garded it as of rather an extraordinary character. Some few years have now elapsed since the mode of wearing fringes of hair over the feminine forehead became fashionable, and nearly a decade has passed since I was hastily summoned to a lady who had accidentally burnt the cornea of one of her eyes with a pair of curling tongs. On separating the eyelids I found such an extensive white eschar occupying the centre of the pupillary area that I gave a very doubtful prognosis, but to my great relief the cornea regained its transparency in less than a week, showing that the burn was very superficial and had involved little more than the epithelium, though it was evidently in more senses than one a touch-and-go affair.

Since then I have had four similar cases, and I have ascertained that the accident always occurs in the following manner: In removing the curling iron a few stray hairs occasionally remain caught between the blades; the lady involuntarily turns her wrist in order to detach these, and the extreme end of the heated iron is thus for a brief moment brought into contact with the anterior surface of the eye; "*hinc illæ lachrymæ*."

In one only of the five cases has there been any permanent blemish. The accident in the eighth case was a very sad one, for it involved the sudden and complete loss of an eye in a bright handsome lad, aged 16. I was urgently summoned to Eton on a Sunday morning, and found that on the previous afternoon the patient had played his first game of racquets, and, being ignorant of the possible dangers, had omitted to keep his racquet in front of his face at a critical moment. He had received a crushingly severe blow on the right eye from the small hard ball, and the globe was instantly ruptured. Nature has, in the bones of the orbit, provided a fairly sufficient protection from the blow of a cricket ball or the fist of an inebriated husband, but a racquet ball finds the eye practically defenceless. In the present case the sclerotic had been extensively ruptured, a large quantity of vitreous had escaped, and the eye had almost collapsed. There was of course no alternative but immediate enucleation. I was much pleased with the forethought shown by the boys who were present when the accident occurred. They were four in number, and, after a brief consultation, they decided that one should go for a doctor, a second should return to the house to have all in readiness there, the third went for a conveyance, and the fourth remained with the injured boy.

The two cases with which I propose to conclude this short paper have already found mention in the *Transactions* of the Ophthalmological Society: but they are of so unusual a character that I venture to give them brief record here. A lady consulted me about twelve years ago respecting a painful shrunken globe which had been severely inflamed for more than a year, and was already threatening the safety of her sound eye. I had no hesitation in strongly urging the immediate removal of the peccant organ, and, on proceeding to perform the operation, as I attempted to divide the optic nerve with a pair of curved scissors, I was aware of some hard substance which prevented the blades from closing. This proved to be a small metal dart about an inch in length, with a tuft of coloured wool attached to its thicker extremity, the thin pointed end having penetrated some distance into

the orbit. The patient's husband, who was present, shared my astonishment, and volunteered the following explanation: he said that about fifteen months previously he and his wife had amused themselves during a tedious railway journey with the child's game—always a very dangerous and objectionable one—of puff and dart. On one occasion, after he had blown a dart rather forcibly, his wife exclaimed, "Pray be more careful, for I fancy you grazed my eye," and on touching the latter with a handkerchief a faint bloodstain was perceptible. They associated the subsequent inflammation and loss of sight with this blow, but had not the slightest idea that the weapon had absolutely buried itself in the wounded organ.

The concluding case is that of a well-known actor now deceased. He was sustaining the part of "Richard III" at Drury Lane Theatre, and had reached the final desperate combat which precedes the fall of the tyrant and of the curtain, when the actor who played the part of "Richmond," carried away by the excitement of the moment, entirely forgot the well-rehearsed details of the fight, and suddenly delivered an upward thrust when he ought to have made a downward cut. The actor, though he had throughout his career been celebrated for his skill in making points, on this occasion failed to take one, and received a severe flesh wound in the face involving the left eye. I did not see him till he was almost convalescent, and I then found that the weapon had driven an eyelash into the anterior chamber, whence I had considerable difficulty in extracting it, but, wonderful to relate, had failed to wound the lens, and the actor had thus performed an operation which, if a similar instrument had to be employed, might well have baffled the skill of the most experienced among ophthalmic surgeons.

ON AN EPIDEMIC SKIN DISEASE.

[WITH A COLOURED PLATE.]

BY THOMAS SAVILL, M.D.LOND., D.P.H.CAMB,

Medical Superintendent of the Paddington Infirmary.

THE following are the notes of the cases as they were taken from day to day at the bedside of the patients. Notes which have no possible connection with the eruption have been omitted for the sake of brevity. The coloured plate is from a sketch made during the height of the first relapse. It shows well the second stage of the eruption, the crimson indurated state of the skin, so great in the eyelids that they cannot be opened, and the loose flakes which cover it.

