions within the next few days reached 100 F. With a view to keeping the injured parts at rest the patient was fed for the first twenty-four hours per rectum. The discharge from the wound in the neck was slight and the tube was gradually shortened and removed entirely on the seventh day. The tracheotomy wound did not heal by first intention, but gave no trouble. The child was discharged on Nov. 3rd, with both wounds healed and no sign of spinal caries.

The second case was that of W. L.—, a male child aged six months. He had been ill a fortnight with a "swelling in the neck and wheezing." There had been a slight discharge from the nose during the previous week, but not any discharge from the ear. The history did not suggest spinal caries or syphilis, but there was a history of phthisis on the father's side. On admission on Dec. 23rd, 1890, the notes describe him as an emaciated and rickety child, breathing with some effort. The crying was feeble. There was retraction of the lower ribs and to a less degree above the clavicles. In the neck on the left side was a fluctuating swelling beneath the sterno-mastoid. In the upper part of the pharynx, on the left side, was a fluctuating swelling extending up behind the soft palate and across the middle line. As the sterno-mastoid muscle seemed unusually wide and thin and pus was evidently immediately beneath it, I opened the abscess by a small vertical incision through the muscle. The finger introduced through the opening passed behind the carotid sheath and the pharynx beyond the middle line, and could feel the base of the skull above. There was no bare bone to be felt. An inch and a half of small drainage-tube was inserted and the cavity washed out with perchloride of mercury (1 in 2000). Immediately after opening the abscess breathing was relieved and the cry became stronger. In three days' time the tube was removed and the child was discharged on Jan. 4th, 1891.

In both these cases there was a history of irritation and inflammation of the nasal or naso-pharyngeal mucous membranes, and in neither was the abscess associated with cervical caries or of tonsillar origin. The analogy between this form of retro-pharyngeal abscess and subacute or chronic ischio-rectal abscess so common in feeble and cachectic subjects is very striking. Both occur in weakly and debilitated individuals and seem to result from apparently slight irritation of the adjacent mucous membranes, and in each case, too, it is in the submucous tissue that the suppuration occurs and not in glands (or at all events those demonstrated in naked-eye anatomy) which drain the corresponding area of mucous membrane.

The above cases were under the care of Mr. Morgan and Mr. Owen respectively, to whom I am indebted for permission to publish them.

Swansea, S. Wales.

ANGEIO-LEUCITIS AND DEATH FROM INFECTION BY MICRO-ORGANISMS DERIVED FROM THE ADHESIVE SURFACE OF BUNION PLASTER.

BY A. S. MYRTLE, M.D. EDIN.

MRS. —, aged forty-nine, enjoyed good health and led an active out-door life since childhood; regular in all functions; she had seven children, the youngest being aged thirteen. About the 16th of May, to protect a bunion on the right foot, she applied a felt plaster; this was worn for a fortnight, when the bunion got red and painful and a small ulcer was found on the great toe, where the hardened gelatine had worked its way through the skin. The sore was a quarter by one-eighth of an inch. About the end of May she felt "seedy," listless and nervous; her appetite had failed, and her nights were disturbed. She then consulted me. I found her, as I thought, very much below par; she was worrying herself about going to the Continent. I advised her to remain at home and prescribed tonic, and, as the bunion was inflamed and painful, ordered lead and opium lotion. The ulcer, which looked sluggish and void of healthy granulations, I covered with iodoform and salicylic cotton-wool, and ordered the foot to be kept at rest.