

enlargement of the heart, especially of the right ventricle, in 21 out of 31 necropsies of infantile scurvy, and concluded that a direct ratio exists between the degree of enlargement and the intensity of the disorder. These reports gain added interest in view of the enlargement of the right heart so frequently encountered in beriberi, and described by Andrews in infants dying of this condition. In addition to the definite statement of Darling regarding adults, mention may be made of the observation of Aschoff and Koch, that in two cases of uncomplicated scurvy there were fatty degeneration and dilatation of the heart. Fatty degeneration of the muscle is frequent, brown atrophy exceptional. Sato and Nambu also found hypersemia and atrophy with increase of connective tissue between the muscle fibres.

The pericardial cavity contains almost invariably an increased quantity of fluid, which may be so great as to impede the heart's action. Adhesive pericarditis has been described. The cardiac valves are normal, unless previously damaged.

Lungs.—The lungs are almost always congested, but apart from this are remarkably free from abnormality. Smaller or larger hemorrhages are described occasionally, which are usually considered truly scorbutic; Andrews, however, found similar lesions in beriberi. In the necropsy of Stephen Mackenzie's case, described by Barlow, these small hemorrhages are stated to have resembled small red tubercles scattered throughout the lung. There may be pulmonary infarcts. Edema of the lungs is not uncommon, as we should expect, especially as a terminal condition. Pneumonia, lobular or lobar, is one of the most frequent complications and causes of death. Active tuberculosis is a not uncommon secondary manifestation.

Legroux also found occasional fatty changes. Other authors have failed to demonstrate similar lesions, or have considered them due to postmortem change. Koch searched in vain for "rents" in the vessel walls to account for the escape of blood. Hyaline degeneration has also been described, but is believed to result from secondary infections and not to be an intrinsic lesion of scurvy (Sato and Nambu, Aschoff and Koch).

Thrombosis of vessels is found both in the neighborhood of hemorrhage and elsewhere, the thrombi at times completely occluding the vessels and giving rise to typical wedge-shaped infarcts. The lung often shows areas of this kind.

Lungs.—Hemorrhages of various size occur in the tissue of the lung or in the air spaces. Hemorrhagic infarcts also have been described, and Sato and Nainbu report hyaline degeneration of the blood-vessel walls. Secondary pneumonias, usually broncho-pneumonic in type, are of common occurrence, and in many epidemics constitute the prevailing cause of death. Tuberculous lesions are also frequently present, and are stated to assume fresh activity as the result of the nutritional disorder. Edema occurs frequently, the fluid in the acini often containing red blood-cells. Subpleural hemorrhages, thickening of the pleura, purulent or fibrinous pleurisy are common lesions.

Heart.—Although hypertrophy and dilatation of the heart have been noted by several observers, microscopic changes have rarely been recorded. Meyer, and also Leven, report fatty degeneration of the muscle fibres, which, however, was found by Aschoff and Koch in only one case. Sato and Nambu described an increase of con-

# SCURVY PAST AND PRESENT

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