

abdomen may cause a forcible reflex of blood into the system of the vena cava; and the jugular veins, being feebly protected by valves, are more open to an attack by this reflex than the venous trunks in the limbs. He says, however, that this is not sufficient in itself, and that some more energetic factor must also be present. He accepts the view that there exists an influence from strong personal action, and recognizes the violent though unconscious struggles of the patient to evade the forcible pressure to which he is subjected at the moment of the injury, by making a considerable thoraco-abdominal effort. Under such circumstances, the intra-venous pressure is likely to overcome the resistance of the vascular coats, giving rise to temporary paralysis of their walls with stasis and carbonization of the blood in them.

As an example of the influence of the personal factor giving rise to petechiæ one might refer to their occurrence in women after a prolonged effort in labor, persons suffering from whooping cough, epilepsy or convulsions.

(a) This ecchymotic mask has been found post-mortem in the bodies of persons crushed to death in great crowds or panics from fire. Classic examples in literature, collected by Burrell and Crandon,<sup>5</sup> of Boston, are: (1) Crowd in Champs de Mars, in 1837, in which 23 persons were killed; (2) Vienna Ring Theatre Fire, in 1881, with 1,000 deaths; (3) Victoria Hall, Sunderland, when 200 children were killed; (4) the Charity Bazaar Fire in Paris, in 1897. Olivier examined the bodies of the 23 persons killed in the Champs de Mars crowd and found in all of them the uniform violet tint of face and neck, spotted with blackish ecchymoses. The severity of the crushing force is indicated by the fact that fracture of the ribs occurred in 7 of these cases. In 9 of the cases in which infiltration was seen beneath the conjunctiva, and in those cases where blood flowed from the ears, the vessels of the pia and of the substance of the brain were engorged with blood, which condition would account for the dulness and stupidity, invariably present in all cases which have recovered. It would explain the drowsiness and irritability which occurred in the case just reported. No permanent injury to the brain results, for, as Villemain states, indications of cerebral or meningeal hemorrhages have never been observed either during life or on post-mortem examination.

(b) In cases in which death has been caused by strangulation the face is "livid and swollen and sometimes mottled. Ecchymoses of small size are present in the skin of face, neck and chest, giving it a spotted, mottled or dotted appearance"