

artificial one; it includes two varieties—a bullous eruption, generally seen on the hands and feet of infants affected with congenital syphilis and the syphilide known as rupia. The congenitally syphilitic eruption hardly belongs to our subject. I will not notice it further than to remark that it might be confused with scabies, which eruption, when occurring in infants, often gives rise to bullæ about the hands and feet. Marked syphilitic cachexia always accompanies the bullous eruption of infants; it is therefore often followed by a fatal result. Bassereau admits a bullous form of syphilis attacking the hands and feet of adults, subjects of acquired syphilis; it is, however, extremely rare. I may state that I have once observed large egg-sized bullæ on the hands, accompanying diffuse syphilitic infiltration associated with much œdema; the whole cleared up under iodide of potassium.

It remains, then, to consider rupia. This may be looked upon as a specialised form of the deep ecthymatous eruption; there is the precursory circumscribed infiltration, the succeeding pustule attains large dimensions, and so acquires the name of a bulla; finally, the peculiar concentric lamination of the crust, previously described, attains great perfection and results in the limpet-shell and oyster-shell like formations, peculiar alone to syphilis. The subsequent cicatrization and serpiginous ulceration may be exactly similar to what was mentioned in describing the deep ecthymatous syphilide. Pustular syphilis, to which rupia properly belongs, may be looked upon as betraying severe constitutional taint; this especially applies to the deep ecthymatous and rupial eruptions. These rarely give trouble in diagnosis, because of the almost constant existence of other grave syphilitic manifestations, such as perforation of the palate, bone necrosis, orchitis, &c. The French have described a pigmentary syphilide. It is little known in this country. It is said to be a mottled pigmentary change unconnected with any previous lesion of the surface; it affects women in a vast majority of instances, the neck being the favourite seat of election. It has been looked upon as a chloasma uterinum due to syphilis.

Much attention has been given lately to the subject of medicinal rashes; it is a most important one to us, as many of them bear close resemblance to the syphilides. I will just mention a few facts. Belladonna sometimes gives rise to an erythematous or erythemato-papular eruption which might be mistaken for macular syphilis; dilatation of the pupil would probably be present. The eruptions caused by the bromides may occasionally closely resemble syphilides. Weir Mitchell has reported coin-sized ulcers due to bromide of potassium which looked much like rupia. Bromide acne is well known; it may occur in any part of the body. Duhring has described a maculo-papular bromide eruption resembling syphilis; but the most interesting bromide eruption is that known as confluent acne. Its bossy, suppurating elevations might well be mistaken for syphilis. Bullous and varicelliform eruptions have been described as having been caused by bromide of potassium. Chloral gives rise to a maculo-papular eruption accompanied by severe itching.

Copaiba often gives rise to an eruption soon after it is taken; there is febrile reaction, and the eruption is said to be a characteristic papulo-erythema, preferring the hands, arms, knees, feet, and abdomen. In diagnosing it from macular syphilis its sudden outbreak, itching, and seats of election are points of importance; the copaiba odour of the skin is said to be always present. The cubeb rash does not appear to be so common; it is a papular roseola.

We come to the most important group, the iodide rashes.¹ Bumstead speaks of an iodic roseola attacking the forearms or covering the entire surface. The pustular eruptions resemble the bromide pustular form. There is an iodide acne, and an eruption like the confluent acne just named. A case is reported which closely resembled the tuberculo-pustular syphilide, the mammillated surface shown when the crust was removed was quite different from the purulent deposit which would have been found if the eruption had been syphilis. Quinine and salicylic acid give rise to eruptions which are perhaps true urticaria.

Before concluding I have to acknowledge my sincere thanks to Mr. T. Colcott Fox and Dr. Stowers for lending me many excellent drawings in illustration of the subject.

¹ This drug is frequently given in secondary syphilis. An iodide eruption appears which may be mistaken for a fresh development of syphilis. More iodide is prescribed, and serious harm is done to the patient.

ON A CASE OF
SPINAL INJURY EXHIBITING THE PHENOMENON NAMED "PARADOXICAL CONTRACTION."

By JAMES MACKENZIE, M.D.

THE following case occurred in the practice of Dr. O'Meara of Burnley, to whom I am indebted for the opportunity of taking the following notes.

J. W—, aged thirty-two, coal-miner, on Oct. 31st, 1882, being at work in a mine, was in the act of rising from a sitting posture when he was felled to the ground by a stone weighing from thirty to forty pounds falling upon him, from a height of four feet. He was at once rendered insensible. Another miner, who worked about twelve yards off, heard a scream and ran towards the injured man, whom he found lying face downwards, with the stone on his back. His companion removed the stone and ran for assistance. As W— was being carried out of the pit consciousness returned; he then felt as if both legs were dead, and any jerking movement caused great pain in his back. When the attendants were taking off his boots he felt one of his legs momentarily "sting" with pain, but the "dead" feeling immediately returned, and has since persisted.