CASE I. (See coloured plate). *Morbus Coxæ*; complicated by *Epidemic Dermatitis*, attended by *Profuse Eruption* and *Purpuric Spots*—J. G., aged 71, a gardener, admitted July 16th, and still in the Paddington Infirmary. Family history presents nothing of importance. Previous history: Four years ago was in the infirmary for four months with an attack of gout in the left hand, determined by injury; no other previous illness. Present illness: One month ago put on a damp shirt; next day found his right hip painful and stiff. On admission he was found to be suffering from inflammation of the right hip joint. Physical examination of organs revealed nothing abnormal. Urine, specific gravity, 1016; alkaline; no albumen; no deposit. Temperature normal. July 17th: Ordered beef-tea diet; terebinth. Chian., gr. i, in pill, which he took till about August 13th. 24th: Diet changed to meat. 31st: Has improved considerably in his power of walking; gets up in the evening. August 14th (first day of eruption) Slight redness and furfur on forehead, left ear, and left side of neck; is very irritating. 18th: Ordered ung. zinci to face, skin of which now shows considerable thickening; oedema round eyelids. 21st (eighth day): Feels better, but face is the same. Pulse 90, fairly regular. 28th: Face the same, no rash elsewhere. Ordered lotio calaminæ. September 4th (twenty-first day): Forehead red and desquamating. A good deal of seborrhœa capitis. Slight papular rash on right shoulder, points of papules desquamating mostly without becoming vesicular, but sometimes they show vesicles. 11th: Face in *statu quo*. Eruption has not involved other parts than face, neck, ears. Ordered lot. creolin. 14th (thirty-first day): Diet altered to beef-tea. October 9th (fifty-sixth day): During the past few weeks matters have remained much the same, the thickened crimson surface continually shedding its epidermal layer. Eruption confined to upper part of body, face, and trunk; a little now appearing on upper arms, posterior surface. Urine acid, clear, 1012; very faint trace of albumen. 21st (sixty-eighth day) Hair thinning. Face a little better; raised scaly patches round neck. Ordinary exuding and scaling flat patches on left upper arm, size of a five-shilling piece and larger. Very much itching. Legs not affected. 23rd: The eruption now looked something like ordinary vesicular eczema in patches, forming crusts, only there is much more thickening of the skin on neck and face, both upper arms right and left, and behind right knee, also in right groin. 28th: Urine 1012, acid, clear, no albumen. Ordered ung. creolin. October 29th: Relapse on face. Swollen. Copious exudation from forehead, cheeks, and ears. Vomited this morning. Extreme loss of appetite, but asthenia not so marked as in some cases. Temperature, morning, 98.6° F.; evening, 99.4° F. 30th (seventy-seventh day) Very free exudation from both upper arms, face and neck, groins. Some patches down back, and scattered over front of body. Contents of vesicles are semipurulent. None on feet. Patient has muco-purulent conjunctivitis. Face and left arm swollen and skin thickened wherever the blotches are. Acute crop of vesicles on thighs; few on legs. Ordered whisky 5j. Treatment: Ordered pulv. amyli 2 parts; zinci oxidi 1 part to exuding parts. Appetite little better to-day. Face feels smarting, "jumping and hot." Temperature, morning, 98.8° F.; evening, 99.4° F. November 3rd: Sour smell from patient very distinct. Temperature last evening, 102.0°; this morning, 98.4°. The blotchy character is still very marked; many fresh blotches have appeared, each one independent of the other. Ordered lot. sodii bicarb. gr. ij to 3j for eyes. 4th: Coloured sketch made to-day, eighty-second day of eruption, showing first relapse at its height.

6th: Eruption better. Still muco-purulent discharge from eyes; lids oedematous. Takes food better. Temperature, morning, 97.8°; evening, 99.2°. Urine: 1009; acid, clear; no albumen. 7th: Pulse, low tension and irregular, about 90. Conjunctivæ more injected. On the whole, the dermatitis is subsiding. Ears painful, swollen, crusted. Temperature, morning, 97°; evening, 98.6°. 10th: Eyes worse, muco-purulent discharge. If it were not for the thickening of the skin, it would look like ordinary vesicular eczema, forming crusts, and going on to partial exfoliation. It is generally distributed, but remains in spots and patches, between which the skin is normal. On the legs are confluent circular plaques, partly purpuric. Exudation less profuse to-day: head seborrhoeic; complains much of cold; tongue clean and moist; pulse 104; patient seems ill. Temperature, morning, 97°; evening, 98.4°. 13th: Not taking nourishment so well. Hands tremulous; tongue clean; no more spreading of eruption. Pulse 96. Temperature 102.8° on previous evening; this morning 99.2°. Urine: 1015, faintly alkaline, clear; no albumen. 14th: The eruption has been getting better, but has now relapsed a second time, and large blotches of purpura have appeared all over both legs; in some the cuticle has given way, and blood has exuded. The backs of the thighs are covered with small purpuric patches. Is not so well; taking nourishment badly; face and eyelids very sore; complains of dryness and thirst. Took some pills last night: motion this morning loose and suspiciously purple (2 blood). Temperature, morning, 98.6°; evening, 98.8°. A photograph was taken of him to-day, ninety-fourth from commencement, eighteenth since relapse. 17th: Feels much better; tongue cleaner, eyes nearly well; face and trunk better, all dry now. The purpuric spots on legs and feet are now covered with a fresh crop of vesicles, and feel hard. Some of the crusts on the legs are bloodstained. Slight oedema of right foot. Temperature, morning, 97.2°; evening, 98.4°. 20th: Improving. Oedema of both ankles and feet. Urine: 1008, cloudy with phosphates; large cloud of albumen. Tongue clean. Temperature, morning, 97.6°; evening, 98.6°. 21st: Urine: for twenty-four hours, 82 ounces; 22nd, 62 ounces; 23rd, 55 ounces. Legs much better. Temperature, morning, 97.6°; evening, 100.8°. 25th: Patient says he feels better, but "werry weak." He has all along complained of severe thirst. This complaint "do leave one so dreadful dry." Temperature, morning, 99.8°; evening 100.8°.

REMARKS.—The first case of epidemic skin disease in the same ward (VII), occurred sixty-six days previously to his being attacked. Up to the present time the case has done fairly well, and bids fair to recover. It is worthy of note that the desquamation took place for the most part as a fine furfuraceous powder, not in large flakes. The temperature in this case averaged 98.5°. He had three elevations to 102°—November 2nd, 12th, and 23rd. It was often subnormal in the morning.

