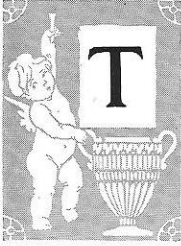


OUR READERS' COLUMNS

THE COMMON SENSE ABOUT SEWER GAS



HERE has been much said and written of late on the subject of sewer gas, but after all voices have been heard, all opinions expressed, we are very much in the same place we were before the matter had been given thorough study and full publicity. The discussions have waxed fast and furious over the problem whether, in the first place, there is such a thing as sewer gas, and no definite conclusion has been reached, because the two opposing sides of the question have entirely different conceptions of what is meant by the term "sewer gas."

Chemically speaking, there is no such thing as sewer gas. That is, there is no specific mixture or combination of known ingredients which can be found in sewers at all times, and which can be expressed by certain symbols like other specific gases. That being true, no matter what the nature of the air of sewers might be, or the effect it may have on the health of the people, as a matter of hard chemical fact it is not a specific gas.

But viewed in the everyday light of experience, there is a certain well-defined, easily distinguished gas or foul air, call it what you will, given off by all sewers. Every plumber knows this very well, for in working around untrapped pipes opening to the drainage system he has had it forcibly brought to his attention hundreds and hundreds of times. So uniform in composition is this mixture that it has a characteristic odor, and many a plumber has detected a leak of sewer air in a building, and later located it by the sense of smell, while the occupants of

the house were in ignorance of its existence. In the very nature of things we must expect a gas or foul air to arise from our sewers. In the sewers organic matter is fermenting and decomposing night and day, and wherever fermentation or decomposition takes place there, likewise, will certain gases be liberated. Nor are those gases liberated in insignificant quantities. In the septic tanks of some sewage disposal works in tropical countries, where fermentation and decay under their most favorable conditions, heat and moisture, take place rapidly, the gas evolved by the process is piped to power houses and there used for illuminating and power, just as natural gas and illuminating gas are in our own cities. Of course, this gas is changeable in character, perhaps not being the same for a half dozen hours at a time; but that gas is given off by decomposing sewage there can be no doubt whatsoever, even though from the chemist's standpoint it cannot be considered a gas, because not of uniform quality and known constituents which can be expressed by a formula. Call it drain air, or call it gas, as you will, it will smell just as musty as ever, and present the same old problems for the plumber to solve. In view of the fact that there is a hybrid gas in sewers, if such a term may be used, in the interest of simplicity and standardization why not recognize it as such and adopt the term "sewer gas" permanently to express that foul air, gas, or whatever others might want to call it? Certain it is that some name is necessary, and the time-honored one with which we are all familiar will serve better than another. It has this in its favor, at least, that plumbers all KNOW what sewer gas is, and plumbers are the ones most interested.

Having established the fact that sewer gas is common to all sewers, the question then arises, what effect, if any, has the gas on the health of the people?

There are two ways which have been considered in which sewer gas might be injurious to health. One is by becoming a channel of infection to carry the bacteria of disease from the sewage in the sewers into the homes through defective plumbing installations; the other, that the gas itself was of a toxic nature, and that continued inhalation of it would produce illness, sometimes specific diseases of an epidemic nature, and even death.

So far as sewer gas furnishing a medium for the carrying of bacteria is concerned, there is absolutely no cause for apprehension whatsoever. Experiment after experiment, not to mention experience, has proved this premise beyond the shadow of a doubt. No bacteria, unless it might be in remote and isolated cases, gain entrance to the building by way of air carriage from the sewers. They might by water carriage through the backing up of sewage into the building, but that is another story.

The bacteria theory of invasion by aid of sewer gas may then be discarded, and we can assume that there is no danger from that source. This leaves only the sewer gas itself to be considered, and here, again, two different cases must be assumed—first, the possibility of specific disease being caused by the daily inhalation of sewer gas; second, the possibility of the general health suffering without specific illness or death being induced.

Like the bacteria theory of infection, the possibility of a specific disease being produced by the inhalation of sewer gas can be dismissed as impossible. Outside of the general weakening of the human system, there is no danger, for there is nothing in the composition of the gas that can cause illness other than poisoning, or asphyxia, which we will not class as diseases. Breathing gas alone, then, no matter how strong it might

be when mixed with the air of a room, would not bring on, so far as present knowledge extends, a case or epidemic of communicable disease.

But the continued breathing of drain air, if it cannot cause specific disease, can at least cause illness. Headaches have often been caused by breathing the impure air or sewer gas from the drainage system, and there is no doubt but that living in an atmosphere charged highly with sewer gas would lower the vitality of the human organism, just as sleeping in a room full of coal gas; sleeping in small rooms with windows closed or living in rooms fouled from any other source would lower the vitality by cutting off the available supply of oxygen and, perhaps, inducing slow poison.

Is there any real danger, then, of health being undermined from sewer gas in the average house throughout this country?

Generally speaking, no. So long as the sewers are as well constructed and the drainage systems as well ventilated as they are in most cities today, there is little or no danger of illness or depressed vitality from sewer gas. But it must be borne in mind that what gives us this immunity from illness and even death from sewer gas is the excellence of our sewers and plumbing systems. If we allowed them to degenerate to the condition of early sewers and plumbing installations there would be as much danger as in the past, and the danger would be real, not fancied. To relax our vigilance for a time, allowing poor materials, leaky joints and defective work to creep into practice, would make the danger as real as it ever was. We are safe from sewer gas today because we guard against it. The sewer gas is ever there, ready to gain in strength and volume and advance for a conquest whenever we return to old methods of work. If constant vigilance is the price of liberty, it is no less the price of life and health, and it is the plumber who must stand guard over the health of our homes. The enemy is there as ever. We must shut it out.