likely that in many cases lengthy dental work is being neglected under the pressure of essential war work. It will be noted that "other conditions" constitute a considerable proportion of the causes of absence. This is due in part to the vague nature of some of the medical certificates received at the factories in respect of absentees.

Conclusion

In connexion with the health of factory workers, home circumstances play at least as big a part as working conditions, and it is ordinary sickness that is the chief time-loser. The problem thus overflows from the field of industrial medicine into the spheres of public health and general practice. The inquiry here reported brings out the need for improved and standardized sickness records relating to factories, and underlines the importance of explicit certification by medical practitioners. In preventive medicine, all possible measures against the winter incidence of colds and influenza in the factories are a first requisite. A consideration of factory working hours is inseparable from the problem of sick absence. The health of munition workers, as of the general population, is on the whole being well maintained.

SUDDEN DEATH IN UNSUSPECTED RHEUMATIC CARDITIS

BY

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Sudden death in unsuspected rheumatic carditis is a rare event, and very few cases have been reported (Géraudel *et al.*, 1928; Thatcher, 1929; Breitenacker, 1931; Laplace, 1939; Lisa, 1939; McNamara, 1941). The following is the record of a case occurring in an apparently healthy infant.

Case History

An only child aged 2 years 8 months was apparently in excellent health, playing with his toys, when he suddenly cried out in distress and ran a short distance to his mother in an adjoining room. He continued to cry loudly for a few minutes, and then became faint. Death occurred within half an hour.

Necropsy.—The gross pathological findings were confined to the heart and right lung. Two infarcts were seen in the lung—one near the apex, and the other, slightly smaller, on the lateral surface of the lower lobe. The base of the larger infarct measured $1\frac{1}{2}$ in. in diameter, and the cut surface in each case showed a characteristic triangular outline and a sharp demarcation from the surrounding lung, in which there was no evidence of consolidation. Unfortunately, a careful dissection, with demonstration of the emboli, was not attempted. Examination of the heart showed a general enlargement to 120 g. (normal 55 to 75 g.), as well as rheumatic mitral and tricuspid valvulitis. The vegetations on the mitral cusps were characteristically bead-like, firm, and pale, in contrast to those on the

FIG. 1.—Typical Aschoff body in myocardium.

tricuspid, which were soft and pink, and evidently of a more recent origin. There was no evidence of pericarditis, and the cut surface of the myocardium did not appear unusual.

Histology.—The histological changes were focal in distribution, and several areas of myocardium showed no recognizable variation from normal. A few characteristic Aschoff bodies (Aschoff, 1904) were seen in the interstitial tissue (Fig. 1), and in some sections there was a diffuse infiltration by lymphocytes and polymorphonuclears between the muscle fibres. Some fibres in these areas were swollen and fragmented, with large irregular hyperchromatic nuclei, giving the impression of a rather acute degenerative process (Fig. 2). Bacteria were not seen in any of the sections examined.

FIG. 2.—Myocardial fibres disintegrating.

Commentary

Severe fulminating carditis is becoming very rare in children (Miller, 1937), although subclinical rheumatism is common. The heart itself, when acutely invaded by the rheumatic process, only rarely gives rise to symptoms (White, 1937), and in this case it is probable that the urgent symptoms preceding death were due to the pulmonary infarctions.

The aetiology of lung infarction in general has been exhaustively studied (Belt, 1939), and embolic manifestations in rheumatic heart disease have also been investigated (Weiss and Davis, 1933). In a group of 174 cases of rheumatic heart disease infarction of one or more organs occurred in 45%, the lung being the organ most often affected, and in 21% of the series embolism played a chief or contributory part in the death of the patient.

An interesting feature of this case is the possible relation between the only previous illness and the fatal termination. The appearance of the heart at necropsy, as well as the histological findings, indicates that the disease had existed for some time before death, and it is possible that the attack of bronchitis from which the child had suffered six months previously may have been the initial manifestation of invasion by the rheumatic process.

The relation between upper respiratory infection and rheumatic fever has been studied by several workers (Wilson, 1940), and it appears that in some cases a severe cold or bronchial catarrh may usher in or precede by a variable interval the development of clinical rheumatism. The opinion of most workers in this field, however, is that respiratory infections are not a specific provocative agent in the occurrence of rheumatic fever (Hench, 1938).

In the histological examination the finding of characteristic Aschoff bodies was accepted as proof of the rheumatic nature of the infection, and the other components of the microscopical picture provided additional evidence in support of this conclusion.

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