The disease came out as blotches, and preserved its patchy distribution throughout. The constitutional symptoms have been moderate, and the alimentary canal seems almost to have escaped. There was transient albuminuria. Duration longer than usual, the primary attack lasting eleven weeks, and followed by two relapses—October 29th, on face; November 17th, on legs. The purpura, which complicated the later stage of this case, has appeared in several of the cases. I have frequently noted it in the eruptions of old people, independently of this epidemic; it is probably accounted for by their proneness to vascular disease. There was a good deal of exudation in this case up to November 17th. Marked improvement dated from the time he was ordered creolin ointment.

CASE II. *Chronic Non-articular Arthritis, complicated by an Epidemic General Dermatitis: Severe Constitutional Disturbance: Gastro-enteritis: Collapse and Death* (see Fig. 1).—G. C., aged 49, gasfitter, admitted June 25th, 1891. Previous history: "Has had a drop of drink in his day," 8 pots of beer and gin per day. Injury to left foot when one year old, and foot has been weak since. Gonorrhoea seven or eight years ago, never since. "Erysipelas" in left calf, followed by "abscess" three years ago. Nine months ago pain in right knee; six months increasing pain. Swelling in joint for eight weeks, always increased by using leg. No history of syphilis. No other joint affection. *State on admission:* Looks fairly healthy. Left leg and thigh wasted. Calf discoloured, and shows scar of "abscess." Right knee swollen, synovial membrane thickened; some fluid in the joint. Heart: Right. Lungs: Slight signs of consolidation at right apex. Urine: Specific gravity 1023, acid, no albumen. Temperature: 8 A.M., 98.8°; 8 P.M., 99.4°. June 26th: Ordered Macintyre's splint, iodine paint to knee, and meat diet. 27th: Ordered pot. iod. gr. x; mist. alb. 3j once or twice daily. Temperature: 8 A.M., 98.8°; 8 P.M., 99.2°.

The history of the first part of this case refers only to the treatment and condition of the knee-joint, which was found after death to present the ordinary signs of arthritis, possibly of pyæmic origin, with lipping of the edges and erosion of the cartilages. The temperature during this time was occasionally elevated in the evening 1° to 2°, but the facts have no bearing on the eruption.

July 22nd (first day of rash): Temperature for the last four nights and mornings normal. The knee has improved under treatment, and his general condition appears good. Slight dry "eczematous" eruption on right cheek and forehead; temperature normal. Ung. cal. c. zinc. ordered. August 1st (tenth day of rash): Scattered papules on front of thighs, not irritating. 2nd: Similar rash on forearms, chiefly backs; on the face the rash has nearly gone; general health good; temperature normal. 10th (nineteenth day of rash): Face as before; still improving; papules spreading down legs below knee; each papule becomes crowned with a small scale, and sometimes shows a tiny vesicle. 14th: No

