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Darrel D. Douglas, P.E.
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Oregon State Board of Health
P.O. Box 231
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Dear Mr. Douglas:

I shall endeavor to answer your actual and implied questions as fully as I can.

The problem of pottery and ceramic ware used for household purposes in connection with food and beverages is indeed, an important one, and we have seen that cases of poisoning among young adults in good health can result from defective glazes on such articles, when they are used regularly, instead of being used occasionally. The articles to which I refer were produced in this country, and the difficulty resulted primarily from unsatisfactory firing. Whenever you see a mat glaze on any of the articles so colored - especially yellows and greens - as to be made with lead pigments, you are entitled to suspect that the firing has been done at low temperatures so that the lead in the glaze has not been converted to glass, i.e., silicate.

If the firing of which you speak is done at 2000°F, it should not be defective, but if the instrumentation employed should not be accurate, the results might not be good. At any rate, the test which you have used should indicate that such is the case, although it is not as severe as the test described by Mr. Merwin, to which we would adhere, if we were to use only one test. (There are some data to indicate that the tests should be of multiple design.)

In my view, both the group of the Potter's Association, with whom we worked, as well as the F.D.A., are in considerable error in setting a standard at 7 ppm. The general run of tableware runs lower than this, and I believe the standard should be no higher than 2 parts per million. This would eliminate some of the fancy stuff, but it is achievable, and I believe the standard should be set as low as is feasible. There is simply no point in granting a large leeway here, so far as I can see.

I would be the first person to admit, however, that the tests of pottery and glazed ware, in general, should be ample to deal with the practical situation. There may well be much more investigation so as to establish the facts with respect to various solvents - coffee for example. There may be others, such as complex organic acids which yield some odd results. (Incidentally, I believe the U.S.F.D.A. standard was set, or thought of, as having a precedent in the standard set years ago for lead on small fruits. I have always considered it to be higher than it should be. You are right, of course, in calling attention to the result which you obtained in a dinner plate tested overnight.

As to the problem of the other metals, I am no authority, I know nothing about such tests and I know little, off the cuff, about what the standards should be. I'll discuss this with our chemists here and see what I can learn. (This is Saturday afternoon, when none of the usual staff members are around, and I don't wish to wait to reply to your letter, since I'm leaving town for a time.)

You are right about most of the makers of things of this sort, especially the designers and manufacturers of objects of art. The standards for these activities should be exacting and should be enforced. First, however, they need to be worked out, and so far as I know, this has not been done. The materials I should fear most, in this connection, are those which contain cadmium. Selenium may be a source of trouble also, but I doubt that copper and zinc are. There is no reason, however, why opinions and predictions should be trusted. It is necessary to know the facts.

Jerry Cole of Lead Industries Association told me recently that they have sponsored some comprehensive research on lead. This, however, will not help with other metals. You are quite right. There should be required tests for various possible contaminants, and it should not be possible for every Tom, Dick and Harry who has a bright idea, to foist it upon family, friends, and neighbors far and near.

Sincerely yours,

Robert A. Kehoe, M.D.
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Occupational Medicine

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