

PHOSPHORIC ACID IN POTABLE WATERS.

By SIDNEY HARVEY, Canterbury.

HAVING for a long time past found it necessary to take into account (at least qualitatively) the presence of phosphoric acid in samples of water daily submitted to me, I read with pleasure Mr. Hehner's paper upon the subject in the ANALYST for August, and can fully endorse his statements therein.

Since the publication of the above paper I have made a fuller examination of the "total solid residue" resulting from every analysis, specially for the purpose of testing for and estimating the P_2O_5 almost invariably present, and it appears to me that the time has arrived when the amount of phosphoric acid in water should be included in a report, and should be accepted as another "clue" (and we have none too many) to aid us in our judgment of the purity, or otherwise, of a sample. Thanks to Mr. Hehner, his paper of January, 1879, embodying, as it does, an exact and easily worked process will greatly lighten the additional labour involved. The following are the analytical data of a water reported upon by me on October 25th, taken from an old and shallow well close to an ancient churchyard in this city, and which has been closed for many years.

The water was very clear, free from smell, deposited very little upon standing, and gave copious precipitates with oxalate of ammonia and chloride of barium, and contained, as usual in this chalk district, much carbonate of lime:—

	Grains per gallon.	Parts per million.
Combined Chlorine	10.01	143.
Total Solid Residue	95.9	1370
Nitrogen as Nitrates and Nitrites	5.023	71.7
Phosphoric Anhydride (P_2O_5)	1.03	14.71
Free Ammonia	—	0.01
Albuminoid Ammonia	—	0.09

Not only did the residue of 70 c.c. of this water, when suitably treated, give a considerable precipitate with molybdic solution; but a little of the water *itself*, when warmed, gave a very distinct yellow colour upon adding the above re-agent.

In conclusion, I may remark that I operated upon a sufficient quantity of water to ensure accuracy in my results, which I commend to the attention of those who may still doubt the possibility of the presence of phosphoric acid in water in anything more than a mere trace.