rash on trunk, except a few vesicles over each shoulder blade and across loins; there are numerous small papules. Temperature, 8 A.M., 99.2°; 8 P.M., 98.6°. No appetite. 18th: Not much change in rash; slight improvement; knee seems a good deal less swollen than on admission; complains of no appetite. Ordered mist. quin. 3j, t.d. Pot. iod. stopped; temperature normal. 22nd: (thirty-first day of rash): Ordered zinc oxyd. pulv. amyli, partes æq. Temperature still normal. 25th: Thick crop of papules on forearm (not on ulnar side nor elbows), making raised patches by running together; also on right leg, very few on left leg; face again shows reddened desquamating patches; slight swelling of face and of right arm; off his appetite; seems ill; only complains of itching; bowels open after mist. alba; tongue rather coated; pulse regular, fair strength. Temperature, morning, 98.4°; evening, 99.4°. Diet changed to beef-tea. Urine: acid, specific gravity 1024; no albumen. 26th: Both forearms swollen, also slight swelling of right leg; the papules are vesicular. Temperature, 5 A.M., 98.8°; 8 P.M., 101°. Ordered lotio calamine to arms. 27th: Small pustules all over right leg, which is swollen; papules extending up arms; face better; slight exudation from right arm and leg. Temperature, 8 A.M., 99.4°; 8 P.M., 101°. 28th: Exudation on right leg, face, and ears; rash spreading on hands. Temperature, 8 A.M., 99.2°; 8 P.M., 101°. 29th: Arms and legs swollen for several days; vomited this morning; seems very ill. Temperature, 8 A.M., 98.8°; 8 P.M., 99.2°. 30th (fortieth day of rash): face very much swollen; tongue dry, furred, extreme anorexia; eyes very sore and running. Temperature, 8 A.M., 98.8°; 8 P.M., 98.6°. 31st: Some exudation in bend of right elbow. 31st: Temperature, 8 A.M., 98.6°; 8 P.M., 99.4°; ordered lotio sodii bicarb. gr. xx to 3j to eyes and lips. September 1st: Pain in right upper arm; both arms and forearms still swollen, also face; left leg a good deal swollen, purpuric patches on front; eruption spreading down over foot; right leg less swollen than before; trunk scattered all over with red papular eruption; lips and tongue very sore. Temperature, 8 A.M., 97.4°; 8 P.M., 98.6°; ordered mist. quin. gr. ij. 2nd: Urine: acid, not quite clear, excess of urates (2 trace of albumen); left leg more swollen. Temperature, 8 A.M., 97.4°; 8 P.M., 99.6°. 3rd: Temperature, 8 A.M., 98.0°; 8 P.M., 99.4°. 4th: Very weak; profuse irritating discharge from eyes and nose; former very sore; crusts about chin and lips; face burnished red; not much scaldiness; legs red and swollen, and the skin generally is much thickened and indurated; prostration profound; twitchings of muscles; conscious but drowsy and stupid; had three attacks of shivering to-day; teeth chattered; not attended by elevation of temperature; has vomited occasionally lately; bowels confined; tongue raw, red, and tender. Temperature, 8 A.M., 99.6°; 4 P.M., 99.8°; 8 P.M., 100.4°. Ordered brandy 5iv. 5th: Urine: acid, copious urates, specific gravity 1025; no albumen. Ordered lotio creolin. ½ per cent. every three hours. Temperature, 8 A.M., 100.4°; 12 P.M., 101°; 8 P.M., 102°. 6th: Diarrhoea six times since 8.30 last night up to 11 this morning; feels very weak; no vomiting. 6th: Limbs tremulous; 10 P.M. pulse full and fairly strong; bowels open four times to-day; ordered mist. cretæ c. opio for diarrhoea. Temperature, 8 A.M., 102.2°; 8 P.M., 103°. Quantity of urine, as far as can be judged by two observations, is about 30 ounces a day. 7th: Ordered more stimulants. Temperature, 8 A.M., 101.6°; 8 P.M., 100.8°. 8th: Ordered ol. ricini 5ss; chlorodyn. m. 15, aq. 3j after each loose stool. Temperature, 8 A.M., 100.6°; 8 P.M., 100°. 9th (fiftieth day): Urine: acid, specific gravity 1020, large deposit urates, cloud of albumen; incontinence of both began to-day; ordered enema opii tr. (m. 25). Temperature, 8 A.M., 98.4°; 8 P.M., 98.6°. 10th: Enema opii ordered to be repeated night and morning; ordered creolin ½ per cent. lanolin ad 3j for face, etc. Temperature, 8 A.M., 97.6°; 8 P.M., 97.2°. 11th: Temperature very low—8 P.M., 96.2°. Diarrhoea uncontrollable; weakness extreme; saliva viscid; sordes on teeth; seems to be unable to swallow because of soreness of throat; tongue dry, cracked, and flaking like skin; skin flaking in large pieces. Ordered tinct. chlorof. et morph. m 10 every three hours. Temperature, 8 P.M., 97.4°. 12th: Diarrhoea better. Temperature, 8 A.M., 96.2°; 8 P.M., 97°. 13th: Temperature, 8 A.M., 96.2°; 8 P.M., 98.6°. 14th: Restless; has been getting out of bed yesterday and to-day; half unconscious. 14th: Breathing laboured, about 14 per minute; pulse slow, slightly irregular, 72, small; has not taken anything to-day nor yesterday; eyelids stiff, eyes filmy, sordes; occasional starts and tremors; very sour offensive smell comes from patient; skin flaking, surface left comparatively normal in colour, no exudation. Temperature, 8 A.M., 96.2°; 8 P.M., 97.4°. Ordered nutrient enema with tinct. opii mx, every four hours. 15th: Can scarcely be roused; diarrhoea now stopped. Temperature, 8 A.M., 96.2°; 8 P.M., 97.6°. 16th: Right hand twitching constantly. Temperature, 8 A.M., 96.4°. Died at five minutes past 1 P.M. Has been very drowsy and almost comatose for two or three days. Revived a little the morning after enema, but died comatose in the afternoon, fifty-seven days after the eruption had first appeared.

The photograph was taken (September 4th), about six weeks after the commencement. From this time the skin lesion gradually improved, and, at the time of death, many parts were quite well, but the prostration steadily increased and ultimately proved fatal, in spite of all treatment. The temperature in this case was mostly subnormal. On two occasions there were elevations; on the thirty-sixth, thirty-seventh, and thirty-eighth evenings the temperature was 101°, and on the forty-sixth, forty-seventh, and forty-eighth it gradually went up to 103° and fell again. For the last seven days of life the morning temperature was exactly 96.2°, and the evening averaged 97.4°.

Necropsy 24 hours after Death.—Pleuræ, pericardium, and peritoneum normal. Heart: weight, 13 ounces, normal. Lungs: right, 21 ounces; left, 20 ounces; a good deal congested at bases; catibax as of old mischief at right apex. Liver: 64 ounces, normal. Spleen: 9 ounces, unduly large, not diffident: Kidneys: right, 5½ ounces; left, 6 ounces; congested and capsules thickened, but they strip readily. Stomach: petechial ecchymoses, chiefly on upper anterior aspect; covered with excess of mucus, but no ulceration. Intestines: small intestine showed patches of undue congestion in many parts; in one place, in the first part of the duodenum, there was threatened ulceration, but no actual breach of sur-

face. Large excess of mucus in the small intestine; lower part is free from congestion. Large intestine: cæcum and part immediately below it a good deal congested; no enlargement of the mesenteric glands. Brain: 47 ounces; meninges a trifle opaque and adherent along the middle line, but both the vessels and the cerebral substance appeared normal to the naked eye. Skin: scaling nearly all over; some pigmentation of arms and legs. Arteries normal. Right knee: articular cartilage a good deal eroded on femoral surfaces; new bone along the margins of the condyles; synovial membrane congested; cartilage eroded.

REMARKS.—Cases of the eruption had occurred in the ward (v) where this patient was since June 16th (thirty-six days). This patient was attacked on July 22nd, and here again it started on the face. After ointments and lotions of calamine and zinc had been tried, he was ordered creolin lotion (September 5th), and the skin began to improve immediately, but *post hoc* is not always *propter hoc*. This case is the youngest case which died of the disease. He was a long time dying, and in the end death resulted from collapse consequent on the vomiting and diarrhoea. After death, commencing ulceration of the duodenum was found, such as is said to occur in cases of burn. The illustration shows the flaking of the cuticle, and the contraction and eversion of the eyelids. The rash is fading on the trunk. The misery suffered by the subjects of the disease is well depicted. The cuticle separated in large flakes; an entire cast of the hand came away on one occasion.

