repeating both processes several times. The resulting sirup was dissolved in 250 cc. of absolute methyl alcohol and shaken for two hours with 15 g. of silver carbonate. The colorless solution obtained by filtration was evaporated to dryness *in vacuo;* the addition of a little dry ether resulted in crystallization so that vacuum distillation became unnecessary.

The glucoside was dissolved in ether, evaporated to dryness, and the crystalline residue extracted with boiling petroleum ether to remove it from a small amount of gummy material. Concentration of the petroleum ether left about 5 g. of the glucoside, which upon recrystallization melted at 93–94°, and showed $[\alpha]_D$ $-19.4°$ in water ($c = 2$). The physical constants and method of preparation identify it as the 2,3,4-trimethyl-β-methylglucoside.[8]

Grateful acknowledgment is made of a grant from the Cyrus M. Warren Fund of the American Academy of Arts and Sciences, which provided the microbalance, weights and palladium used in this work.

Summary

Populin, a glucoside occurring in certain species of poplar, has been methylated with methyl iodide and silver oxide. The resulting tetramethylpopulin was debenzoylated to a tetramethylsalicin, which on hydrolysis with hydrochloric acid yielded 2,3,4-trimethylglucose, identified by conversion to the crystalline 2,3,4-trimethyl-β-methylglucoside. This indicates that populin is 6-benzoylsalicin.

Evidence is presented that benzoylation of glucosides leads to the formation initially of the 6-monobenzoate.

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[8] See for example Oldham, THIS JOURNAL, **56**, 1360 (1934).

NOTES

p-Nitrobenzyl Esters of Organic Acids

BY T. LEONARD KELLY AND MARNELL SEGURA

During the course of a research the following *p*-nitrobenzyl esters were prepared which do not appear in the literature. Since the melting points of these are an aid in the identification of acids they are of value. They were prepared according to the method of Reid and co-workers[1] and were recrystallized to constant melting point. All melting points are uncorrected but were taken in a Fisher melting point apparatus with a set of Anschütz thermometers which gave correct melting points with various pure reagents.

p-NITROBENZYL ESTERS

Acid	M. p., °C.	Nitrogen, % Calcd.	Nitrogen, % Found
o-Benzoylbenzoic	100.4	3.87	3.84
p-Cyanobenzoic	189.2	9.92	9.87
3,5-Dinitrobenzoic	156.8	12.06	12.14
Glutaric	69	6.93	6.81
Adipic	105.6	6.73	6.88
Suberic	85	6.30	6.26
Azelaic	43.8	6.11	6.18
Itaconic	90.6	7.00	7.10
Diphenic	182.6	5.46	5.63
		Halogen, %	
o-Bromobenzoic	109.8	23.78	24.17
m-Chlorobenzoic	107.2	12.16	12.14
o-Iodobenzoic	110.8	33.14	32.74
m-Iodobenzoic	121	33.14	33.47
p-Iodobenzoic	140.6	33.14	33.60

Caproic, caprylic, pelargonic and capric acids yielded oils which could not be induced to crystallize.

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[1] Reid and co-workers, THIS JOURNAL, **39**, 124, 701, 1727 (1917).

The Thermal Decomposition of Acetone

BY F. O. RICE, EDWARD L. RODOWSKAS AND WARREN R. LEWIS

It has been shown experimentally that when acetone is decomposed in quartz or Pyrex vessels it yields ketene and methane;[1] furthermore, it has been demonstrated that as the percentage decomposition of the acetone is decreased the yield of ketene approaches more and more closely to 100%[2] and therefore the over-all decomposition of acetone must be represented by the equation $CH_3COCH_3 \longrightarrow CH_4 + CH_2{=}CO$.

This reaction may occur either by migration of a hydrogen atom or by rupture of the molecule into CH_3 and CH_3CO, followed by a chain reaction[3]

$$CH_3COCH_3 + CH_3 \longrightarrow CH_4 + CH_3COCH_2 \quad (1)$$

$$CH_3COCH_2 \longrightarrow CH_2{=}CO + CH_3 \quad (2)$$

In order to determine whether the addition of methyl groups brings about a chain reaction in

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[1] Rice and Vollrath, *Proc. Nat. Acad. Sci.*, **15**, 702 (1929).

[2] Rice, Greenberg, Waters and Vollrath, THIS JOURNAL, **56**, 1760 (1934).

[3] It is of course possible that both of these reactions proceed simultaneously.