continuous nature of the discharge, may account for the increased rate of production of diboron tetrachloride in a d.c. arc.

Work is in progress to increase the yield still further, and an investigation of electrode materials other than mercury is planned.

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## THE ACTION OF POTASSIUM AMIDE IN AMMONIA ON *o*-CHLOROPHENYLACETONE: CORRECTION.[1]

*Sir:*

We recently reported a new principle of ring closure, the essence of which is the intramolecular addition of a nucleophilic center to a benzyne structure.[2]

Amongst examples of the new principle, the conversion of *o*-chlorophenylacetone to indan-2-one, through the action of potassium amide in liquid ammonia, was described. We have now discovered an error: the compound reported as indan-2-one (m.p. 60–61°)[3] is actually 2-methylindole (m.p. 62°).[4] The compound obtained, in 25% yield in recent experiments, strongly depresses the mixed melting point with authentic indan-2-one, but does not alter the mixed melting point with authentic 2-methylindole. Also, the compound gives a positive sodium fusion test for nitrogen. All our efforts to isolate authentic indan-2-one from the reaction in question have been fruitless.

It is of theoretical interest that 2-methylindole is formed in this reaction; the matter will be discussed in a future publication.

[1] Research supported in part by the Office of Ordnance Research, U. S. Army.

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## 1,2;5,6-DI-*O*-ISOPROPYLIDENE 3-DEOXY-3-AMINO-$\alpha$-D-ALLOSE

*Sir:*

Hydrolysis of the new antibiotic kanamycin has been found[1] to yield 3-deoxy-3-amino-D-glucose (I).[2]

The crystalline amine which is formed[3] on the aminolysis of 1,2;5,6-di-*O*-isopropylidene $\alpha$-D-glucofuranose tosylate (II) has been characterized[2,3] as 1,2;5,6-di-*O*-isopropylidene-3-deoxy-3-amino-$\alpha$-D-glucose. These reactions therefore appear to provide a convenient route for the preparation of I.

This communication is to report that, as suspected by Cope and Shen,[4] the aminolysis actually proceeds with inversion of carbon-3 to form 1,2,5,6-di-*O*-isopropylidene-3-deoxy-3-amino-D-allose (III).

Compound III can be prepared in 83% yield by hydrogenolysis of the 1,2;5,6-di-*O*-isopropylidene-3-deoxy-3-hydrazino-D-hexose (IV) of Freudenberg and Brauns[5] in ethanol at 80° using Raney nickel catalyst and 40 p.s.i. of hydrogen. The advantage of this route is that, whereas the aminolysis of II proceeds in 16% yield,[3] the hydrazinolysis proceeds in 60% yield.[5] Acid hydrolysis of III produced an aminosugar of different paper-chromatographic properties than that obtained on the hydrolysis of methyl 4,6-benzylidene-3-deoxy-3-amino-$\alpha$-D-glucoside diacetate.[2]

The N-acetyl derivative of III (V), m.p. 127–128°, $[\alpha]_D$ +71.3° (*c*, 2 in chloroform), [calcd. for $C_{14}H_{23}O_6N$: C, 55.80; H, 7.69; N, 4.65. Found: C, 55.87; H, 7.73; N, 4.85.] was hydrolyzed for two hours at 100° in 0.2 *N* hydrochloric acid. N-Acetylation was then accomplished by the addition of acetic anhydride to the neutralized hydrolyzate. Evaporation of the solvent and extraction of the residue with ethanol gave a 1,2-*O*-isopropylidene-3-deoxy-3-acetamido-$\alpha$-D-hexose (VI), m.p. 154–156°. Calcd. for $C_{11}H_{19}O_6N$: C, 50.56; H, 7.33; N, 5.36. Found: C, 50.25; H, 7.44; N, 5.29.

Periodate oxidation of VI, reduction of the product with sodium borohydride and acetylation of the reduced product gave a crystalline substance which was hydrolyzed to aminosugar using *N* hydrochloric acid at 100°. On evaporation, a crystalline product was isolated whose infrared spectrum (KBr disc) and X-ray powder diagram were identical to those obtained with an authentic sample of 3-deoxy-3-amino-D-ribose hydrochloride (VII).[6] These results establish the *allo*-configuration for III-VI and provide a new synthesis of VII which is a constituent of the antibiotic puromycin.[7]

**Acknowledgments.**—The authors wish to thank Dr. M. Przybylska for the X-ray analyses.

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## STRUCTURE OF THE $Ag^+$ (CYCLOÖCTATETRAENE) COMPLEX

*Sir:*

Complexes between metal ions and organic $\pi$ bonding systems have been of interest for some time[1,2] and are germane to general discussions[3] of weak complexes and their reactivities.[1,2,4] Aside from the $Ag^+$ (Benzene) complex,[5,6] few such com-

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