

that it is during this period that the bacilli are present in the largest number in the tissues. During the stationary period, which varies greatly in duration, according to the severity of the case—the period of high temperature with only slight morning remissions—we have probably to do with a double infection—the true typhoid infection and septic infection of the intestinal ulcers. The proverbial uncertainty of typhoid fever, the liability at any time during the stationary period, even in relatively mild cases, to the appearance, almost without warning, of most serious symptoms is probably to be traced to this secondary infection, which may lead to rapid extension of ulceration with all its attendant dangers. The importance of taking the disease in time is universally recognized; the worst cases are seen in persons who have tried to resist the *malaise* of the initial stage, and have continued about their work or made fatiguing journeys. The exhaustion thus produced increases not only the severity of the true primary infection, but also that of the secondary ulcerative affection.

FATIGUE AND DISEASE.

THE part played by fatigue in the production of disease has received a good deal of attention of late years. The earlier studies of Carrieu, Peter, Fournol, Revilliod, and Rendon, have been continued by other observers, notably by Marfan, who has contributed an exhaustive paper upon the morbid effects of overwork to the *Gazette des hôpitaux*.

The amount of work or its kind has intrinsically but little to do with overwork, and some races, as the negroes in the cotton-fields and the Chinese, though they toil more steadily and terribly than any other people, seem to possess a special power of resistance to fatigue. Age, race, cosmic conditions, absence of proper training and force of habit, non-congenial pursuits, sudden change of vocation, and want of sleep and recreation are all factors in overwork. All work and no play does more than produce pure simple dullness, says the New York Medical Journal; it starts morbid processes induced by poisons generated within the organism itself. The deviations from health caused in this way are usually expressed by heart disturbances and typhoid conditions. Sporadic fevers, known as abortive typhoid, ephemeral, gastro-intestinal, billious or malarial, and so-called subacute rheumatism, are often of this nature. And various cardiac abnormalities, such as heart strain and forced or irritable heart, are often, especially among athletes, due to fatigue or strain.

The fevers of overwork are of three kinds or degrees, the Journal continues: "The first is simply a typhoid state, without rise of temperature, purely dynamic, and soon relieved by rest. The second has for its cause more prolonged fatigue without regular periods of repose. This is the acute form, a true fever, with rise of temperature and alteration of the liquids of the body. The third is a typical typhoidal condition, with transient or permanent lesions. It is the result of arduous effort, such as forced marching, night watching followed by daily toil, the cramming process in superficial schools, or a sudden direction of energy into unaccustomed channels. There are changes in the solid as well as the fluid portions of the economy. The heart and blood-vessels, the kidneys (as in infectious disease), and the spinal cord are the organs most likely to be affected. According to Rendon, this is the grave form of fever due to fatigue, the term subacute being reserved for cases where death from exhaustion takes place too soon for the development of the foregoing phenomena," as in the case of the soldier who fell dead after announcing the victory of Marathon to the Athenians.

In Algeria, for example, too, Bertherand noted two deaths occurring in native