	Dog No.	Weight kgm.	Total excretion of free chloral hydrate in 24 hour urine after the administration of 200 mgm./kgm. of the drug. Figures given in milligrams				
			Days				
			1	2	3	4	5
Normal	4	5·5	*Nil	Nil	Nil	..	..
	5	4·7	Nil	Nil	Nil	..	..
Liver Damaged	1	6·3	30	15	12	20	40
	2	6·1	15	18	10	10	50

* 'Nil' indicates that either there is no free chloral hydrate in the urine or quantities less than 1 in 40,000 (0·025 mgm./c.c.) are present.

that degree of completeness characteristic of normal animals, thereby allowing significantly measurable quantities of free chloral to appear in the urine.

Although our series of experiments is small, we feel that this measure of chloral elimination after the administration of a known dose of chloral may be a valuable adjunct to the other methods of diagnosis of liver function, and an extended trial seems justifiable.

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Nature of the Growth-accelerating Substance of Animal Tissue Cells

EVER since a technique for cultivating tissue cells *in vitro* has been developed, the isolation of the growth-promoting substances in the embryo extracts has been an important subject of research. Several important facts have been discovered during the attempts to isolate the growth-promoting substance of the chick-embryo juice tested on cultures of tissue cells of fowls. These investigations led in some respects to erroneous results, for example, the statement of the extreme lability of the active principles.

Experiments have long since indicated that the growth-promoting substances are unspecific as regards the animal species. New facts obtained lately are in favour of the assumption that one substance only is responsible for the activity.

In using beef embryo extract a most active growth-promoting fraction was obtained by isolating the nucleoproteins by using the method of Hammarsten[1]. When these nucleoproteins are dissolved in water by careful addition of sodium hydroxide and added to the culture medium of tissue cells a pronounced growth-acceleration takes place. With these substances, strains of tissue cells can be maintained for long periods of time. The ratio of phosphorus to nitrogen in the active fraction is about 12 per cent, much lower than that found by Hammarsten for the nucleoproteins of the pancreas, namely, 33 per cent. The nucleic acids found in the active nucleo-proteins belong to the thymonucleic acid type as well as the ribose nucleic acid type. The growth-promoting activity seems in the meantime to follow the fractions containing the ribose nucleotides. After reprecipitations of the nucleoproteins with glacial acetic acid in excess, the precipitate is most active and contains a relatively great amount of the ribose nucleotides and very little thymonucleic acid, whereas the non-precipitated substances remaining in solution contain relatively much thymonucleic acid and less ribose nucleic acid. These facts seem to agree very well with the statements of Jorpes[2], Levene and Jorpes[3] and lately of Casperson[4] that the ribose nucleic acid was found in actively growing animal cells and thymonucleic acid in the resting cells.

The growth-promoting activity of the substance is destroyed after digestion with trypsin for a short length of time. Likewise the activity disappears after boiling for a few minutes. This indicates that the protein forms an important part of the active compound. Experiments have further shown that the active compound can be restored after coupling of two inactive components, the one thermo-resistant, the other thermo-labile—more likely the latter is the protein component. The active principle is probably of high molecular order since they are rather easily precipitated in the ultracentrifuge.

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The Last Thousand Feet on Everest: Possible Bacterial Factor

PROF. YANDELL HENDERSON, in his article in NATURE of June 3, p. 921, emphasizes some of the difficulties facing the members of the expeditions to Mount Everest. The main handicap is the small amount of oxygen which can be breathed in per minute from such rarified air as exists at 29,000 ft. Prof. Henderson refers to my experiments on animals, which show clearly that mammals cannot be fully acclimatized to live under an oxygen pressure below 10 per cent of an atmosphere such as exists above 20,000 ft. These results have been confirmed by attempts of South American sulphur miners to establish permanent villages near this level. The highest permanent village is at 17,500 ft.[1].

The experiments with animals show also that even resting animals, which are not specially exercised or exposed to special muscular effort, cannot tolerate for an indefinite period the degree of oxygen-want in the tissues such as is suffered in an atmosphere containing less than 10 per cent of oxygen. From the symptoms in man and postmortem findings in animals, it may be concluded that all systems and organs are adversely affected by such severe anoxia and naturally the most important are the vital organs, namely, the cardio-respiratory system and the brain. Any attempt to assign supreme importance to any one organ is not likely to be successful, although the postmortem