CLINICAL OBSERVATIONS
ON
PSEUDO-MORBID APPEARANCES;
DELIVERED AT CHARING-CROSS HOSPITAL,
BY W. D. CHOWNE,
Physician to the Hospital.

HAVING explained the influences by which some of the pseudo-morbid changes are produced, we will proceed to speak of individual changes, and endeavour to distinguish between such as are pseudo-morbid and such as are really the consequence of a morbid process during life.

It may be proper to premise, however, that there are occasionally discolorations on the skin of persons recently dead which cannot be included in either of the divisions, or ascribed to either of the specific causes of which we have spoken, as generally giving rise to discolorations; for example, an instance is cited by Professor Channing, of Harvard University, of a man who died at the hospital so calmly that those about him hardly knew of the event; there was, on his wrist, a broad, discoloured circle, deeply livid, as if it had been violently beaten; the attention of the students was directed to the case, and they were begged to observe that quite round the wrist there was a mark that might most easily have been taken for the result of violence during life. Very considerable interest necessarily attaches to those pseudo-morbid discolorations of the skin which resemble the true ecchymosis from bruises inflicted during life, and to these we will first give some attention.

A celebrated author defines ecchymosis to be "a superficial soft swelling, attended with a livid or blue colour of the skin, produced by blood extravasated into the cellular substance." But, we must not overlook (however good as a general definition this may be) that as, on the one hand, there are effusions beneath the skin, even occasioning soft swelling, without livid or blue colour, so there are effusions causing livid or blue colour without swelling.

In connection with the definition of ecchymosis it may be desirable to advert to the definition, and the pathology recorded by Beck, in his elaborate and admirable work on medical jurisprudence; and I do so the rather because there is a remark made in connection with the pathology which may possibly lead to error: after having stated that the term ecchymosis "is equivalent to effusion or spreading of blood into the cellular tissue," the author proceeds to say, "it is present whenever the contusion is sufficiently violent to induce the rupture of a blood-vessel, and the natural result is to communicate a colour more or less livid to the skin." It is only in the event, however, of this passage being read abstractedly from other parts relating to ecchymosis in the same work, that any error can be made, there being other remarks abundantly calculated to leave the right impression on the mind; as it is possible, however, that, on hasty reference, those other passages may not be studied, it will be proper for you to recollect that although extravasated blood commonly, and almost always, becomes incorporated with the whole thickness of the true skin, rendering it black instead of white, this event may not follow; and a blow may cause extensive extravasation below the skin without affecting the skin itself.

It can scarcely be necessary to allude to the importance of a correct knowledge even of subjects so seemingly insignificant as mere marks on the integument. Examples of very formidable evils resulting from the want of that knowledge, are on record; how many more may have occurred the records of which have not been preserved it may be fearful to contemplate.

A case occurred in the year 1765, which, to medical witnesses, may serve at once as an admonition and a beacon. John Stringer was tried at the Lent Assizes of that year, held at Kingston, in the county of Surrey, for the murder of his wife, and was found guilty. It appeared that they (Stringer and his wife) had frequently quarrelled, and a young surgeon gave it as his opinion, on the trial, that some appearances on the corpse were somewhat the
appearances of mortification occasioned by bruises. But an eminent surgeon in the neighbourhood, Mr. Carson, had, on the report of the murder, examined the body from mere curiosity, and it was so clear, in his opinion, that there were no marks of violence thereon, that he had not the least apprehension about Stringer's fate; but, hearing afterwards of his conviction, he stated his opinion to the Archbishop of Canterbury, obtained a respite from Baron Smythe, and finally was the means of obtaining a complete pardon.

Until the unhappy events in Edinburgh, so well known to you in connection with the names of Burke and Hare, there were many points of great interest in relation to injuries inflicted on the body, of which but little was known with any degree of accuracy; and Dr. Christison not being able to obtain, either by reference to writers on forensic medicine, or to other authorities, the necessary materials for guiding him in the duties which would, in the course of the legal proceedings affecting these men, devolve upon him, instituted experiments applicable to the specific circumstances requiring elucidation. Amongst these were certain marks on the integuments called ecchymoses, and at that time neither was their exact character precisely known, or whether it was possible to produce after death similar discolorations.

There were found on the unfortunate woman, Margery Campbell, on the inside of the left leg, a little below the ankle, and on the outside of the right leg, a little below the calf, several considerable bluish-black discolorations, one as big as a crown, without swelling, but arising from black, thick, though not coagulated, blood, incorporated with the whole thickness of the true skin, and effused deeply into the cellular tissue beneath; a similar large spot on the outside of the elbow, and a superficial laceration on the left arm, with blood effused into the cellular tissue and substance of the skin around; a slight laceration on the inside of the upper lip, opposite to the left eye-tooth, with surrounding effusion into the cellular tissue.Appearances similar to these may often become subjects for your decision. The investigations were commenced by experiments on dogs, and the objects were exactly similar to those produced on the human subject.

