

- Die wichtigsten Gerbmaterialien des Handels.
 Aetherische oder flüchtige Oele.
- III. Pflanzenstoffe von unbekannter Constitution.
 Glycoside.
 Bitterstoffe.
 Harze.
 Balsame oder flüssige Harze.
 Eigentliche Harze (Hartharze).
 Gummiharze.
 Pflanzenfarben.
- (B) Die stickstoffhaltigen Erzeugnisse der Pflanzen.
 Pflanzenbasen oder Pflanzenalkaloide.
 Proteinstoffe, Eiweisskörper oder Albuminate.
 Nicht-eiweissartige stickstoffhaltige Pflanzenbestandtheile (Amidverbindungen).
 Fermente.
- Dritter Abschnitt. Die anorganischen oder Mineralbestandtheile der Pflanzen (pages 709-836).
 Vorkommen, Einäschern, Aschen-Analysen, etc.
 Betrachtung der einzelnen anorganischen Pflanzenbestandtheile.
- Anhang.
- I. Bedeutung der Wälder fuer die chemische Industrie
 (Gewinnung von Potasche, Holzkohle, Holzessig, etc.)
- II. Nachträge.
- III. Tabelle.

A METHOD OF PREPARING GLYCERITE OF STARCH.*

BY F. L. GEILER.

INTRODUCTION.

The purposes of this article are: (1) to describe a simplified method of preparing Glycerite of Starch, (2) to show wherein this method differs from the present U. S. P. X method of preparing this glycerite, and (3) to show why the difference or differences mentioned above will be advantageous.

The writer has, for a number of years, assigned Glycerite of Starch as one of the preparations to be made by students in the laboratory. The observations made over this period of years led to the conclusion that undue difficulty was being experienced by the students in making a comparatively simple preparation. The trouble met with has been primarily that of obtaining a smooth, opalescent, translucent product by following the directions given for this preparation in the U. S. P. X. This primary difficulty usually has led to one of a secondary nature due to the effort made to obtain a temperature of around 140° C. with the resultant scorching of the glycerite. Upon questioning the students, almost invariably the scorching has been found to be the result of the use of high heat under the impression that it will eliminate the lumpy condition of the glycerite which has developed because of following the directions as given in the U. S. P. X.

During the time referred to above many students used the method of the U. S. P. X and repeated the experiment as high as three or four times before a satisfactory glycerite was obtained. This always seemed to the writer an uncalled-

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for waste of time and materials on a preparation which, as has been said before, should be rather simple.

EXPERIMENTAL WORK.

The conditions and results, as generally outlined above, led the writer to conduct experiments on this preparation. At first one group of students was allowed to prepare the glycerite as directed in the U. S. P. X. The results were very unsatisfactory, many repetitions occurring due to a lumpy or a discolored preparation. The same group was then directed to prepare the same glycerite by the method to be described subsequently. The results obtained by using the second method were practically 100% as to smoothness, opalescence and translucency. The above methods of preparation were repeated a year later and the same results obtained. The writer, personally, has performed the same experiments with the resultant corroboration of those given above.

The method proposed is as follows: Ten grams of starch were weighed out and mixed with 20 cc. of cold water until a homogeneous mixture was obtained. Glycerin, to the volume of 70 cc., was poured into a small evaporating dish. The aqueous starch mixture was then added to the glycerin and the entire volume was stirred until homogeneity was again obtained. The evaporating dish and contents were then placed in a sand-bath on an electric hot plate. The temperature was so regulated that the heat increased rather slowly and the preparation was stirred almost constantly. The highest temperature registered inside the evaporating dish was 110° C. The total time of making the glycerite, from weighing and measuring to removing from the hot plate, inclusive, was just one hour. Equally satisfactory results can be obtained by using a Bunsen Burner in place of an electric hot plate.

CONCLUSION.

In view of the foregoing, I wish to call attention to the following conclusions:

(1) The proposed method of preparation is less troublesome than that used in the U. S. P. X.

(2) This method requires practically no care other than constant stirring and temperature control.

(3) Lumpiness and discoloration in the finished product are eliminated due to the fact that all ingredients are heated together at the same time and to the same temperature.

(4) The present U. S. P. X method is unsatisfactory because it gives a lumpy product and possibly a discolored one, due to the glycerin being heated far above the aqueous starch mixture when the latter is added.

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