

The Postmaster.—This spring bears a very close resemblance to the Priest, both in its situation and in its chemical properties, and differs only in containing an even larger proportion of free sulphuric and hydrochloric acids. It may, in fact, be looked upon as a stronger Priest water. It issues from the ground at a temperature varying from 98° Fahr. to 110° Fahr., and the total outflow is about the same as, or rather less than, the Priest spring.

The above springs are typical examples of acid, sulphurous thermal water, and form a pale-green solution, perfectly clear, except that on standing exposed to the air there is a tendency to the precipitation of flocculent sulphur.

Class 2.

There is another class of acid water, constituting a connecting-link between the foregoing and the hot mud-springs—that is to say, an acid water containing a considerable and varying amount of mineral mud in suspension. Such a spring is the Coffee-pot—a spring which it is hard to know whether to class under the head of mud or water, and the Cameron Spring arising a few yards from it. These waters, while owing their virtues partly to the salts and free acids in solution, act still more powerfully from the amount of mineral mud in suspension. They had a great reputation among the Maoris, and have fallen into an altogether undeserved neglect. It is hoped that when the new buildings are erected, increased use will be made of them for immersion baths.

These springs find their way through a thick stratum of mineral mud, which generally reaches to the surface of the ground, but may be entirely overlaid by a thick rocky crust of silica. As a rule they are also characterized by a very large evolution of gas, chiefly sulphuretted hydrogen and sulphurous acid, with a certain amount of carbonic acid, while they differ from the Priest water in the small quantity of alum in solution.

GROUP II.—THE ALKALINE SULPHUROUS WATERS.

We have seen that the acid waters are without parallel in Europe, and possess certain unique advantages for external use. The alkaline waters represent a type common to many of the most famous spas of Europe, and are suitable both for bathing and drinking. They differ from the majority of European waters in being more siliceous.

These waters are characterized by their very high temperature (180° Fahr. to boiling-point), perfect clearness, and soft emollient feel. As a rule they contain somewhat less sulphuretted hydrogen than the acid waters. Springing as they do from greater depths than the acid waters this is only what might be anticipated, as the gas is believed to be formed by the reduction of the sulphates of the alkaline earths by organic matter under the influence of pressure and heat. Seen in bulk, in a perfectly fresh condition, they present every gradation of colour between a faint blue and a delicate green, but on standing exposed to the air for some time the water is apt to become opalescent as a result of oxidation.

Used for bathing purposes these waters possess certain medical attributes which may be considerably modified by the method of bathing employed. And herein lies their great utility. Taken as simple immersion baths about the body-temperature they act as nervous sedatives, an effect greatly increased by the action of the sulphuretted hydrogen present. Prolonging the immersion, the action of the alkaline salts and the dissolved gases removes the greasy secretions and dead cells of the skin, at the same time flushing it with blood, while the silicates in the water exert a bland emollient action. Hence the value of these waters in certain forms of skin-disease. But it is for douche purposes that these waters are most of all valuable, more especially for that combination of douching and massage known as Aix massage. For this the bland nature of the water, combined with an almost slippery feel, a quality permitting the masseur's hands to glide easily over the bather's skin, and which is really due to a soapy material formed by the action of the alkaline water on the sebaceous secretions of the skin, renders the alkaline waters particularly suitable. Doubtless, too, the siliceous nature of the water increases this effect. At Aix-les-Bains the same quality appears to be due to a low form of vegetable growth in the water called glairine.

For internal administration the alkaline sulphurous waters have valuable properties, and also certain drawbacks, the most serious of the latter being their extremely nauseous taste. Happily, however, if the water is taken at first in small doses, which are gradually increased from day to day, the distaste not only steadily lessens but is often replaced by a positive enjoyment. The water should be taken as fresh and as hot as possible, sipped rather than gulped down, and should be taken on an empty stomach either before meals or in the cooling-room after or before a bath, according to the special effect desired. Thus taken before meals it cleanses the stomach, neutralises acidity, and stimulates the flow of gastric juice in virtue of its alkalinity. In addition, the sulphides, sulphates, and chlorides in solution exert a specific influence on the digestive glands, more especially stimulating the liver, so that the water relieves engorgement of the liver, hæmorrhoids, and, indirectly, constipation. At the same time the amount of iron present, though small, is sufficient to exert a distinctly tonic influence. There remains one important ingredient whose action must be regarded as still open to question—the silica. What therapeutic action, if any, the silicates exert is still a moot point, and my own experience in their use has been hardly long enough for me to venture a positive opinion.

It will be seen from the above that the alkaline sulphurous waters—such as the Rachel—are fairly potent medicines, and not to be taken in indiscriminate quantities without medical advice. More especially patients with greatly enfeebled digestion, profound anæmia, or persons suffering from functional disturbances of the heart should avoid their internal use.

One other application of these waters remains to be considered—their use, in the form of vapour, for inhalation and for vapour baths. At present no facilities exist for inhaling the vapour, but in the new baths I hope to see installed a complete inhalatorium. By increasing the mucous secretions, relaxing the respiratory tissues, and softening and desquamating the epithelium, inhala-