Experiments were, therefore, performed by Dr. Christison on human subjects, and with an uniformity of results which enabled him to arrive at safe and extremely valuable conclusions.

In order that you may properly estimate the value of these experiments, and be assured that they were performed in a manner to try the question fully and fairly, and calculated to merit confidence, I will give you the author's own description of them, confining myself, however, at present to those which refer particularly to discoloration of the skin.

"The subject of the second experiment was thirty-three years of age, rather full in habit, and died of three weeks illness, which appeared to have been fever, with cough and dyspnoea throughout its whole course, and purpura simplex for two or three days before the close."

"An hour and three-quarters after death, the trunk and neck being warm, but the face and limbs rather cold, the joints of the legs slightly stiff, and lividity not formed, several heavy blows were inflicted with a stick across both shins, on the forepart of the thighs, on the breast, and on the side of the neck. In less than ten minutes deep bluish-black discolorations followed the blow on the breast and neck."

"Twenty-three hours after death a severe blow was struck with a stick over the crest of the ilium, and caused ruffling and comminution of the cuticle."

"The body was examined twenty-five hours after death, having been, during the interval, upon the back."

"The face, back, and side were livid. When the skin was cut into, even where the tint of the lividity was deepest, the colouration was superficial as not to be referrible to a portion of skin of appreciable
thickness. At the seat of the blows on the shins I could find only one small, faint bluish-black discoloration on the outside of the right leg. The true skin was not altered there in colour. In one or two small detached spots there was a faint discoloration of the cellular tissue; these were here and there slightly injected with dark blood. On the breast and neck there were dark bluish-black stripes, as deep in tint as any contusions inflicted during life, but without swelling. The colour corresponded with the prominent part of the stick. A thin layer of the outer part of the true skin had a similar but paler tint; the deep part of its substance was white. The thin cellular interstices between the adipose cells of the subjacent tissue were here and there much injected with fluid black blood, but there was no extravasation into the cells themselves, such as was seen in the body of the woman Campbell."

A third experiment was performed on the body of "a man thirty-eight years old, who died in the third week of fever and dysentery, not much emaciated. Three hours and a quarter after death, the body being warm, the limbs very slightly stiff, and no rigidity perceptible anywhere, some severe blows were struck with a stick on the left side of the back. Discolouration did not immediately ensue, as in the second experiment."

"Seventeen hours and a half after death, when the body was quite cold, and all the joints stiff, more blows were struck on the right side of the back. The marks of the blows made fourteen hours before were quite distinct. The body lay on the back till it was inspected, forty-seven hours after death."

"The face was livid, the lips black, but there was no lividity on any other part of the body. The blows inflicted three hours and a quarter after death were marked each by two long narrow lines of dark lividity, with an intervening colourless stripe, corresponding with the prominent part of the stick."

On cutting through the skin there was found redness of the mere surface of the true skin, but the rest of the substance, as well as the cellular tissue beneath, was quite natural. "The marks of the blows inflicted seventeen hours and a half after death, consisted of dryness and brownness of the surface of the skin, without darkness or effusion."

The subject of the fourth experiment was a young person, reduced by cholera, which proved fatal in its chronic stage. The body "was struck four hours after death, while warm, with a stick. On subsequent examination it was found that wherever the cuticle had been comminuted, the mark was dry and brown," but nowhere was detected "any other discoloration of the skin, or any effusion into the cellular tissue beneath."

In a fifth experiment the subject was "a stout young man, who died three weeks after an injury of the head, followed by meningitis and suppuration of the arachnoid."

In two hours the limbs, being rather stiff, and the back slightly livid, several heavy blows were "struck with a mallet on the back. The body was inspected five hours afterwards. The lividity, which was deep, and completely formed, had a deeper tint where the blows had been struck, than in the immediate neighbourhood. At one place, where the cuticle had been abraded by the blow, thin florid blood was effused on the surface of the true skin. Nowhere was the substance of the skin infiltrated, or discoloured, or different, in short, from the places where lividity existed without a blow having been struck. At one spot, under the seat of a blow, there was an exceedingly scanty injection of blood into the membranous interstices, between the adipose cells; the back at this time was warm, the hip-joints flaccid, the other joints stiff."

We cannot fail to perceive that there is an uniform coincidence of circumstances connected with these experiments, directing the attention at once to the pathology of true ecchymosis, in comparison with the effects produced by the blows, even soon after death, and while the bodies were yet warm. In severe bruises there commonly is forthwith extravasation, in consequence of the rupture of small vessels. The black and blue appearances immediately following some bruises, can be explained in no other way. The dark appearance on the limbs of the woman Campbell accorded, on dissection, with the pathology of ecchymosis. The parts discoloured by the blows after death in the subjects of experiment, did not, on dissection, present a similar condition of the parts."