Nov. 4th: To-day I saw the patient for the first time. He lies in bed slightly propped up, and inclined to the right side. He talks in a hoarse whisper, this being due, according to his own statement, to the fact that the act of speaking or of coughing produces great pain in his back. He complains, even in the absence of exertion, of a pain in the small of his back, which shoots downwards and forwards to the left groin. The patient also suffers from a pain around his abdomen, which he likens to the feeling produced by a tight string being tied around him. The sensibility to touch, tickling, pain, and temperature is absent in both legs, but the thermal and tactile senses are good in the soles of the feet. When the soles are tickled the patient feels as if pins were being stuck into them instead of the normal sensation. After moving about the feet and prosecuting other examinations, tickling no longer produces the painful effect just described, but is now felt as a common touch. There is almost complete loss of power in both legs, although the patient with a great effort can move slightly both the toes and the feet. The patellar-tendon reaction is present, though not exaggerated, at both knees. There is great pain on pressing the iliac bones, the lumbar and lower dorsal vertebræ. The acts of micturition and defecation are accompanied by much pain, but in other respects they are now normally performed, although the catheter had to be used for the first twenty-four hours after the injury.—6th: The pulse is 60, and the temperature normal. There is a band of partial anæsthesia encircling the right side, extending in depth from the level of the ninth rib to the iliac crest. From the iliac crest to the upper part of the thigh the skin is hyperæsthetic. Below this the skin is anæsthetic, and the anæsthesia gradually becomes more profound, till below the knee it is absolute. On the left side there is also an encircling band of anæsthesia extending from the sixth rib to the eleventh. Below this the skin becomes slightly hyperæsthetic as far as the thigh. At this point of the examination the patient was suddenly seized with severe pain in the back, and his whole body was thrown into a state of tetanic spasm. During the spasm the head was retracted, the trunk became arched, and the face wore an expression of great suffering. Several such shocks followed one another at intervals varying from a few seconds to a few minutes. After a time they gradually subsided, leaving him greatly prostrated. He has had several such attacks within the last few days. The legs are equally warm; beads of perspiration stand out on the feet; there is a constant feeling of nausea and uncontrollable attacks of retching, and the hoarseness still continues. The bowels are costive, and great pain is felt in defecation and micturition. I am unable to get a clear idea of the locality of this pain, owing to the patient's inability to talk and his dread of examination.—21st: Pulse 60; temperature natural; respiration 24. There is complete anæsthesia in both legs below the middle of the thigh, and the patient has no voluntary power over any muscle in

either leg. On producing dorsal flexion of the left foot by sharply elevating the ball of the great toe, the muscular parts of the tibialis anticus and extensor communis digitorum can be found contracting after a brief interval of a few seconds. The tendons stand out tense and firm, and great resistance is offered to passive plantar flexion of the foot. After a short interval, varying from one to five minutes, the muscle gradually becomes relaxed, and the foot becomes extended on the leg. The left leg is rigidly held in extension at the knee-joint, and after a continued effort to passively flex it, the joint gradually yields, and a limited extent of free movement is permitted. If the leg be thus flexed upon the thigh, and then sharply extended, the quadriceps extensor can be found firmly contracting, and retaining the leg in its extended position for a few minutes, in spite of all efforts to overcome its resistance. If the leg again be passively flexed, and the patellar tendon gently tapped, slight contractions may be got in the quadriceps. If, however, a smart tap be administered to the tendon, there is a sudden, strong contraction of the muscle, and the limb for a time remains rigidly extended. If the limb, when the quadriceps is not thus tonically contracted, be gently raised (flexing the extended leg upon the pelvis), the rectus femoris alone will be found contracting, and will maintain the limb in its raised position. In like manner, by passively abducting or adducting the leg, or putting it through any other movement, it will remain for a short time in the position in which it has been passively put, and the muscles in some cases can be felt gathered up into knots. After a short interval the limb slowly gravitates till supported by the bed. When the limb is placed in any of these positions, the patient (his eyes being shut) is unable to tell in what position it is placed, thus showing abolition of muscular sense. The above symptoms are also exhibited in the right leg, though not to so marked a degree.—Jan. 4th, 1883: The general condition of the patient has decidedly improved. He speaks naturally, is able to retain his food, and the pain in the back is much less severe; but there is still a little pain in defecation and micturition, and tenderness on pressure over the lumbar and lower dorsal vertebræ. An inguinal hernia has developed on the left side. The anæsthesia and hyperæsthesia of the abdomen have partially disappeared, but the anæsthetic condition of the skin of the legs still persists. On the legs being tested with electricity, there was found insensibility to both interrupted and constant currents. The paradoxical contraction can be set up in the left leg in a similar manner to that described on Nov. 21st, while the muscles of the right leg exhibit it more readily than heretofore. The muscles having been tested to ascertain their response to electrical stimulation, the following is the result:—They all respond readily to the interrupted current. The muscles of both legs require many cells (forty to fifty) before they can be got to respond to the constant current. The result in the majority merely shows a weak contraction to the negative pole during closure (Ca. Sc.). In some instances (e.g. tibialis anticus and extensor communis digitorum) the muscles, after being relaxed, simply exhibit Ca. Sc.; but immediately after the paradoxical contraction has relaxed they exhibit not only Ca. Sc., but also An. Sc.—that is to say, a weak contraction during closure with both negative and positive poles.

