**The Mechanism of Lead-poisoning.**—Erlenmyer (*Zeitsch. f. Exper. Path. u. Therapie*, September 16, 1913, Band xiv, Heft 2) has undertaken experimental studies for the purpose of determining whether chronic lead poisoning depends upon an accumulated mass of the metal in the body, or upon the existence of a more or less concentrated solution of lead in the circulatory cell fluids, and cell fluids in general; that is, upon the existence of what Erlenmyer calls a "lead-stream." He declares in favor of the latter, and his contention can scarcely be better explained than by giving the example of a woman who worked with cyanide of mercury and lead during an eight-and-a-half-hour day for long periods in perfect health. When her day's labor was lengthened to ten and a half hours, in three months she developed severe symptoms of chronic lead poisoning from which she recovered in the next three months. She again resumed her work at eight and a half hours per day, and during the next year remained perfectly well. The explanation was that in eight and a half hours per day she never attained the concentration of "lead-stream" which meant the minimal toxic dose, but that in ten and a half hours daily work she did. Erlenmyer has performed a large series of very painstaking experiments, and considers that the relatively insoluble lead salt enters into a solution-like relationship with the body substances, so that a lead albuminate combination is thrown into the circulation, flows through the blood, and is in part excreted through the urine and feces. Lead in such combination comes into relationship with all the cells of the organism in its way through the body, but does not tend to be retained in a constantly increasing amount. It is true that if certain organs be examined for lead, it is found, in the nervous system, for example, and in the blood and other body juices. Yet this does not mean that the metal actually enters into the cells and becomes anchored there as an alkaloid might. Nor is it likely that the lead which was dissolved, and was carried in a soluble form in the circulation, became precipitated in the individual cells, or formed a permanent chemical combination with the cell molecules. Riva has shown that in animals which had been injected with lead acetate, the lead was only found in combination with the globulins, while the nucleoproteins remained free; which seems to show that lead is actually present in solution as lead albuminate, and remains in this soluble form throughout. The element of time must also be considered in the accomplishment of a chronic poisoning by lead. Erlenmyer states that we can form a kind of ratio between the body weights and the amount of lead, and the time which elapses. He found that 1 mg. per 1000 gm. body weight produced a fatal result in fifty to sixty days, and that the minimal amount was 0.7 to 1 mg., although in certain animals more than one might be required. But the density and concentration of the "lead-stream" is more important than the duration of time. This formula was determined in cats which were injected subcutaneously with lead carbonate, and in such animals the definite, permanent retention of lead does not occur.

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**Tobacco and the Blood-pressure.**—John (*Zeitsch. f. Exper. Path. u. Therapie*, September 16, 1913, Band xiv, Heft 2) has conducted a most painstaking series of observations on the effect of smoking upon

the blood pressure. He finds that the smoking of two moderately strong cigars is sufficient to produce entirely characteristic variations of blood pressure. During the time of smoking there is a definite increase of the diastolic pressure, and a primary increase of systolic pressure, with a subsequent fall. These alterations are observable for as long as two hours after smoking has ceased. John considers that the result is brought about by the stimulation to contraction produced on the vessel walls, whereby heightened tonus is produced, a fact which has been experimentally determined. Pulse frequency is not always affected in the same way, sometimes the pulse is actually slowed, but usually there are greater variations than are to be observed in a control. Eight to ten Russian cigarettes produced the same result upon the blood system as two moderately strong cigars, and between various kinds of cigarettes very different observations were made. The observer found that even four cigars of a certain brand which he names, did not influence the blood pressure in the slightest, due probably to the fact that they are very poor in nicotine. Eight to ten cigars divided over a day are not entirely without effect upon the blood pressure; but there are so many influences that affect the blood pressure in the course of the daily life, that it is a little difficult to lay the blame definitely upon the tobacco. Cigars poor in nicotine, however, produce decidedly less effect than those which are strong in nicotine; while twenty-five or thirty cigarettes produce an effect scarcely to be distinguished from that of eight to ten moderately strong cigars. John considers that the result of his observations is that a definite influence upon the bloodvessels has been once more proved, and that nicotine is able to produce vascular changes of an arteriosclerotic nature. John goes on further to state that coronary disease should be the signal for an uncompromising attitude against the use of tobacco, and disposes of the argument that many old men with coronary disease smoke enormously without killing themselves, by stating that this does not speak for the harmlessness of tobacco, but for the enormous resistance which certain individuals possess.

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**Tuberculin in Healthy Animals.**—KLOPSTOCK (*Zeitsch. f. Exper. Path. u. Ther.*, April, 1913, Band xiii, Heft 1) finds that repeated subcutaneous injections of old tuberculin begun at 0.1 to 5 c.c., and totalling as high as 26 c.c. for a single animal, the doses administered at intervals varying between three days and a month, gave no reaction in the majority of test animals. Six guinea-pigs out of 20 died of peritonitis. Animals so treated with tuberculin showed no increased resistance to subsequent infection by experimental means, nor did the course of the disease or the appearance of the organs at autopsy indicate any differences from control animals. The sensibility of animals first injected with tuberculin and subsequently injected by tuberculosis was found to be diminished. Repeated doses of tuberculin produced no formation of antibodies in healthy guinea-pigs.

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**Spirochetes.**—ARNHEIM supplements his previous observations upon spirochetes, made at the Robert Koch Institute in Berlin (*Zeits. f. Hyg. u. Infekt.*, 1914, Band lxxvi, Heft 3). He used spirochetes from syphilitic material and some strains of refringens. It needs but a short period