It appears, then, from these experiments, some of which I have repeated, and, as you have seen, with similar results,—that for some hours after death, while the body is warm, the blood fluid, and the muscles not rigid, blows may cause appearances not differing in point of colour from the effects of blows inflicted shortly before death; there are certain conditions, however, in relation to the precise circumstances under which blows post-mortem must be inflicted, so as to produce appearances similar to those of blows inflicted prior to death.

1. Slight blows inflicted after death do not produce any visible effects.

2. Severe and only severe blows, inflicted after death, may produce appearances resembling the effects of contusions before death.

3. Such blows, however, can only be fol-
allowed by such effects, when inflicted within three hours, or thereabout, after death.

4. Should the body be so circumstanced as to have become cold and stiff, even within three hours, blows after death will not produce appearances similar to those consequent upon contusions prior to death.

None but the effects of slight contusions before death can be resembled even by severe contusions after death. We may also infer, that when yellow marks are present, not only that the injury causing them was prior to death, but that it was some time prior, and therefore the less likely to be the result of any encounter or struggle, from which death may be presumed to have ensued, for the yellow colour seldom shows itself in less than three or four hours, and often not until after one or more days.

It is proper to recollect also, with reference to time, that although ecchymosis, even without the yellow margin, may occur immediately, it does not generally occur until one or two, or more hours after the injury, and sometimes not until after several hours.

In relation to ecchymosis generally it will be proper to recollect that the probability of their being pseudo-morbid, or the result of injuries after death, will be greater in proportion as the season of the year may be warm, or as the circumstances under which the body may have lain, whether within doors or out of doors, well clad or indifferently clad, may have been calculated to preserve its natural warmth.

We will now refer to a plan I have adopted for arranging the peculiarities which characterise respectively the ecchymoses produced before death, and those produced after, in a form which will render them more immediately obvious than they otherwise would be.

In Ecchymosis from Blows prior to Death.

The colour is not uniform.

When the injury has occurred some time before death, there is generally a yellow or greenish-yellow margin, round the black mark.

There is sometimes swelling from extravasation, even when death occurs immediately after the injury, constituting thrombus.

An incision discovers a congestion of thick concrete blood.

When the blood does not coagulate, it becomes effused to a considerable extent in the cellular tissue.

There may be clots of blood from the rupture of large vessels near the cellular tissue.

The effused blood becomes incorporated with the true skin.

The discoloration is often diffused, and extends far beyond the limit of the spot actually contused.

The firmness and resistance of the true skin is generally increased by the effusion of blood into its substance.

There is generally a central part of the ecchymosis darker than the surrounding part, even though death should have followed immediately or soon after the injury.

Of either of the individual signs taken alone the most to be relied on is the penetration of the effused fluid into the texture of the cutis vera, in the true ecchymosis; and the whiteness and freedom from injection of that part in ecchymosis produced by blows after death. Dr. Christison observes that "perhaps one of the most characteristic signs of a contusion inflicted during life, is incorporation of blood with the whole thickness of the true skin, rendering it black instead of white."

There are some practical points connected with the hue or colour of ecchymoses, at the time when they may come under consideration, that require more attention than is generally given to them. It is obvious that a person found dead under circumstances leading to a suspicion that death had been produced by violent means, may
have, from accidental bruises, altogether antecedent to the circumstances suspected of causing death, ecchymoses on his person of many hours, or even of some days standing; it becomes an object, then, to discriminate, by the character of the discolouration, their real, or at least their probable age. As true ecchymoses, from their first appearance to their final disappearance, undergo a series of changes, which, as a general rule, follow a regular order of succession, a close attention to these changes might enable us to connect or to disconnect, as the case may be, the ecchymosis and the immediate or real cause of death. We will first call to recollection the variations of hue, as they occur successively, and then compare such indications as they may afford with the indications presented by the woman Campbell. A true ecchymosis is, in its first stage, red, and this is generally immediately after the injury causing it; in its second stage it is of a bluish colour, from the effusion of blood into the cellular tissue; this may, in violent cases, follow immediately upon the first, or in less violent cases a considerable time may intervene; it next acquires a deep leaden or livid hue, and then changes to violet, green, yellow, and ultimately to citron colour, and most generally in this order of succession.

In the case of the murdered woman at Edinburgh the discolourations are described to be in one part brown. In several, "bluish-black discolourations," one as big as a crown, but without swelling, arising from black, thick, though not coagulated blood, &c." In another part, "a similar large spot;" that is, similar to the "several bluish-black discolourations," as there are no other colours of the skin described, and it will be observed that only the early colour of ecchymosis was present, and that there was in no instance either of those gradations of colour which, as we have seen, are the result of a more or less protracted interval of time.

Here, then, we perceive the value of those observations which, by assisting to determine the time when any injury producing a given discolouration was inflicted, tend to show how far there may or may not be a connection in the relation of cause and effect between such injury and the circumstances under which death occurred.

You have at this hospital opportunities of seeing examples of these, and the various conditions of ecchymosis at different stages, and we will revert to these, as practical illustrations, under our own observation, on a future occasion.