result was an initial flash of colour of about equal intensity throughout. The colour in the tentacles and in the stalk faded out at a very definitely earlier period than that in the main body region. Prior to the test, the animals were chloretonised and were in an expanded condition. Coldwater's results can easily be interpreted as due to differences in penetration of the reagents in the regenerating and non-regenerating regions.

The specificity of the nitroprusside test for reduced glutathione in living tissues has also been questioned. Now Sullivan[7] noted that, apart from free cystein, substances giving a positive nitroprusside test are not present in normal tissues. These substances include acetone, ethyl aceto-acetic acid, and cyan-acetamide. There is, moreover, no authentic record indicating the presence of free cystein in living tissues. Applying Sullivan's test for cystein, Tunnicliffe[8], Thompson and Voegtlin[9], Gregory and Goss[10] and I failed to find free cystein in living tissues. It may thus be concluded that the nitroprusside test is specific for reduced glutathione *when applied to normal living tissues and when ammonium hydroxide is used as the alkali and no heat is applied.*

N. S. ROYSTON MALOEUF.

Zoological Laboratory,
Cornell University,
Ithaca, N.Y.

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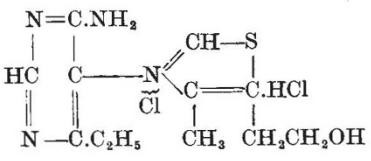
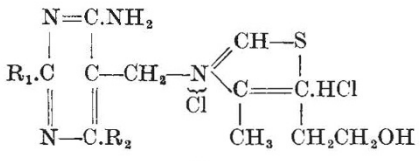
The Structure of Aneurin and Thiochrome

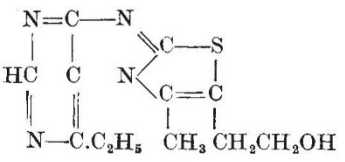
R. R. WILLIAMS has just published[1] a note on the structure of aneurin (vitamin B_1). From a study of degradation products of the vitamin, he concludes that his original formula (I)[2] for aneurin is wrong, and that it should be represented by (II : where $R_1=CH_3$; $R_2=H$) ; this new structure is similar in essentials to that suggested on theoretical grounds by K. Makino and T. I. Imai (II : where $R_1=H$; $R_2=CH_3$)[3].



I



II



III

For thiochrome, which is formed from aneurin by mild oxidation, we suggested on the basis of formula (I) the structure (III)[4]. In the course of subsequent synthetic work we observed that thiazpurines, prepared as models for a thiochrome synthesis, although blue fluorescent in ultra-violet light, never showed fluorescence in daylight. This led us to suspect that (I) might not represent aneurin, and our suspicion was confirmed on completing the synthesis of the compound having structure (I). The synthetic substance, though exhibiting similar colour reactions to aneurin, is not identical with it ; on oxidation with potassium ferricyanide it gives a substance non-fluorescent in daylight, but blue fluorescent in ultra-violet light. The difference in fluorescence between thiochrome and synthetic thiazpurines suggests that the former contains a different ring system. Accordingly, the possibility that the formula of Makino and Imai might represent the vitamin has been explored by synthetic methods. These experiments are not yet complete, but a compound similar in structure to (II) has been prepared, which on oxidation with potassium ferricyanide yields a substance exhibiting an intense blue fluorescence comparable with that of thiochrome. We are thus of the opinion that aneurin has a structure of type (II).

Our results afford additional evidence in support of the formula (II : where $R_1=CH_3$; $R_2=H$) advanced by Williams as a result of his brilliant investigations. Final proof of the structure must rest with the complete synthesis of the vitamin itself.

F. BERGEL.
A. R. TODD.

Medical Chemistry Department,
University, Edinburgh.
June 29.

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A Radioactive Isotope of Iron

IT was shown by Fermi and co-workers[1] that the activity induced in iron by neutron bombardment is due to an isotope of manganese. The isolation of an active iron isotope has not been reported. By means of the sensitive tube counter outfit[2] in this institute, it was found that active iron can be isolated from cobalt which has been irradiated with neutrons, whereas irradiated iron after removal of manganese was found to be inactive. Experiments were carried out with cobalt as metal, as oxide and as carbonate.

After activation, the substance was dissolved in nitric acid and a trace of ferric salt added to the solution. Iron was precipitated from acid solution by means of ammonium acetate, the hydroxide then dissolved again and precipitated once more in the same way, and finally the same process was repeated a third time. The final product (Fe_2O_3) showed an activity decaying with a period of very nearly 72 hours. As only a single cobalt isotope is present in detectable amounts, it can be deduced that this activity must be due to the isotope $^{59}_{26}Fe$. This result is in very good accordance with recent investigations on the isotopic constitution of iron[3], which have shown that the isotopes $^{57}_{26}Fe$ and $^{58}_{26}Fe$ are stable, being present in amounts of 2·8 and 0·5 per cent of the element. These data also explain why it has been impossible to detect the formation of an active iron isotope by irradiation of iron itself.