

Bits of the same were observed mix'd with a very slimy *Mucus*.

He liv'd 21 Hours after the second Coat was drawn from him, and died in the End somewhat suddenly, tho' in his perfect Senses. I must add, that I never saw one in this Disorder attack'd with a *Delirium*.

VII. *An Examination of the Strength of several of the principal purging Waters, especially of that of Jessop's Well; by the Rev. Stephen Hales D. D. & F. R. S. communicated in a Letter to Cromwell Mortimer M. D. Secr. R. S. with a Letter from Swithin Adey M. D. F. R. S. to Dr. Hales, on the Virtues of the said Well.*

An Account of the several Quantities of Sediment which were found in a Pound Averdupois of the following purging Waters, evaporated away to Dryness, in Florence Flasks, cut to a wide Mouth; viz.

		Grains
Read May 24. 1750.	1. Marybon-Fields near London	24
	2. Peterstr. Brew-house Westm.	27
3.	Ebsham	34
4.	Scarborough,	40

And it was found nearly the same by Dr. Shaw and Dr. Short: A little more or less, according

according to the Wetness or Dryness of the Seasons $\frac{1}{3\frac{1}{2}}$ of this in calcarious Matter; the rest, mostly what is called nitrous Salts, on account of the oblong Chrystals which it shoots into.

5. *Dog and Duck, Lambeth* - - - 40 $\frac{1}{2}$
6. *Kilburn, four Miles from London, in the Way to Edgwar* - - - 43
7. *Acton* - - - 44
8. *Cheltenham, Gloucestershire,* - - 60

Dr. Short found the following Proportions in *Cheltenham* Water; viz.

Sept. 1738.	calcarious Sediment	$\frac{1}{10\frac{1}{6}}$	of	74
Dec. 1738.	- - - -	$\frac{1}{14}$	of	42
July 1739.	- - - -	$\frac{1}{9\frac{1}{8}}$	of	70

He says it is the best and strongest nitro-calcarious Water in *England*, very bitter, having only a little subtil impalpable Earth mixed with its Salt.

9. *Cobham Well, a Mile South of Church Cobham, Surrey,* once 68 Grains, another time 60 Grains - - - 68
 10. *Jessop's Well, on Stoke Common, in Mr. Vincent's Manor, about three Miles Southward of Claremont, Surrey, Sept. 11, 1749.* after long dry Weather, 82 Grains in a Pound of the Surface-Water - - - 82
- October 16, after a considerable Quantity of Rain, the Surface-Water yielded but 60 Grains Nov. 21, the Surface-Water yielded 65 Grains.

This great Inequality of the Strength of the Surface-Water put me upon trying whether the Water at the Bottom of the Well, near the Springs, were stronger than the Surface-Water. And in order to this, I procured, *Dec. 11*, a Bottle of the Water near the Bottom, which was ten Feet below the Surface of the Water; which was done by tying an empty Bottle to the End of a long Pole, with a Line fixed to the Cork, to pull it out when at the Bottom, for the Water to fill it: And I had at the same time another Bottle full of the Surface-Water. The lower Water yielded 82 Grains; the Surface-Water but 48 Grains; and it was the same upon a second Evaporation of those Waters. Hence we see how much stronger the Water near the Bottom is, than at the Surface; even when the preceding Rains have been but moderate; for they had not as yet been sufficient to raise the Springs in this Country much. Hence we see that the stronger lower Water may easily be come at by means of a Pump; as also, that the upper Land-Springs, soon after Rains, make the Water near the Surface weaker: But, in long dry Weather, when there are no Land-Springs, the Surface-Water, and that at the Bottom, are nearly of an equal Strength: For it requires Time for the saline mineral Virtue to be equally diffused thro' a Mass of that Depth of Water, whose upper Part is incessantly weakened by a Land-Spring of fresh Water.

Hence we see how adviseable it is, in order to keep out the Land-Springs, to dig a narrow Trench some Feet Depth, round the Well, to be filled with stiff Clay well rammed.

