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ARSENIC DETERMINATIONS

Please refer to memo dated January 9, 1950 for comparative results by the two methods. On the basis of those results anyone wanting a lower figure would choose the molybdenum blue method. It is altogether likely, however, that comparative analyses, on another occasion would show the Gutzeit results as lower.

The point arises, if results by the two different methods do not agree, which are we to accept? If all results are run by one analyst according to only one method and never repeated, inconsistencies may never be observed and perhaps no one will be embarrassed.

However, as comparative results on a given sample may be obtained in different laboratories by different analysts, argument is certain to develop unless both laboratories are at least using the same method.

I think that the accuracy of the final arsenic figures obtained is the most important thing considering what is involved. I am prepared to vouch for the accuracy of the figures I get by the molybdenum blue method. Conversely I am not prepared to accept Gutzeit figures as meaning very much.

As you will recall, the Gutzeit has already failed once for us on a test sample. It cannot be used without preliminary separations in many cases. With our molybdenum blue method a preliminary separation (distillation) is an integral part of the method.

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A comparison of the Gutzeit method as laid down in the AOAC shows no significant change in the method since 1940, in other words, it would seem that chemists are not devoting much time to improvement of the method. It may also be strongly hinted that in some cases results reported as by Gutzeit have actually been done by the molybdenum blue method.

In my opinion, no one need apologize for the latter method. It is superior to Gutzeit in every respect except perhaps sensitivity.

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