in persons spending much of their time in such rooms, and this note is published mainly to warn against such danger.

A full account of the experiments will be published in *Skand. Arch. Physiol.*

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Ammonia Formation in Shed Blood and a Characteristic Deaminase of the Blood Stream

APPLYING a method[1] for determining the blood ammonia by which forty determinations may be easily carried out in a few hours on 1 ml. samples, certain curious facts have been discovered. As is well known, ammonia forms in shed and sterile blood, and it has been shown to begin from zero concentration[1]. In a further study here, it has been observed that the formation goes in a succession of well-marked stages. Five such have been observed over the 24 hours. Such phasic formation has been observed for the rabbit, man and bird, appearing in the blood from each individual but at somewhat varying times, so that averaging the results from many animals will smooth out the curve of formation.

The following gives a summary of the phases as they appear in oxalated and sterile rabbit's blood (whole or laked) at room temperature.

	Duration (min.)	Conc. reached (γN %)
1st phase	0–5	50
2nd phase	5–45	200
3rd phase	45–100	400
4th phase	100–200	700
5th phase	240–400	1600

These figures are only very approximate, since occasional delays of upwards of an hour or more may occur before the appearance of a phase, the blood ammonia remaining constant the while. The optimum *p*H for the formation is about 8·7, though at 9·1 it is only a little less. The formation is also much influenced by saline concentration and practically ceases with 5 per cent sodium chloride. A reversal effect has been observed on the acid side and is being investigated.

During a study of the effect of adding a large number of different amino compounds to shed blood, a very potent deaminase of adenosine has been discovered therein. This would seem universally distributed, if we may judge from its appearance in the blood of man, fowl, frog and the lug worm (*Arenicola*). Its concentration in rabbit's blood is such that small quantities of adenosine added to shed blood (laked) are deaminated to within 60–90 per cent of the maximum in five minutes, the blood being maintained at *p*H 6·7 (most suitably by such a buffer as maleic acid owing to the specific action of the phosphate). This deamination rate occurs at room temperature and with a blood dilution of 1 : 3. The blood concentration of the enzyme is sufficiently high in the rabbit to suppose that all the adenosine deaminase previously found in muscle and liver[2,3,4] may have been really contained in the residual blood in these tissues.

By comparison with adenosine, adenylic acid (from muscle) added to laked blood is practically untouched after several hours, unless buffered towards the acid side (maleic acid buffers) and even then very much more slowly than adenosine. In fact, just as the adenylic acid deaminase may be described as the special deaminating ferment of muscle, so adenosine deaminase may be regarded as characteristic and apparently universal for the blood stream, and appears both in plasma and in red corpuscle.

It has also been shown here that the nucleated corpuscle of the fowl can deaminate adenine, guanine and cytosine readily at room temperature.

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A Simple Aromatic Œstrogenic Agent with an Activity of the Same Order as that of Œstrone

IT has previously been shown that the phenanthrene nucleus is not an essential part in the molecule of an œstrogenic substance[1], since the full œstrus response could be produced by the injection of substances so simple as 4 : 4′-dihydroxy diphenyl. Further experiments with compounds of this type have been made, and the following table indicates the potency of some new substances.

TABLE 1.

Substance	Dose in mgm.	Percentage positive
4 : 4′-Dihydroxy dibenzyl	100	100
4 : 4′-Dihydroxy stilbene	10	100
„ „ „	5	60
4-Hydroxy stilbene	10	100
„ „	5	40
Stilbene	25	100
4 : 4′-Dihydroxytolane	10	100
„ „	5	80
4-4′-Dihydroxy diphenyl ether ..	100	100
4-Hydroxy-phenyl cyclohexane ..	100	80

In view of the activity of stilbene, it was decided to experiment with substances containing only one benzene ring, and it was found that so simple a compound as *p*-hydroxy phenyl ethyl alcohol was capable of producing a full œstrus response in 60 per cent of animals when injected in doses of 100 mgm.

A much more potent substance, however, was found to be the phenol derived from the essential oil anethole. This substance, namely, *p*-hydroxy propenyl benzene, or anol, was found to possess a very high degree of activity.

In each case the material was administered dissolved in 3 c.c. of sesame oil, and was given in six injections, morning and evening during three days. The rats were smeared on the morning of each day, and on the fourth and subsequent days were smeared at midday and in the evening in addition. *p*-Hydroxy propenyl benzene when administered in this manner was found to be active in doses from 100 mgm. down to 0·001 mgm. Thus 1 γ is capable of producing a full œstrus response in 100 per cent of the animals injected. The amount of œstrone required to produce a similar response in these animals is in the region of 1 γ. It