

ART. XXXIII.—A MEDICO-LEGAL ESSAY ON FATAL DOSES OF PRUSSIC ACID.

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Called to a person who has died from poisoning, it is customary for medical jurists, before performing the *sectio cadaveris*, to note the relation of the body to surrounding objects, the place in which it is found, its position and that of things in its neighbourhood. To examine the spot on which the body was discovered, the soil or surface on which it lies, the clothes of the deceased, and the body itself, which includes the discovery of the sex, probable age, stature, degree of corpulence, colour of the hair and eyes, and any peculiar marks which may exist on the cataneous surface. The duration of the presence or absence of animal heat, of cadaveric rigidity, and putrefaction, must also be carefully attended to, since the most certain signs of death depend upon them, and the length of time the party has been dead, is most accurately denoted by them.

Post mortem appearances observable in persons poisoned by Prussic Acid.—*Exterior.*—"The body," says Taylor, "commonly exhales a strong odour of prussic acid." Colourless fluid, probably saliva, may fill the mouth, or have trickled from it, which, as well as the lips, smells powerfully of the poison—depending parts are discoloured by hypostatic congestion. Immediately after death there is great rigidity of the muscles, but it is soon succeeded by an opposite state of flaccidity. Putrefaction, as in other cases of sudden death, may be rapid. Much that is applicable here has been before commented on. *Vide* sections of the eye, face, &c.

Interior—Head.—While removing the scalp and calvarium, much blood usually flows from its wounded vessels. The meningeal and cerebral veins are generally very much distended, with dark blood. There is rarely any unnatural accumulation of serum within the ventricles. In one case, a considerable watery effusion occupied the sac of the arachnoid. An extravasation of blood has been found between the external membranes of a horse, and a strong smell of prussic acid has, in several instances, been detected, from different parts of the encephalon.

Chest.—The odour of the acid is generally very appreciable when this cavity is opened, and has frequently been detected in it, when not manifest any where else. The same, Mr. Hicks has proved to hold good with the lower animals, and he has recognised it there immediately after death, in rats destroyed by *miv.* of the acid, when it did not exist even in the stomach. *Heart.*—In some subjects, all its cavities are charged with blood, while in others, merely those of the right side, the left being empty. Mr. Nunnally, from his experiments on brutes, found that if from any cause death were delayed, all the chambers of the heart, and especially those of the right side, contained more or less blood. If, on the other hand, the death were sudden, the left cavities, and principally the ventricle, were empty, and rigidly con-

tracted, while the right side was in some, though by no means in all, much distended. These results admit of application, by analogy to the human subject. Magendie states, that the heart has its irritability so completely and immediately extinguished by the pure acid, that it is insensible, even to the stimulus of galvanism. This, however, later investigators find, not to be universally an immediate consequence. *Lungs.*—Guy writes thus, they are "sometimes pale, more generally gorged with blood," especially in dependant parts, which may, on that account, be of a black colour. When cut into, their colour is "a light rose pink," particularly in those situations from which the blood has subsided. The large bronchi have been filled with a reddish, frothy serum. The aorta and its branches are almost always empty, while the pulmonary artery, and other veins are filled. "The larynx, trachea, and cesophagus have been said to be reddened."

Abdomen.—The odour has been detected, in some, in the peritoneal cavity, particularly in the vicinity of the stomach; in others, solely when the latter has been opened; it is generally inappreciable in the intestines, a sour smell existing in lieu of it. Mr. Hicks detected it five days after death, in the stomach. The peritoneal covering of the intestines, has had a reddish tint. Dr. Letheby remarked in all his cases, a particularly congested state of the whole gastric internal surface, with occasional white patches and red dots. Dr. Geoghegan declares that the only morbid appearance worthy of note in a man, who had died from $\frac{3i.$ of prussic acid, was a patch of dark red extravasation, under the mucous membrane of the stomach, near the pylorus. The stomach, in this case, exhaled the odour of the acid, although it had been exposed for three days. Taylor states, that "in some rare instances," the stomach and alimentary canal "have been found inflamed." Mertz-dorf examined two cases, where the gall-bladder had a blue tint. The kidneys and liver, are usually much congested with venous blood.

The Blood.—Is of an unusually dark colour, with a glimmering blue tint, is perfectly fluid, flows out copiously from a cut surface, gives out a strong odour of prussic acid, and is collected in the veins. The colour above mentioned, possibly, might not be present, for, in some exceedingly rare cases, it has been highly florid.

Remarks.—From the above details, it is evident that the post-mortem appearances, observable in persons poisoned by prussic acid, result from an accumulation of fluid blood, of a dark blue hue in the veins and their capillaries, in fact, that they are those of asphyxia, and as this condition arises from such a multiplicity of causes, no direct proof can be obtained from them alone, of the particular agent employed in their production. They are serviceable in disproving that a corrosive or irritant had been swallowed, and that the poison had been introduced into the stomach after death. Knowing that prussic acid acts so rapidly, and produces these effects, it is not justifiable, if its presence be found at a post-mortem, to imagine that they were due to some circumstance operating during the time that existed between the former's reception and the patient's death. Should morbid alterations be present they, as a rule, do not re-