CASE III. Left Hemiplegia; Acute General Eczema, subsequently taking on an Epidemic Form of Acute Dermatitis; Severe Constitutional Disturbance; Suppression of Urine; Pneumonia Senilis; Death (see Fig. 2).—P.R., aged 70, a tailor, admitted to the Paddington Infirmary January 1st, died October 22nd, 1891. There is nothing of importance in the family or previous history. He was admitted for left hemiparesis, which had come on during a "fit"

a few days before admission, and at the same time he had severely burned his left leg. The lungs were emphysematous; the heart weak and irregular. Urine: specific gravity 1020, alkaline, no albumen. January 3rd: Incontinence of urine was noticed to-day. 20th: Incontinence continues. *Per rectum*, prostate found to be enlarged. Twenty-four ounces of very offensive urine drawn off by catheter, and bladder washed out with warm boracic lotion. The burn on the leg from which patient suffered on admission gradually healed, and was well by March 10th. He also gradually recovered from the hemiparesis. The cystitis was rapidly cured by washing out the bladder daily, but the incontinence of urine continued occasionally. On March 14th an "eczematous" rash was noticed on the lower part of the back, due, it was thought, to the occasional irritation of the urine. The

following are the notes of the further progress of the case: March 24th: Rash in lower part of back is more extensive, and the irritation greater. There is now considerable oedema of left leg, and the dry eczematous rash extends down the greater part of leg anteriorly; ordered ung. ox. zinc. 31st: The irritation is still about as severe as ever, but the eruption has faded considerably. April 15th and 16th: A transient attack of pneumonia: a patch of consolidation at upper part of left lower lobe behind. Temperature, 103.8° on evening of 15th, but came down to 99° on morning of 16th. May 19th: Gets up daily; walks about; has dirty habits, but no incontinence; eczema on trunk as before; slight oedema about both ankles, more on left. June 23rd: Urine fairly acid; specific gravity, 1019; trace of albumen, white deposit. July 11th: Eruption has disappeared; still complains of irritation. 28th: No deposit of pus in

urine now; a dry eruption has reappeared on face and head, sides of neck, back, from scalp to sacrum, and sides of abdomen. [Note.—This was the commencement of the epidemic dermatitis.] August 4th: Similar rash on backs of hands, none on palms: there is more thickening of skin than formerly existed. 11th: Urine acid; slightly cloudy with pus; albumen a trace; specific gravity less than 1012. 15th: Has lost appetite; trunk—skin now thickened, a good many papules over it; fine desquamation on legs, papular rash here also; purpuric below knees; no exudation anywhere, pulse regular, force and tension fairly good; urine, acid, specific gravity 1020, trace of albumen. 25th (28th day of dermatitis): Lower extremities, chiefly thighs, desquamating in rather large flakes; also trunk and arms. Urine acid, faint trace albumen. September 1st: Legs and feet swollen; most of legs purpuric, and scaling; feet only show scattered papules on dorsum; elsewhere as above: seems well in himself; urine acid, specific gravity 1020, cloudy pus. 4th: Face swollen, red, and covered with fine scales; trunk reddened all over, and exfoliating; also arms (4th) and legs, which are still considerably swollen and deeply stained with purpura. Ordered lot. calamine and mist. quinquina, gr. ij, t.d.s. 5th: Urine, acid, sp. gr. 1020, cloudy, trace albumen and pus. Taking better. Ordered lotio creolin. 8th: Discharge from eyes profuse. 12th: Photograph was taken to-day, 46th day of dermatitis. 14th: Refuses whisky, and general condition worse since; eyelids stiff; not taking food so well. 18th: Crimson basis of new skin in places cracks; on it are

Fig. 1.

large flakes of epidermis size of a threepenny piece to the palm of hand. 26th: Two days ago tremors of the hands and arms were noticed (= lethal sign); to-day much weaker, not taking so well; put on danger list. 29th: Still exfoliating, but skin not so much reddened, eyes a little less stiff; no exudation now anywhere; no pain; rather queer in mind, does not answer to the point; has had double incontinence for some weeks; no vomiting, no diarrhoea. October 2nd: Right hand cannot be raised; has been in this condition for about a week. Skin improving on the whole, but still flaking, a little less red; tongue clean. Has improved now since he began to take whisky again. Ordered vaseline to face, after lotion. 6th: Pulse regular, tension fair, wrist drop of right hand increasing, movement of whole right arm very much impaired; can neither extend shoulder nor elbow, and pronation and supination are very defective;

face, skin pretty normal, but scalp very scaly still; trunk reddened and furfuraceous. Legs and arms like pityriasis rubra, especially legs; tongue moist, red, and clear; no exudation anywhere; urine acid, cloudy; cloudiness probably pus. 9th: Pulse 90, regular; patient weak and tremulous; eruption getting better every day; very little scaling except on legs, but the weakness remains. 14th: Still getting on well as far as dermatitis is concerned, but weakness great. Pulse 72; tongue clean. 20th: Much weaker; subsultus marked; respiration laboured at times; quantity of urine probably diminished, but incontinence of both; tongue raw, dry, and glossy (just like skin); more whisky ordered; 12 ounces *per diem*, with warmth and nutriment. 20th: Ordered ung. creolin to face. Pulse small and weak, 102, regular; face nearly normal, surface shiny and very little scaly. Slight muco-purulent catarrh of eyes. Trunk:

