

in making ethylene. I would use phosphoric acid at a temperature of about 250 degrees C. I found that it would eat right through glass or any of these things we used in the laboratory in the course of an hour. I even used fused quartz vessels and found phosphoric acid at this concentration would actually eat through these fused quartz vessels, but not so rapidly as in the compounds that contained potash and soda. The phosphoric acid, if you consider simply the potash from the fertilizer standard, can be made very, very cheaply. It is quite a problem in some mills to dispose of their chlorine. The chlorine can be made and you get muriatic acid from your electrolytic salts by combining the chlorine with the hydrogen. Your muriatic acid can be made cheaper than it can be made by using salt and sulphuric acid. Now if you treat ordinary phosphate rock with hydrochloric acid, you get a solution of calcium chloride and phosphoric acid which acts just the same as phosphoric acid, and this has a very marked action on the silicate rocks, but with the advantage that it has a selective action at the comparatively low temperature of 200 degrees C., dissolving out potash and soda, leaving to a large extent the silica, and this phosphoric acid is not a waste then because the phosphates are as necessary to the fertilizer industry as the potash, and the final product contains phosphate of potash. I think this is a line of investigation which might be attempted and which might prove very profitable.

Mr. GARLAND E. LEWIS: I do not happen to be a member of your Society, so that I will take up but just a moment of your time. I came all the way from Nebraska because I am interested in the subject of the morning and have enjoyed these papers very much, especially Mr. Meade's. I noted his explanation there of the occurrence of potash salts in the alkali lakes of Nebraska, and, by the way, this same opinion has been offered by the State Geologist of Nebraska; however, there is considerable difference of opinion on the point, and I think a proper investigation may prove the theory to be erroneous. The fact that those lakes or a part of them are strongly alkaline, particularly in potash, while lakes of a similar situation and evidently equally as susceptible to drainage from a burnt area have no appreciable potash content would seem to throw cold water on this theory. There have been no extensive borings whatever in the State to my knowledge. They have simply been utilizing the alkali potash water where it is found and it does not seem unreasonable at least to suppose that there may be an underground potash supply