

the globules in nowise altered in form. It would appear that the deleterious principle, being in solution in the blood, acts directly on the nervous system.

Nevertheless, an attentive examination of the brain and its appendages, have not enabled MM. Leroyer and Prevost to discover on what particular parts the digitaline acts. The cerebral sinusses were gorged with blood, but the cerebral substance itself did not appear to have suffered any change.

It is desirable that the chemical and physiological experiments of M. Leroyer on this substance should be repeated.

SALICINE.

Willow-bark having been frequently employed against intermittent fevers, M. Leroux, a pharmacist of Vitry-le-Français, succeeded in extracting from it a substance in which probably reside its febrifuge properties. He obtained it by the following process:—

Boil three pounds of the willow bark (*salix helix*), in 15 pounds of water, holding four ounces of subcarbonate of potass in solution; strain and add to the cold decoction two pounds of fluid subacetate of lead; filter, add sulphuric acid and precipitate the whole lead by sulphuretted hydrogen gas; saturate the excess of acid by chalk; filter again, evaporate and neutralize it by diluted sulphuric acid; withdraw the colouring matter by charcoal, and filter it hot: crystallize twice if the salt is coloured after the first crystallization, and dry in the shade. This process gives about an *once* of salicine. M. Leroux obtains five per cent of the weight of the bark. It exists in the bark of many species of *salix*, as the common willow, *Salix monandra*, *S. incana*, *S. fissa*, &c.

Salicine thus obtained is in small, silky groups of pearly-white crystals, is exceedingly soluble in water

and alcohol, insoluble in ether, is extremely bitter, and smells like willow-bark.

MM. Leroux and Gay-Lussac ascertained that salicine is not a vegetable alkali, for though very soluble in water it has no alkaline reaction, has little, if any, neutralizing power, and moreover contains no azote, whereas azote is largely developed in vegetable alkaline bases.

Medicinal Properties of Salicine.

It is a powerful febrifuge, as I have verified, in numerous cases of intermittent fevers, and other periodical affections, at the Hôtel Dieu. I have frequently found it succeed when the sulphate of quinia has failed, and vice versâ.

Mode of administering Salicine.—I most generally give twelve grains in twenty-four hours, and rarely exceed this, though it may be done without any inconvenience; having lately had the proof in a case, where I gave from twenty-four to thirty grains. This, however, will very seldom be expedient.

[The first chemists who analyzed the bark of the willow, discovered in it no alkaline principle similar to quinia, or cinchonia, and it gradually fell into disrepute. Fontana, however, maintained the existence of a certain febrifuge principle to which he gave the name of salicine. His opinion has since been corroborated by Buchner, Rigatelli, and as seen in the text, by Leroux, who was the first to employ it in France. Numerous trials were made of it in various quarters, and its praises were sounded in no ordinary tone. Some trials, however, made at La Charité, by M. Pelletier, showed that salicine, though very bitter, seemed to be far less active than the principle of the cinchonas.

Dr. Richelot (Archives Générale de Médecine, September, 1833,) mentions the trials made by many of its supporters, the results of which appear to be alto-

gether negative, while other experiments tended to show that it was possessed of no obvious febrifuge power. The doses given in these experiments varied from six to twenty-four grains. With the view of settling the question, M. Andral instituted several experiments, the particulars of which are recorded in M. Richelot's memoir. Ten patients of different sexes, whose ages varied from seventeen to thirty-eight, were selected for the purpose, and after considering the results of these, as well as of all that has been mentioned by others, M. Richelot comes to the following conclusion: 1. Salicine appears really to possess febrifuge qualities, but in so small a degree that we ought not to hesitate a moment in preferring the sulphate of quinia. 2. Salicine may be employed in any case where irritation or inflammation exists, contra-indicating the employment of the sulphate of quinia, in hectic fevers with periodical paroxysms and abundant diarrhœa, or where sulphate of quinia cannot be had. 3. It is not only unnecessary but injudicious to employ it at the beginning in high doses. Six or eight grains administered between the paroxysms, on the same principles as quinia, produce as good or even better effects than higher doses; though, if necessary, the doses may be increased.—*Tr.*]

LACTIC ACID.

Process for procuring Lactic Acid

It is extracted both from milk and from the juice of beet-root. If from the latter, it should be left in a stove of a fixed temperature, between 25° and 30°. After a few days, viscous fermentation takes place, and hydrogen mixed with carburetted hydrogen is abundantly evolved. The fermentation ended, and the liquid restored to its former fluidity—which generally occupies two months—it is evaporated to a sy-