Colour has nearly faded to normal; a little fawn discoloration; a few moderate-sized scales, thin, still coming off. Arms and legs still deep red; skin feels thick; scaling more profusely than trunk; skin of trunk not thick, but inelastic; all dry. Tongue fairly clear; no sordes; some mucus in trachea. Tremors of head and hands. No complaint of irritation or pain; no vomiting; no diarrhoea. Bowels regular. Passed no urine yesterday nor to-day, but 3 ounces in night. 10 p.m.: Face seems a little swollen, chiefly about eyes. Patient very weak. Pulse 66, soft; respiration 28. 21st: Pulse 60, feeble. Head tremulous; unconscious. Urine 1018, acid, cloudy; albumen, no blood; 24 ounces drawn off this morning. Catheter passed at 11.15 this evening, only drew off about 1½ ounce of thick turbid urine; has passed none through the day. Vomited this morning and in the evening; three times in all. 22nd: Has not vomited this morning, but spits out everything put into his mouth. Still unconscious. Respiration is laboured and noisy. About 3 ounces of urine drawn off by catheter; thick, turbid; specific gravity 1018; acid; cloud of albumen. Died without fresh symptoms this afternoon.

The temperature, with few exceptions, was normal, or slightly above normal. The exceptions referred to were on April 15th, when he developed a patch of consolidation in the left lung, the temperature rose to 103.8°; and again on October 9th, when his temperature was 101.8°. For the last seven days of life the temperature was subnormal, and during the last two days it was only 97.4°.

Necropsy 12 hours after Death.—Rigor mortis well marked; the skin still shows signs of the eruption, and the epidermis is separating in large flakes (feet less than the other parts). Pleura: a few adhesions at apices. Pericardium: white patch of thickening over front of right ventricle. Peritoneum: normal. Heart: 12 ounces; a little atheroma of coronary arteries; right ventricle rather dilated, superficial layers of anterior wall (about one-third of thickness) degenerated and fatty; left ventricular wall ½ inch in thickness, fairly normal; aorta very atheromatous, calcareous, but aortic valves not much affected. Lungs: right, 21 ounces; left, 24 ounces; scars at apices, partly cartilaginous; a few calcareous

granules embedded on surface of lungs; upper lobe of right lung in condition of red hepatisation, portions sink in water, lower part congested and oedematous, but floats; the greater part of the left lung (all except the anterior portions, which are emphysematous and oedematous) is in a condition of red, and in places grey, hepatisation. Bronchi congested. Liver: 43 ounces; scars on surface; on section fairly firm, not fatty, rather congested, like early "nutmeg." Spleen: 3 ounces; scars and some fibro-cartilaginous plates in capsule; substance normal, not congested. Kidneys: right, 2½ ounces; left, 3 ounces; firm, dense, and somewhat pale; in parts mottled with yellowish tissue; one small infarct, pale, and about size of a pea; capsule a little thickened, but peels off fairly clean; cortex and medulla in normal proportion; the vessels stand out. Stomach: mucous membrane appears thickened, rather

opaque and deeply congested; a few hemorrhages in it. Intestine: mucous membrane a good deal congested, especially in the duodenum and upper jejunum; in this part also there are yellowish-white blebs in the mucous membrane between the valvulae conniventes, which collapse on section and yield a milky fluid; at one part in the upper jejunum there are small extravasations of blood along the valvulae conniventes, and also in the caecum and colon adjacent there are numerous petechial hemorrhages; the surface of the mucous membrane along the whole length of the intestine is whitened, and on close inspection the villi appear hypertrophied and opaque. From about the middle of the ileum down to the rectum, the surface of the mucous membrane is covered by a leathery film, mostly whitish in colour, which does not wash off under the tap, though it is very soft and can readily be removed by the finger. The mucous membrane of all the intestine seems thickened. Peyer's patches are pale, appear somewhat white, and depressed in the thickened mucous membrane; one or two of mesenteric glands seem a little congested. Brain: 47 ounces; membranes over vertex are a little white and thickened; excess of fluid on surface and in the ventricles; cerebral substance appears normal.

REMARKS.—During the first stage of this case, March 14th to July 28th, the condition corresponded to ordinary acute general eczema, and the little constitutional disturbance was doubtless due to the bladder trouble.

From the latter date to the end, October 22nd, a period of twelve weeks, both the skin and the general condition showed symptoms of a different order. The skin lesion during this latter period was a dermatitis, attended with much burning, redness, and thickening, and accompanying this there was extreme prostration, of great permanence and intractability, which ultimately proved fatal, although the skin lesion appeared to be rapidly improving. The wrist-drop of the right arm and the suppression of urine during the last few days of life are features worthy of note.

Fig 2.

It is also worthy of note that although the patient did not have vomiting or diarrhoea during life, the appearance of the tongue, and, after death, the appearance of the intestines indicated a dermatitis (if I may so say) of the alimentary tract.

CASE IV. Epidemic Skin Disease: Alopecia of Scalp without the Head being previously the Seat of the Rash; Recovery (see Fig. 3).—E. W., aged 18, laundress, admitted October 15th, 1891, still under treatment. Family history unimportant. Previous history: The patient was a helper in one of the workhouse sick wards (iii). In this ward there were two or three inmates suffering from the epidemic skin disease. While a helper in the ward she suffered from conjunctivitis in one eye for some time. This became much better, and she left the workhouse on the morning of October 14th, returning on the morning of October 7th with oedema of the face and eyelids. There was no redness, and the oedema was so suggestive of Bright's disease that her urine was at once examined, but with a negative result. She was sent back to the sick ward of the workhouse as a patient. On October 9th the swelling of the face had considerably subsided, but papular spots appeared on the hands. On October 10th similar spots appeared on the legs. On October 11th the eruption appeared on the face, which became swollen and red, and at the same time the rash was noted on the chest and back; was transferred to infirmary on October 15th. *State on Admission:* General eruption all over body; face swollen and furfuraceous; some oedema of eyelids; back, chest, abdomen, arms, and

