

The Sour Milk Question.*

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Indicanuria: Significance and Interpretation.—The interpretation of indicanuria appears to be one of the most confusing problems with which the physician has to deal. One must not allow himself to be dominated with this question of intestinal auto-intoxication. It is not the cause of everything. What is required is a conservative opinion, not too optimistic or too pessimistic, and it should be based upon careful and long-continued clinical observation. Take nothing for granted, but apply what you read and hear to your clinical experiments, and decide as to the value of this question yourself. In the first place, urinary indican absolutely signifies putrefaction, and, in the absence of an extensive putrid process elsewhere in the body, it is positively indicative of intestinal putrefaction. But every case of indicanuria does not necessarily present symptoms, and it is this fact that causes all the confusion. A physician starts to investigate the subject. To his surprise and satisfaction, he may find that all his cases of obscure etiology present an intense indicanuria, and that the symptoms disappear after this abnormality has been overcome. Then, to his chagrin, he will note similar cases in which urinalysis fails to demonstrate indican in excess. Again, he will come in contact with cases associated with an indicanuria, but will note that the symptoms continue after the indicanuria has disappeared. To explain and understand such contradictory occurrences it is necessary to consider personal susceptibility, individual toleration, and similar phenomena. The bromides, iodides, mercury, quinine, arsenic, and other drugs produce very distressing symptoms in some individuals, while others may partake of them with impunity. This is personal susceptibility. Toleration may be exemplified by noting the effect of alcohol. A small amount of this drug will intoxicate one who is unaccustomed to its use, but one who persistently indulges in it may require a very large dose to obtain the desired result. And when taken steadily in small

amounts throughout one's life, the baneful effect of such indulgence may not be noticed until the individual has reached the age of forty or fifty. These examples apply equally well to intestinal putrefaction. If this process is acute or temporary, one would only expect acute symptoms, more or less severe, according to the grade of the putrefactive process. The usual manifestations are those of biliousness, such as vertigo, anorexia, headache, nausea, mental and physical fatigue, etc. The chronic type is more likely to be productive of anæmia, arteriosclerosis, neurasthenia, and other manifestations of disease depending upon the character of the toxins elaborated. In this connection it might be stated that indol itself has been proved to be decidedly toxic to the organism (Richard, Howland, Lee, Herter). A great deal depends on the more or less complete oxidation of the products by the system. It has been shown by Herter, Wakeman, Petrone and Pagano that the enterogenic toxins are oxidised and paired off chemically, mainly in the liver, but also in the epithelial cells of the intestinal mucosa, in the kidneys, in the lungs, and probably also in the muscles. Now, if the body is able to promptly pair off and eliminate these toxic substances, no harm will be done other than an increased amount of labour for important and hard-working organs to perform, but just as soon as the tissues entering into this process become impaired by disease or overwork, then symptoms more or less severe are likely to become manifest, depending, of course, on the amount of toxic material being retained in the system and the organs and tissues upon which they exert their influence. In this manner intestinal auto-intoxication may be the sole etiological factor in a given case, it may be a contributory cause, and finally, it may have nothing directly to do with the disease presented by the individual. It would require a long paper to properly discuss this one phase of the question, but time and space will not allow of a longer consideration at present.

Diagnosis.—In diagnosing intestinal putrefaction it is advisable to consider the symptoms as presented, and to test the urine for indican. The absence of indican, of course, does not exclude a putrefactive process in the intestines, because the process might be of the saccharolytic type, and in these cases the urine should be tested for all the ethereal sulphates. The test for indican that I have found the most serviceable is a modification of the Obermayer method. The stock solution consists of a .3 per cent. solution of C. P. ferric chloride in pure hydrochloric acid. Five c.c. of this re-

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