

REPORT UPON THE WATER FROM BECKET'S WELL.

Extract from Report dated 19th March, 1952,
made by Messrs. Briant & Harman of 16, Southwark Street, S.E.1:-

"The composition of the water represents a supply which, like all others, has originated in rain which has fallen on ground and over centuries of time has stabilised to the composition we find. The carbon dioxide dissolved from the air by the rain is reinforced by carbon dioxide released in the life that occurs in the surface layer of soil through which this water passes, but because the amount of chalk taken up is fairly moderate it seems likely that the surface layer of soil is a relatively thin one. The same gas, carbon dioxide, accounts for the solution of a little magnesia.

The water passes through, and indeed serves to facilitate, an active life in the soil which is balanced and complete for, as it reaches the spring, there has been complete oxidation of organic matter to nitrate. The small amount of calcium sulphate or gypsum has been directly dissolved from the strata and in turn may reflect the oxidation of another form of life many centuries ago. The traces of chlorides of sodium, potassium and calcium are leached from the soil which, by a mechanism of its own, can retain sufficient quantities for the continual perpetuation of life and, whilst sodium may be made up from the sea in minute quantities of spray by prevailing westerly winds, it is possible that the potassium is a wasting asset and accounts for the need in good farming for introducing this element.

This exhausts the explanation of the relatively small amounts of mineral matter noted in the water and indeed it is an example of the very high purity which can be obtained from good chalk waters. Nevertheless a sudden increase in the animals grazing on the soil could bring about a pollution, although in practice this is not likely to arise because the grazing abilities are probably limited, but other disturbances such as the setting up of houses and drainage systems might bring about a deterioration in quality as has been noted in more continuously polluted areas over chalk, as for example at Croydon. One feels, however, perfectly safe in assuming that under the conditions obtaining in earlier times the supply was, as now found, a very pure and potable drinking water."

See continuation sheet for analysis:

The following is the probable constitution of the
Saline Residue:-

	<u>Grains per Gallon</u>	<u>Parts per 100,000.</u>
Sodium Chloride	0.94	1.34
Potassium Chloride	0.48	0.69
Calcium Chloride	0.94	1.34.
Calcium Nitrate	3.10	4.43.
Calcium Sulphate	3.04	4.34.
Calcium Carbonate	15.38	21.97
Magnesium Carbonate	0.92	1.31
	<u>24.80</u>	<u>35.42.</u>

BACTERIOLOGICAL EXAMINATION.

Number of colonies developing
per cc.of water after growing
on agar medium at 37° C.for:

24 hours Nil
48 hours Nil.

Probable number of Coliform
Organisms in 100 ccs. of
the original water..... Nil.

This is a pure chalk water fit for any potable or
domestic purpose.

Sample of water taken from
Thomas a Becket's Well.

CHEMICAL ANALYSIS:

	<u>Grains per Gallon.</u>	<u>Parts per 100,000.</u>
Saline Residue	24.80	35.42.
Lime (as CaO)	11.40.	16.29.
Magnesia (as MgO).....	0.44	0.63
Soda (as Na ₂ O)	0.50	0.71
Potash (as K ₂ O)	0.30	0.43.
Sulphates (as SO ₃).....	1.79	2.56
Nitrates (as N ₂ O ₅).....	2.04	2.91
Nitrites (as N ₂ O ₃).....	Nil	Nil
Chlorides (as Cl ₂).....	1.40	2.00
Iron (as Fe)	Nil	Nil
Poisonous Metals	Nil	Nil
	<u>Parts per Million.</u>	
Ammonia, Free	Nil	Nil
" Albuminoid	Nil	Nil
Oxygen required to oxidise organic matter. 4 hours -		0.005
$\frac{1}{4}$ hour. -		Nil

See Cont: Sheet.