Fig. 3.

legs covered with a papular eruption, which itches a good deal; no exudation at any time; the palms of the hands have several blister-like places on them, and "sago grain-like" papules. The outbreak of the rash was attended with a feeling of sickness and prostration. The viscera and urine are normal; the hair is beginning to come out. 17th: Hair can be combed out in large quantities; combed out 1 ounce of hair this morning! 20th: Hair still coming out; eruption better everywhere; temperature normal since admission. 25th: Hair nearly all gone; face a good deal reddened and eyes still swollen; tongue clean, feels well. 26th: Still some eruption (redness and furfur), generally distributed, not universal; seems well. 27th: Hair still coming out, eyes better; skin of trunk rough and furfuraceous; no exudation, no anorexia now; has boil on left buttock, and has a small inflamed gland under left arm also. November 1st: Eruption gone. 10th: No return of eruption, scalp almost bald; eyelids still everted, and lashes and eyebrows have come out, leaving only a few hairs in the upper lids. 17th: Hair commencing to grow again, with lotio capillaris. The temperature, taken systematically from October 15th, was subnormal in the morning and normal in the evening. The only time it rose above 98.6° was on October 24th, and this is probably accounted for by the presence of a boil on the buttock.

GENERAL REMARKS.

The four cases which are illustrated are fairly typical of the outbreak which has occurred in the Paddington Infirmary dur-

ing the past five months, a complete account of which was given before the Medical Society. Of 846 patients who were either in the infirmary or who passed through during that time, 163, or nearly 20 per cent. were attacked. Only one out of all these was brought in with the disease; all the other cases occurred amongst persons already in the infirmary for some other reason. The eruption, which is in its essence a dermatitis of more or less general distribution, commences usually with discrete papules, which sometimes go on to the formation of vesicles, and always results in very extensive desquamation or exfoliation of the epidermis. It is attended by a certain amount of constitutional disturbance, and runs a more or less definite course of about seven weeks. The coloured sketch shows the disease at its height; there is some exudation around the ear, the result of a previous formation of vesicles, whereas the rest of the face is dry and desquamating. The flaky character of the lesions about the sixth week after the starting is well seen in the other figures.

The Eruption.

Some few cases commence like Case I (J. G.) with maculæ or blotches, bearing some resemblance to röteln, but this is not very common, and these patches, becoming confluent, soon present a uniform thickened crimson surface covered with flakes so characteristic of the disease. But by far the most frequent mode of starting is by papules, the intervening skin being congested or erythematous. The first or papulo-erythematous stage lasts usually from three to eight days, then comes the stage of exudation or exfoliation according to the type of case, which lasts several weeks. The cases seem to group themselves naturally into two varieties—a "moist" type and a "dry" type. The moist type bears some resemblance to eczema, only they are attended by much more thickening of the skin. These are characterised by profuse exudation of serum, whereas in the dry type the skin desquamates or exfoliates without the previous appearance of vesicles. Nevertheless, dried exudation may be seen on the under surface of the scales with a magnifying glass.

The coloured illustration shows this second stage very well, and it shows also the thickening and induration of the dermis.

The illustration of Case III represents the dry type, and shows the cracks and flaking of the skin, which often comes off from the hands and feet in large pieces like the fingers of a glove. The illustration of Case II shows the commencement of the third stage or stage of subsidence, where the inflammation is gradually subsiding, and the skin presents a brown, parchment-like, stretched, and cracked appearance. The face seems a very favourable place for starting; but it begins sometimes on the covered parts of the body, and in about half the cases it spreads until it becomes universal. Considerable variation is to be observed both in the character of the eruption, in its place of starting, and the extent of surface involved. But they present a very striking general resemblance to each other, and the more one studies the cases the more is one convinced that they are all examples of one pathological condition modified by the circumstances under which it occurs.

Course and Duration.

The primary attack lasts usually from 6 to 8 or 10 weeks, but it is very liable to relapse; 33 patients out of 163 had one or more relapses, or, more strictly speaking, recrudescences, at least I do not recollect a case in which the skin had completely recovered before the fresh outburst. Other epidermal structures are generally involved, nails are shed, and the hair comes out. The hair of any part may be affected; the illustration of Case IV is an example of the alopecia of the scalp which follows the disease, and it is interesting to note in this case, as in some others, that the eruption itself was never visible on the surface of the scalp, although the dermal portion of the scalp must have been affected. Another interesting feature of Case IV is that the advent of the disease was preceded by simple oedema of the face. A day or two after this the eruption appeared on the hands, then on the legs, and then the face was again attacked, and this time there were more visible evidences of the eruption than simple oedema.

Constitutional Disturbance.

The two most constant constitutional symptoms are anorexia and prostration. The anorexia was very marked in most cases. The fairly general rule is for the tongue to be coated at first, and afterwards to become raw and denuded of its epithelium (like the skin, be it observed). Sometimes there is vomiting, sometimes diarrhoea, complications which largely conduced to bring about a fatal issue, as they did in Case II. The temperature is not elevated, excepting when the inflammation of the skin is at its height, and there is a large surface involved; for the rest of the course it tends rather to be subnormal, and corresponds to the extreme collapse which sometimes occurs; it was the collapse consequent on gastro-enteritis to which Case II succumbed after such a brave fight.

Diagnosis.