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The mineral Virtue in this Water seems to be much like that of *Cheltenham*, in its shooting into very bitter, regular, oblong Chrystals, which are, on that account; called nitrous; tho' they are not a true Nitre; for neither these, nor those of *Cheltenham*, will deflagrate or flash in Touch-Paper, nor on burning Charcoal, as true Nitre will do; some of which still retain their Form and Firmness for 17 Months since they were chrystallized; whereas the chrystallized Salts of several other purging Waters have crumbled, and in a great measure wasted, away in much less Time: A greater Proportion of the Salts of *Jessop's Well*, shoot into oblong Chrystals than those of *Cheltenham*; and its Water also gives a stronger green Tincture, with Violet-flowers. The purging Quality resides chiefly in these chrystalline Salts, and a small Proportion of common Salt; some of which there is in all these mineral Waters.

The Proportion also of its earthy calcarious Matter, is but $\frac{1}{11\frac{1}{4}}$ Part of it; which, like that of *Cheltenham*, is but little, in comparison of the much greater Quantity of it in other purging Waters: It is also soft and impalpable, like that of *Cheltenham*, and not harsh and coarse, as it is in some other purging Waters.

And as the Quantity of purging Salt in this Water is considerably greater than in any other, so it is found by Experience, that, proportionably a less Quantity of it suffices, which makes it fit the better on the Stomach. It is also observed to exhilarate those who take it.

It was observable of the Sediment of several of these Waters, that, when dried, and while hot,
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there ascended Plenty of invisible volatile salt Fumes, so pungent that the Nose could not bear them. Hence we may reasonably conclude, that the Waters which abound most with purging Salts, such as those of *Jessop's Well*, should be proportionably preferable to weaker Waters, which are strengthened by boiling halt away; whereby not only the more subtil active Parts are evaporated; and those that are left are decomposed, and formed into new grosser Combinations; as are also the calcareous Particles, which are so fine as to pass the Filter before Evaporation, but not after it. This was the Reason which induced me to examine, by various repeated Trials, and to give an Account of the superior Strength of *Jessop's Well Water*, above all others that I have examined or heard of.

When *Jessop's Well* was cleaned, Oct. 16, 1749. after a considerable Quantity of Rain, after about half a Foot Depth of black muddy Filth was taken out, then the natural fat sandy-colour'd Clay-Bottom appear'd; thro' several Parts of which the Water couz'd up at the Rate of 160 Gallons in 24 Hours.

The Water which then came fresh from the Spring gave a weak Blush with Galls; but when put into Bottles it did not do so next Day; a Sign that there is some Degree of Steel in it.

It was very observable, that the Man who stood about three Hours bare-legg'd in this Well-Water to clean it, was purged so severely for a Week, that he said he would not venture, on any account, thus to clean the Well again. And it was the same with another Man, who cleaned the same Well about twelve Years since. And I am credibly informed
by

by a Merchant, that, being in a Warehouse in *Egypt* to see *Senna* baled up, it had the like purgative Effect on him.

In order to get a satisfactory Account of the Efficacy of these Waters, I desired Dr. *Adce* of *Guilford*, who has long prescribed them to his Patients, to give me his Opinion of them; which he has done in the following Letter; *viz.*

S I R,

Guilford, March 14, 1749.

I HAVE found very advantageous and uncommon Effects from the Use of the Waters of *Jessop's Well*. Some of my Patients who have drank them steadily and cautiously have been cur'd of obstinate Scurvies. As I had a long time ago Reason to think there was a fine volatile Spirit in them, I therefore oblig'd some to drink them for a Course of Time at the Well as an Alterative, with very happy Consequences. When I have order'd them as a Purge, they have work'd very smartly, but have not dispirited. I am glad to have it in my Power to confirm your Sentiments by my own Observations; and am satisfied these Waters, if continued a proper Time, and taken in a proper Manner, may be render'd very beneficial to Mankind, according to the best Opinion that can be formed by

S I R,

Your most faithful humble Servant,

Swithin Adce.