

protected in this particular instance by the elaborate precautions taken by the water company, and measures will, it is anticipated, be shortly carried out which will render the supply even safer still—indeed, as safe as that furnished to the seven millions or more of people consuming London water.

The question is, however—Is it enough, from the broad point of view of public health, to leave the precautions which shall be taken to ensure a pure and wholesome water supply in the uncontrolled hands of water companies? True their reputation is always at stake, but the fact of their possessing compulsory areas of supply detracts somewhat from this argument, which is otherwise a quite genuine one to use. It is a moot point as to whether water companies are in the position of vendors under the Sale of Goods Act, and could be held liable for any implied breach of warranty that the article supplied by them was of good quality. Even granting that they are so liable, the question of proving that reasonable diligence in the provision of a pure supply had not been exercised would in the case of certain forms of pollution be an exceedingly difficult one. The case is virtually the same on this issue where the water supply is in the hands of the municipality or district council. The most direct remedy against carelessness or negligence in such a matter as this would be to legalize the imposition of penalties at the instance of private consumers on either companies or sanitary authorities who failed to supply pure and wholesome water without reasonable cause shown, the onus of proof of purity or wholesomeness and of the employment of reasonable and proper diligence to rest on the body supplying the water.

It is submitted that a better and more universal standard of purity of water would be secured if all water undertakings were under the supervision of some central representative and independent bodies, such as county councils, who should have powers of entry for purposes of inspection, of taking samples from reservoirs, filters, mains, &c., and of enforcing local measures for the prevention of pollution. It should be further made compulsory on all purveyors of water, public or private, to have frequent periodical and systematic chemical and bacteriological examinations carried out of all their sources of supply, and of the water as delivered to the consumer from their works, and the medical officer of health of the county council, and of any district council within the limits of supply, should at all times have free access to the records of such examinations, and should have power to call for copies of such records as he may deem it necessary to have on payment of a small fee to cover the clerical labor involved.

Some such course as this was advocated by Mr. Chaplin, when president of the local government board in 1898, in connection with a number of private bills then before parliament; but unfortunately no powers of this kind existed in any general act of parliament, and the objection was taken that for this reason such could not be conferred in any private bill. Clauses were subsequently suggested by the local government board to cover the various points named, but so far they have not become law, and private consumers are thus left to the unsatisfactory remedy of waiting until the tardy opportunity arrives of bargaining with water purveyors by the expensive process of opposing in parliament any application for further powers which may chance to be made. Such leisurely and uncertain methods do not at all adequately meet the case. Quite enough is known now-a-days of the serious actual and potential dangers of impure water supplies and of the means of averting such dangers to justify parliament in granting powers on the lines indicated above. The fact, too, that in a few instances, at all events, certain of these powers have been wrung out of parliament in the face of strenuous opposition, and have been successfully

operated without injury to the water purveyors concerned is an additional argument for their speedy generalization.

To pass to another aspect of this question of water supply. In almost all districts, urban or rural, in the county, it is quite a common thing to find new houses being built outside the reach of a public water supply and being compelled to sink wells for water. Such wells are sunk on the land which has been purchased for the site of the house, and they are sunk in such a situation and of such construction that a contaminated supply will almost certainly be the result either immediately or after some little time. The council of the district have no power of compelling any adherence to rules as to propriety of site or method of construction such as may prevent possibilities of pollution; the owner may put his well where he likes and build it as he likes, and, so long as he can show temporary compliance with the requirements of the Public Health Water Act, 1878, in rural districts or in such urban districts as have adopted this act, his well may within a very short time become as full of potentialities for mischief as it is of water. The inclusion of a well to supply drinking water would, it is fairly certain, be struck out by the local government board as outside the scope of the authority given by Sec. 157 of the Public Health Act, 1875, for the framing of by-laws. True, the construction of cesspools, &c., within a certain distance of a well or source of water supply may be prohibited under building by-laws, but I have never heard of a by-law prohibiting the construction of a well within any specified distance of a cesspool or other possible source of pollution. Here, in my opinion, a little elasticity in the interpretation might usefully be extended to local authorities in the making of by-laws.

In a large number of instances samples of water have been submitted to the county analyst for analysis and report, and arrangements have now been made under which a copy of every such analysis is forwarded to me at the same time as it is furnished to the district council requesting the analysis. Whilst this saves valuable time in most instances, there are still a few local authorities who appear to think that the county analyst will, in some obscure manner, be influenced in forming his opinion on the analytical results obtained by a knowledge of the source from which the sample has been taken. Although this is obviously a ludicrous inference, the practice is still continued in some districts of labelling the samples with a mere number with the apparent idea that only in this way can an absolutely impartial opinion be obtained. This, looked at in the most obvious way, constitutes a fairly direct and totally unwarrantable aspersion on the methods of the county analyst. As a matter of fact it might easily happen that the withholding of information as to the source of supply might lead to the formation of a totally fallacious opinion on the suitability or otherwise of the water for domestic use; this has indeed happened in not a few instances within my knowledge.

It cannot be too strongly impressed that a knowledge of the source and surroundings of any water supply is essential for the formation of a true opinion of its fitness or otherwise for consumption, and personally I would rather trust to an opinion formed as the result of careful local inspection than to one formed on chemical or bacteriological examination alone. Both chemical and bacteriological examination of water supplies have their uses, but also have their limitations. The "personal equation" of the operator is a factor of considerable weight, and it is by no means the only factor in the case. Lest I be misunderstood let me say at once that the chemist or bacteriologist who makes a single individual analysis of a water supply without any knowledge of the source or surroundings may be and often is quite right in the interpretation he puts upon his findings, but he is al-