As regards the diagnosis of the affection, the disease bears certain analogies with acute general eczema, but the differences were well exhibited in Case III. This man was evidently the subject of an attack of acute general eczema from March 14th to July 28th; then the disease took on the epidemic form. In the first stage of the case—March 14th to July 28th—the skin lesion presented the typical appearance, and ran the course of acute general eczema. The constitutional symptoms were slight, and amply accounted for by the intermittent cystitis from which he suffered; but after this date the anorexia, extreme prostration, marked tumefaction of the skin, and subsequent thickening, were quite different to his former symptoms, and, so far as my experience goes, were quite inconsistent with acute general eczema. The prostration in this case was so profound and so intractable that, although the skin lesion was at that time on the high road to recovery, he had not the strength to rally, and succumbed.

The disease bears some resemblance to pityriasis rubra, but the epidemic form in which my cases have occurred, the fact that children were almost exempt, and the exudation in the "moist" variety of cases, which constitute the majority, distinguish it from this disease.

Pregnosis.

The mortality among my cases was 12.8 per cent., excluding those in whom death was not directly due to the eruption. The death-rate was considerably higher among the males than the females, being 20 per cent. among the former, and 4 per cent. among the latter. Age seems to have an important influence, both on the severity of the attack and the mortality of the affection. G. C. (Case II) was the youngest of all those who died. The average age among the twenty-one fatal cases was 70½. There are two constitutional symptoms which are of lethal import—tremor of the limbs and embarrassment of respiration without physical signs in the lungs. None of the cases recovered in whom I observed these signs, although at the time they might seem to be doing well in other respects.

Treatment.

Treatment seemed to be of little avail in most cases when once the disease had got a firm hold on the patient, but, in the earlier stage, antiseptics, such as creolin, seemed to have a marked controlling influence. Case III rallied wonderfully for a time by the administration of large quantities of whisky, but the improvement was not permanent.

Pathology.

As to the morbid anatomy and pathology of the affection, my investigations are not carried far enough at the present time to enable me to speak with absolute certainty. But is there not almost sufficient clinical evidence to stamp the disease as a contagious one; namely, (1) its more or less definite course; (2) the symptoms of constitutional disturbance which attend its local manifestation; (3) the existence of a cutaneous eruption; (4) its specificity, that is, the marked general resemblance of the cases; (5) the serpiginous rings with which the eruption started in some of the patients; (6) the marked effect germicides have in modifying the skin lesion; (7) the wave-like manner in which the epidemic has come and gone? Nevertheless, its contagiousness would seem to be but of a feeble order, inasmuch as the sick and healthy are by no means equally attacked. The essential predisposing condi-

tions for its occurrence seem to be advancing years and debility, from sickness ("hospitalism") or other cause. Out of 24 persons in the infirmary, between the ages of 10 and 20, only 6 per cent. was attacked,

Out of 57 between the ages of 20 and 30,		7 p.c. were attacked
" 46	" 30	" 40, 6
" 58	" 40	" 50, 17
" 43	" 50	" 60, 23
" 73	" 60	" 70, 39
" 79	" 70	" 80, 30
" 19	" 80	" 90, 24

On the other hand, only eleven cases occurred amongst the healthy aged inmates of the workhouse; and six of these, five females and one male, were acting at the time as "helpers" in the wards where cases of the disease were under treatment at the time. This, again, is a fact supporting contagion as a proximate cause.

It is needless to say that the possibility of food, soap, scabies, and water have been submitted to a very thorough investigation, and proved to have no connection with the malady. Nor have any considerable number of the sufferers shown evidences of the gouty diathesis.

THE ACTION OF TUBERCULIN ON THE BLOOD.

By C. J. BOND, F.R.C.S.,

Honorary Surgeon to the Leicester Infirmary.

SOME years ago, in an article on the pathology of the blood, I pointed out that in certain diseases, notably those of septic origin, the blood undergoes a change which renders it prone to crystallize soon after withdrawal from the body, crystals of hemoglobin appearing both within the corpuscles and in the serum; and, further, that a similar change occurs in blood treated with products of microbic life outside the body.

The same tendency is found in patients after the injection of tuberculin: that is, if the reaction is sufficiently well marked and the temperature sufficiently high, crystallization occurs after the blood has remained on the slide twenty-four hours to three days, according to the severity of the constitutional disturbance.

Moreover, as was then pointed out in the case of local infective processes—erysipelas, for instance—the most marked crystalline tendency was found in blood drawn from the inflamed or erysipelatous area. So, too, in a case of lupus treated by tuberculin, in which the local reaction was very marked, crystallization occurred earlier in blood drawn from the inflamed area than in that from the general circulation. In the case of patients in whom there is no, or only a slight, reaction, or in whom immunity has been acquired, the change is not found. Advanced cases which are markedly febrile, that is, which are suffering from septic absorption before treatment, must be excluded, as crystallization might be found in such.

From previous considerations there is, I think, no doubt that the blood change is due to the presence of products, albumoses or ptomaines, of cell life or decay in the area of tuberculous tissue acted on by the tuberculin, and is only found in the general circulation when the manufacture of these bodies is sufficiently intense or continuous. Thus it may be due to the tuberculin only indirectly, but it would be a matter of interest to know whether each of the constituents into which tuberculin has been separated by Dr. Hunter produces the result.

WE note a practical outcome of the recent Congress of Hygiene and Demography. Dr. Charles Czerny, of Budapest, writes to the Secretary of the Metropolitan Public Gardens Association that, having read a published extract of report presented to the Congress by the Association, he would be glad to receive the regulations adopted by it, and an account of the work done by it, up to the present time. It appears that an association on similar lines is projected in the Hungarian capital. The international value of such congresses is demonstrated by such instances of inquiry, and the consequent spread of information.