tion of these vapours would be distinctly beneficial in certain cases of chronic bronchitis and asthma.

While on the subject of inhalation it may be remarked that a good deal of involuntary inhalation goes on during a bath, especially when, as in the old form of baths, these are built directly over the source. The amount of sulphuretted hydrogen that bubbles up through the water in the Priest and Postmaster Baths is very considerable, and is largely responsible for the not infrequent cases of fainting in those baths. While not without its use as a skin-stimulant in the water, and for its action on the nervous system when inhaled, the good is so much more than counterbalanced by the evil that it would be better in all future baths not to build them over the springs, but always to lead the waters to them. The carbonic-acid gas which is present in several of the springs is hardly in sufficient quantity to have any marked therapeutic or toxic effect.

Vapour baths in which the body or part of the body is immersed in the steam arising from the mineral water, form a part of the armamentarium of nearly every spa in Europe, and ample provision for them has been made in the designs for the new bath buildings. But, while at present deficient in this respect, Rotorua possesses a "sulphur-vapour bath" which is believed to be unique. From a hot sulphur cavern immediately below the floor of the Blue Bath, steam and hot fumes, principally sulphur-dioxide, in a very concentrated form are led into a vapour "cabinet" of the ordinary type, in which the patient sits immersed, with his head projecting through an aperture. It is hardly possible to exaggerate the value of this bath in certain cases. While possessing all the properties of an ordinary vapour bath, the sulphurous fumes of themselves have an intensely stimulating effect on the skin; while, in addition, sulphur in the finest possible powder is deposited on the whole surface of the body. Under such a combination of circumstances quite an appreciable amount of sulphur is absorbed into the system, while at the same time all the effects mentioned before as attributable to immersion in Priest water are brought about.

Source of the Waters.

The appearance of an acid and an alkaline spring alongside flashes at once across the mind the inevitable query "Why?" How is it that two such antagonistic waters can outflow so closely together without mixing and neutralising one another? Evidently their sources, or at any rate one of their sources, must be far distant from their outlet. Very deep vertical or sinuous fissures in the earth's crust might account for the phenomenon, or one vertical shaft penetrating a horizontal and superficial water-bearing stratum. A close examination of a large number of springs inclined me to the latter opinion.

The foreshore of Lake Rotorua for more than a mile is riddled with acid springs, which seem, so to speak, to ooze from the surface pumice. By digging down a few feet in almost any part of this area one strikes a layer of acid sulphurous water closely resembling the Priest water. It is significant, too, that the temperature of the Priest Baths is materially lowered by a heavy rainfall. The alkaline waters in this area, on the other hand, are ejected with a certain amount of force from deep shafts, whose walls are lined with a silicate deposit soft under the water, of stony hardness where exposed and dry. It is impossible to measure the depth of these shafts, as their walls are not vertical, but they are certainly of considerable depth—the Rachel Spring, for instance, has been sounded to a depth of 150 ft. There is a close resemblance, both in the nature of the outlet-shaft and in the character of the water, between these springs and the geysers of Whakarewarewa; and even the quietest and most placid pools—such as the Rachel—will exhibit geyser action if the pressure on them is suddenly lowered, as by rapidly running off a large quantity of water.

The physical configuration of the springs, then, would point to the supposition that the Priest water is a superficial layer separated from a deeper level of alkaline water by some impervious stratum, pierced here and there by vertical shafts which allow the alkaline water, under a considerable degree of pressure, to reach the surface. To test the truth of this theory shafts were sunk in various parts of the Sanatorium grounds, both in sulphur-beds, where one might expect to obtain hot water, and in apparently sound places overgrown with trees 30 ft. high. In all cases hot, acid, sulphurous water was obtained at a distance varying from 5 ft. to 12 ft. below the surface. Certain strata, more especially a black-cinter layer, contained water in larger quantities and higher temperatures than others, the thermometer registering anything from 110° Fahr. to 160° Fahr. An analysis of one of these "artificial springs" will be seen below under heading A. On digging through the floor of spring A we came upon a dense stratum of white clay some 12 ft. thick, and boring through this with a 6 in. iron pipe we came on a plentiful supply of a neutral water, richer in chlorides, of a temperature of 187° Fahr., and altogether more approximating in character to Rachel water (analysis B).

Analysis, in Grains per Gallon.

	A.	B.
Silica	16·80	16·80
Alumina	20·36	4·10
Iron-oxide	1·10	0·15
Lime	0·56	0·56
Magnesia	0·61	0·20
Soda	2·46	13·33
Potash	0·40	0·80
Chloride	3·55	14·41
Sulphuric acid	57·40	12·60
Total	103·24	62·95
Sulphuretted hydrogen	6·20	2·98
Acidity, calculated as sulphuric acid	11·31	Neutral.

Spring B bears a close analogy with the Spout Bath at Whakarewarewa, which is also a nearly neutral spring.