

as to the influence of variations in oxygen tension upon CO₂ capacity.

Our experience has led us to believe that the quality of exhibiting this reaction depends upon the previous treatment of the blood. Thus in our hands freshly drawn dog's blood shows it when defibrinated, but not when oxalated. The following is typical of our results.

Equilibrating Gas Mixture	Defibrinated Blood	Oxalated Blood
Air plus 5.6% CO ₂ ...	53.5 volumes per cent. CO ₂ ...	55.0 volumes per cent. CO ₂
Nitrogen plus 5.6% " "	58.5 " " "	55.0 " " "

Experiments are under way to determine whether the influence of CO₂ upon oxygen capacity is likewise lacking in oxalated normal blood.

Variations within the body in respect to the capacity of the blood for interaction of the two gases would afford a possible ground for reconciling some otherwise difficult discrepancies.

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Observations on the connective tissue ground substance in living amphibian embryos.

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Results obtained from a study of the development of connective tissue in amphibian embryos, as presented in a previous communication,¹ show that the process is essentially in agreement with the intercellular theory of connective tissue formation.

The previous observations were made on preserved amphibian material. It has been found possible this spring to demonstrate the presence of a primary ground substance in various stages of living amphibian embryos. Living embryos, ranging from a late gastrula stage up to the free-swimming embryo, have been dissected under the binocular microscope and it has been possible in all stages to show, as was previously demonstrated in the prepared

¹ A report of this work was presented at a meeting of the National Academy of Sciences held at New Haven, November, 1919, and an abstract appears in the *Proceedings* of that Society, 1920, VI, 77.

material, that an homogeneous, intercellular, gelatinous material, permeates various regions of the embryo. This substance as seen in a living embryo is perfectly transparent and is, therefore, difficult to detect under the binocular or under a compound microscope equipped for ordinary illumination. It can, however, be readily studied with a microscope equipped for dark field illumination and numerous observations on this material have been made in this manner.

The present observations on the ground substance in living amphibian embryos, therefore, confirm those previously obtained with prepared material and show conclusively that the primary substance in connective tissue formation is a secreted, intercellular material.

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Effects of pilocarpine upon salivary fistula dogs before and after coli injection.

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In each of two healthy dogs was made a fistula of Wharton's duct. After several weeks a standard dose of 0.5 mgm. per kilo pilocarpine hydrochloride was injected at intervals of two or three days. After each dose the curve of secretion was followed for two hours by weighing the saliva on cotton pledgets by five minute periods.

Contrary to expectation, a normal curve was not readily established. The secretion increased with each experiment until both the total for two hours and the figure for the maximum individual five-minute period were approximately doubled in one case and trebled in the other. After six to eight injections the results became more constant. This gradually increasing sensitivity to pilocarpine has not yet been explained.

After a fairly constant degree of sensitivity to the drug had been established each of the above animals received an injection of $\frac{1}{2}$ c.c. per kilo of a coli vaccine (one million million killed coli