When I last saw the patient (March 28th) he was able to get about by the aid of a pair of crutches. His method of progression consisted in projecting his crutches a few feet in front, then resting himself upon them he swung his legs, pendulum-like, forward; then he moved his crutches again to the front and repeated the process. All the conditions remained as above, except that there was scarcely any hyperæsthesia, and the right foot was retained permanently in a state of extreme talipes varus. There was also a slight response to the tickling of the soles. He could voluntarily, but feebly, move his right toes; but when he tried to move his left the effort was unavailing, so far as his left toes were concerned, but he would unconsciously move his right instead. Micturition and defecation were performed more comfortably.

Remarks.—The paradoxical contraction is the most interesting feature in this case. Westphal first directed attention to this curious phenomenon. In some respects he considered it to be the opposite to the tendon-reflex contraction, remarking that it occurs in muscles that rarely if ever exhibit the tendon reaction.¹ But it will be observed

in this case that it not only occurs in muscles (such as the quadriceps extensor cruris) that exhibit the tendon reaction most readily, but is also associated with an exaggerated condition of tendon reaction. The pathological changes giving rise to this condition are probably situated in the nerves, rather than in the cord itself. From the fact that the lumbar vertebræ were chiefly implicated, and also that the symptoms were symmetrical, it is possible that the nerves were injured after they had left the cord, but while in the canal. The fact that the rectal and urinary centres escaped injury would favour the idea that the cord itself was not seriously implicated.

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A RAPIDLY FATAL CASE OF ARSENICAL POISONING.

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THE following case presents several points of interest, the chief, however, being the rapidity with which a fatal result ensued.

Richard H—, aged fifty-one years, a man in moderate health, although not robust, swallowed by mistake, at 8.30 P.M. on Feb. 27th last, nine drachms of a preparation for softening the skin of the hands, supposed to consist chiefly of glycerine, which was contained in a small flask-shaped spirit-bottle. He was seized with a feeling of faintness and collapse, and slight epigastric pain. He was brought without much delay to the Middlesex Hospital, arriving there about 9 o'clock; and it was stated that he had not vomited. His skin was cold, and his face bedewed with clammy sweat; pulse slow and very feeble; respiration shallow; pupils moderately dilated, but acting to light. He presented generally the appearance of collapse, and complained of headache and pain at the epigastrium, with a sense of constriction across the chest. He was quite conscious, and kept spitting to clear his mouth of viscid mucus. An emetic of mustard and water was immediately administered, but did not induce vomiting, and the stomach-pump was then used, the stomach being well washed out. The matter removed from the stomach appeared to consist almost entirely of the mustard and water which had been given as an emetic. Some brandy was then administered, and he was removed to the ward and put to bed between warm blankets, hot bottles being also applied. Notwithstanding, he speedily became pulseless, and although stimulants were freely given, he rapidly sank and died at half-past nine o'clock, one hour after swallowing the fatal dose.

At the post-mortem examination made by Dr. Fowler, the mucous membrane of the larynx was found moderately congested; the trachea was brightly injected throughout, and, with the larger bronchi, contained some very viscid mucus. The lungs were emphysematous and engorged. The right cavities of the heart contained some fluid blood and clots, the left were contracted and nearly empty; the valves and muscular substance were normal, but the endocardium of the left ventricle showed numerous ecchymoses. The liver and kidneys were congested, the spleen normal. The stomach contained about six ounces of turbid fluid, consisting apparently of brandy, mustard in solution, and viscid mucus. The mucous membrane was intensely injected; there were also a very few small ecchymoses, but no erosion of mucous membrane. The duodenum and jejunum contained pale pulaceous matter; the contents of the ileum and colon were brown and semi-solid. The bladder was contracted. It was, of course, sufficiently obvious that death was due to poison, but there seemed nothing either in the symptoms or post-mortem appearances to point conclusively to the particular poison, and hence at the inquest which was held an analysis of the stomach and its contents was ordered. This resulted in the detection of arsenious acid in large quantity, both in the matter removed from the stomach at the post-mortem examination, in the tissues themselves, and in the small quantity of fluid left in the bottle from which the unfortunate man had swallowed the poison.

What remained of the latter, together with the quantity which the bottle was known to contain by a mark left on it

¹ Ross: Diseases of the Nervous System, vol. ii., p. 225.