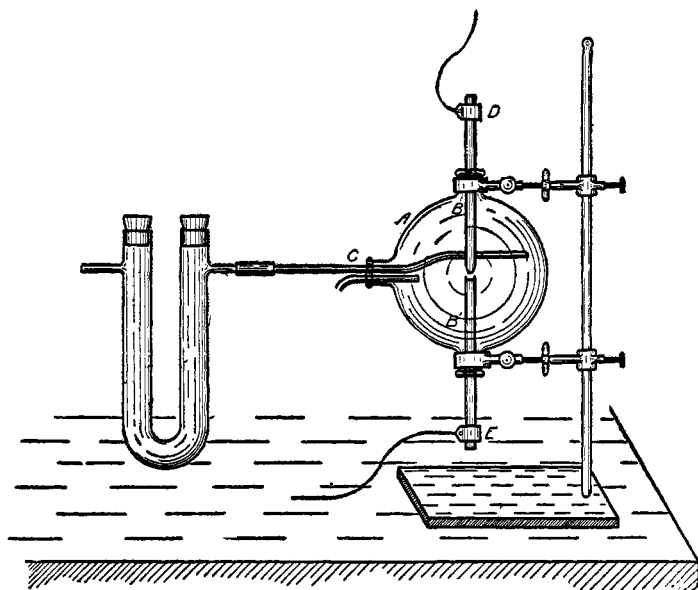


cavity in the end, into which the substance to be reduced is inserted. At C is an inlet and an outlet tube, by means of which an atmosphere of hydrogen is obtained. Fill the cavity



in B', remove the air, connect D and E with B and B', by means of copper foil, and having the proper resistance, turn on the current, and allow to pass until the desired effect is produced. The oxide was reduced in forty seconds, and, prepared in this way, resembles the product of the electric furnace; that is, a dull steel gray mass, which is very hard.

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### SOD OIL, WOOL GREASE, AND DEGRAS.

BY ERASTUS HOPKINS.

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WHEN the tariff act of 1897, known as the Dingley bill, was made a law to govern the classification of imported articles, there appeared a paragraph in the act which, with an intent of definite designation, opened a question which became so involved that its final settlement was made only after litigation.

The paragraph is No. 279, which reads "...; wool grease, including that known commercially as degreas or brown wool grease, one-half of one cent per pound."

The introduction of the term degreas caused all the trouble, because the authorities framing the bill did not make the fact clear that the term degreas is applied to oils and greases used by tanners without any special distinction.

For the question involved, research work was done in this laboratory on wool grease and sod oil, the results upon the latter being published in this Journal in 1899, p. 291.

As a result of the trial of the cases involved, sod oil was decided to be entitled to free entry as an oil used expressly for currying leather not specially provided for in the act, paragraph 568, and not similar to wool grease. Since that time I have been so often approached by people regarding the facts pertaining to the substances involved in the case that I thought the subject might be of wider interest than to the limited circle of my professional acquaintances.

Sod oil and wool grease have entirely different constitutions as well as characteristics, and hence should be easily distinguished apart.

I wish especially to call attention to the terms "wool grease," "degreas," and "sod oil."

Wool grease is extracted from the wool of sheep. Sod oil is expressed or extracted from leather which has been curried by oils, particularly fish oils.

Sod oil has no relation to wool grease in its derivation, but is related to it in its use; that is, for the currying of leather. Sod oil contains a resinous substance (not a resin) known as degreas former, which is characteristic of sod oil. No other oil or grease (and this includes wool grease, which is, scientifically speaking, an animal wax and not a grease at all) contains this degreas former, which is therefore characteristic of sod oil.

Originally, sod oil was called degreas. Later the term was made by the American oil trade and to a less extent by the English to embrace wool grease. The term degreas has therefore come to embrace two substances, dissimilar in constitution, source, and chemical constants. Wool grease being called degreas by the trade, caused the mention of degreas in paragraph 279 of

the act of 1897—a commercial term by which wool grease is known, as it is also known under the name of brown grease. The point I wish to make is that the *degras* there mentioned means wool grease but it does not embrace *sod oil* which in no way resembles it except in use. From this it can be seen that the term *degras* which originally had a limited meaning has come to be applied indiscriminately to the two substances used for currying and stuffing leather, and was mentioned in paragraph 279 to make that paragraph stronger in covering wool grease.

Paragraph 279 mentions two substances, tallow and wool grease. *Degras* is not mentioned in that paragraph excepting as a wool grease *degras*. Brown grease is mentioned also in this same connection.

Paragraph 568 mentions "all other greases and oils used for stuffing leather." Here also is included a *degras* but this *degras* is not that specially mentioned in paragraph 279 which is a wool grease, but is the original *degras*, or *sod oil* made from oil expressed from leather, and therefore having no connection with a wool grease which comes from wool. *Sod oil* is the English name for the substance known to the French as *degras* or *moëllon* and the term *degras* is the original French name for this oil extracted from oiled chamois leather and has been borrowed by the English to be misapplied to wool grease.

The term *sod oil* is unknown in the French currying trade excepting as an English translation of their own word *degras* or *moëllon*, and the process of making *degras* might be said to have originated in France in the manufacture of chamois leather.

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(CONTRIBUTION FROM THE CHEMICAL LABORATORY OF LAFAYETTE COLLEGE.)

## A METHOD FOR THE DETERMINATION OF ZINC BY THE USE OF STANDARD THIOSULPHATE SOLUTION.<sup>1</sup>

BY RICHARD K. MEADE.

Received May 4, 1900.

AT the spring meeting of the Lehigh Valley Section, the author read a paper<sup>2</sup> upon a new volumetric method for magnesium. The method depended upon the precipitation of

<sup>1</sup> Read at a meeting of the Lehigh Valley Section, January 18, 1900.

<sup>2</sup> This Journal, 21, 746.