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## STUDIES ON THE GLUCOSIDES CONTAINED IN TAXUS BREVIFOLIA.

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In a study made by I. Jones and E. V. Lynn (1), the authors report that they attempted the isolation and identification of the glucosides contained in *taxus brevifolia* and especially for taxicatine as found by Lefevre (2) in *taxus baccata*. They used the method of extraction by ethyl acetate as indicated by Bourquelot. They obtained a grayish powder which did not present the characteristics of the taxicatine. Other unsuccessful extractions made with alcohol and with water led them to the conclusion that "one cannot say positively that the leaves do not contain a glucoside, but the evidence indicates that they do not."

Since the author was working on experiments with *taxus canadensis*, it occurred to him to make comparative studies of *taxus brevifolia*. These are the experiments related below. We used for identification of glucosides the biochemical method of Bourquelot (3, 4).

Two hundred fifty grams of leaves, gathered in January 1939 in the region of Seattle, Washington, were put in boiling alcohol at 80°, to which had been added calcium carbonate, and maintained at boiling point for twenty minutes. The leaves were ground and the treatment, with new alcohol, repeated twice. After filtration of the liquid, it was evaporated under reduced pressure. We had then 280 cc. of solution on which our experiments were made.

We took out 50 cc. and the rest, to which we added 1 cc. of toluol and 2 Gm. of invertase, was placed in an incubator at 30° C.

After defecation of the above-mentioned 50 cc. with 12 cc. of lead acetate, we made an examination with the polarimeter and calculated the reducing sugars by Bertrand's method.

Polarimetric examination: + 20'

Reducing sugars: 0.908 Gm. per 100 cc. of solution.

After 13 days in the incubator, 50 cc. of the solution to which invertase had been added were examined in the same way. The rest was put in a boiling bath for fifteen minutes to destroy the invertase and after the addition of emulsin was replaced in the incubator.

Examination of the 50 cc. gave the following results:

Polarimetric examination: -1° 56'

Reducing sugars: 2.725 Gm. per 100 cc. of solution.

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After seven days, the action of emulsin having ended, the results were as follows:

Polarimetric examination:  $-27'$

Reducing sugars: 3.180 Gm. per 100 cc. of solution.

From these results, we can come to the following conclusions. Between the first and second examinations, we have had a change in the rotation corresponding to:  $+20' - (-1^\circ 56') = 136'$ . At the same time the reducing sugars increased by:  $2.725 \text{ Gm.} - 0.908 \text{ Gm.} = 1.817 \text{ Gm.}$  The number of mg. of reducing matter, expressed in glucose, formed in 100 cc. of solution under the influence of the invertase, shows an index of 801 for a change of deviation of  $1^\circ$ .

Consultation of the table giving the index corresponding to the principal monosaccharids shows that the nearest is 673 for gentianose. The difference between 801 and 673 being rather great, it is plausible to assume the presence of one polysaccharid associated or not with saccharose or with raffinose, the latter having been found in *taxus baccata*. This hypothesis remains to be verified.

If we consider now the second and third examinations, we have a change to the right of the polarimetric rotation equal to:  $-1^\circ 56' - (-27') = 89'$ . The reducing sugars show an increase of:  $3.180 - 2.725 = 0.455 \text{ Gm.}$

The number of mg. of reducing matter, expressed in glucose, formed in 100 cc. of solution under the influence of the emulsin shows an index of 306 for a change of deviation of  $1^\circ$ . The index of the *taxicatine* being 296, we can come to the conclusion that the presence of *taxicatine* is probable and that the study of fermentative action on the product extracted by I. Jones and E. V. Lynn would be able to solve the problem.

NOTE: We are indebted to Dr. F. J. Goodrich of the University of Seattle for procuring for us the leaves of *taxus brevifolia*.

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#### STANDARDIZED COLOR NAMES FOR DRUGS AND PHARMACEUTICALS.

Following three years of research and experimentation on the Color Names Project, both at the National Bureau of Standards and in the A. PH. A. Laboratory, two major objectives have been achieved. The first consisted of the development of the system of accurate, simple color names in the form of usable charts and the procedures for their application. At its annual meeting in February, the Inter Society Color Council, under whose direction the work is being carried out, approved the color names developed and the techniques for applying them to powders such as the N. F. and U. S. P. powdered drugs and chemicals, and to crude drugs such as leaves, stems and fruits.

The second objective attained and the first practical result of this study was the recommendation to the N. F. Revision Committee of the list of accurate color names based on this system determined for 100 powdered drugs in the N. F. VI. In like manner, the powdered drugs in the U. S. P. XI are now being studied by the Color Names Committee and it is planned that a similar report covering these drugs will be presented to the U. S. P. Committee of Revision in the spring. The powdered chemicals in both books are also being named according to the same system. The next groups of color names to be studied will be those applied to microscopic structures of vegetable drugs and to solutions. Experience so far gained indicates that the system is so simple that anyone with normal eyesight can apply it.