

9. After division of its nerves the spleen remains flaccid and then wastes, as is generally the case with erectile tissues when their vaso-motor nerves are paralyzed. —*Med. Examiner*, July 26, 1877.

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*Observations on Gastric Digestion.*

F. KRETSCHY has published (*Deutsches Archiv für Klin. Med.*, Bd. xviii. p. 527) some observations on digestion made on a servant girl, aged 25, who was otherwise healthy, but suffered from a gastric fistula, consequent on the bursting into the stomach of an abscess originating in disease of the seventh rib of the left side. The opening was three centimetres in diameter (one inch), and from it protruded a red and easily bleeding fold of mucous membrane. A sound could readily be introduced into the alimentary canal, and conversely a portion of any food that was swallowed immediately made its appearance at the external orifice of the fistula. When Kretschy commenced his experiments the opening had already existed five months. Kretschy sought to determine the duration of normal digestion; and as the activity of digestion is dependent on the degree of acidity of the contents of the stomach, he endeavoured to ascertain how soon after food the stomach gave an acid reaction; when the formation of acid reaches its maximum; how it rises and falls, and how the alimentary canal behaves. He found that the digestion of breakfast lasted five and a half hours, the acid reaction attaining its maximum in the fourth hour, and falling to neutral in the course of the following hour and a half. The digestion of the mid-day meal (dinner) lasted seven hours, the maximum acid reaction occurring about the sixth hour, and the stomach becoming neutral at the end of the seventh hour. Examination of the contents by means of the microscope at the end of the fifth hour demonstrated the presence of numerous muscular fibres and starch granules. The digestion of supper lasted from seven to eight hours. At the catamenial period the stomach never at any time of the day presented a neutral reaction. The addition of 3 ccm. of alcohol prolonged the period of digestion of dinner; coffee prevented the acidity from becoming so great, and prolonged the duration of digestion one hour. Pepsin in 7-grain doses did not shorten the period of digestion. Distilled water did not cause the stomach to become acid. Alcohol becomes converted into aldehyde in the stomach.—*British and Foreign Med.-Chir. Review*, July, 1877.

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*On the Cause of Sleep.*

Dr. W. PREYER, Professor of Physiology at the University of Jena, at the late meeting of the International Medical Congress, in a paper which he read on the above subject, presented the following conclusions:—

1. The researches which I have made on this subject lead to the following conclusions. Natural, periodical sleep is a condition totally different from pathological or artificial conditions resembling it, such as somnolence, coma, asphyxia, and narcosis.

2. Natural sleep has often been confounded with these states. The chief difference will be found in the circumstance that natural sleep is always preceded by some fatigue of muscles, organs of sense, or brain.

3. No mental phenomenon can manifest itself unless the brain be supplied with a certain amount of oxygen. The latter is carried to the brain by the bloodvessels. Whenever the ganglionic brain-cells receive a diminished quantity of blood cerebral action is suspended as it is during sleep.

4. Now, as the brain of a sleeping animal receives as much blood as it does when the animal is awake, we are compelled to infer that the influences of oxygen on the waking and the sleeping brain are different.

5. During an active condition of mind or body certain substances are brought into existence which are not found (or, at all events, very sparingly) during a state of rest—lactic acid, for example, and creatine. These latter substances may accumulate in the blood, and as they have a great affinity for oxygen they appropriate a principle required for active exertion. The first stage of this accumulation characterizes fatigue; the second stage gives rise to sleep; the third stage, when oxidation has been completed, is followed by awakening.

6. In a word, the products of muscular work, especially lactic acid, when artificially introduced into the system, are capable of inducing a sense of fatigue and even sleep, when all external causes of excitement are removed.

7. It may, and often does, happen that the artificial introduction of lactic acid or the lactates is not followed by the effects just mentioned. Such cases require a careful study of various influences before they can be explained; but I maintain that they do not shake, much less overthrow, the foundation of my theory.—*Med. Examiner*, July 26, 1877.

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## MATERIA MEDICA AND THERAPEUTICS.

### *The Therapeutic Action of Salicin.*

In a lecture lately delivered before the Berlin Medical Society, Professor H. SENATOR summed up his experience of the use of salicin in more than seventy cases of different kinds, in which the aggregate number of individual observations amounted to at least 500. The following abstract of the lecture, which is published in full in the *Berliner Klin. Wochenschrift*, No. 14, 1877, contains the most important conclusions at which he arrived. The quantity of salicin necessary to produce a definite effect on an adult ranges, on the average, between eight and ten grammes, but even larger doses may be taken without any injurious result. The drug is best given in powder inclosed in wafers (*Oblaten*), each containing from 1 to 1.5 gramme. Solutions, each tablespoonful of which contains from 0.8 to 1 gramme, are also convenient, but require a large admixture of sugar to cover their strong bitter taste. Senator's observations deal with (1) the antipyretic, (2) the antiseptic, (3) the specific, and (4) the sedative action of salicin. Its antipyretic action was tested in typhoid fever and phthisis pulmonum, the temperatures being taken in the morning between 7.30 and 8.30, and in the afternoon between 4.30 and 5.30, the thermometer being usually placed in the axilla. Comparisons were made from time to time between the effects of salicin and those of salicylate of soda and salicylate of quinine. The latter drug, which Dr. Senator has constantly used for nearly a year and a half, almost always exerts a decided action on the temperature when given in doses of 1 to 1.5 gramme at a suitable time. Nine cases of typhoid were treated with salicin, in all seventeen times, and with one exception with decided reduction of the temperature. The greatest fall observed was 2° Cent.; in other cases all that was noticed was, that when the salicin was given in the forenoon, the expected evening elevation of temperature either did not occur, or was relatively very slight. The largest reductions of temperature appeared to follow the administration of the drug in the evening. The reduction was not always proportionate to the dose, perhaps owing to individual peculiarities, and to the varying severity of the cases. The action of salicin was often prolonged for twenty-four to thirty-six hours, whereas that of quinine is ordinarily over in ten, or at latest twenty hours, and that of salicylic acid still earlier. Salicin never reduces the temperature so powerfully as quinine or salicylic acid. Its use is never followed by copious perspiration.