

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.

### 113 (1573)

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

By **H. G. BARBOUR** and **B. P. FREEDMAN**.

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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

per c.c.). At the height of the ensuing fever (*i.e.*, after three or four hours) was injected the standard dose of pilocarpine. In both cases the secretion curves exhibited an unusually slow onset and a much diminished maximum as well as total secretion. The saliva was of a much thicker consistency than normal.

These experiments were made at a stage of fever in which Barbour and Howard<sup>1</sup> have demonstrated a thickening of the blood. It is suggested that the latter is the chief causative factor in numerous cases of diminished secretion which have been reported in fevers.

#### 114 (1574)

### Temperature changes induced by gum acacia injections in normal and fevered animals.

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The effects of gum acacia upon the body temperature have been studied in both normal and fevered rabbits and dogs. Solutions were made in water redistilled from glass and given intravenously. In the following experiments upon rabbits 20 c.c. of fluid per kilo were injected unless otherwise stated.

Intravenous injections of control fluids (Locke's solution or physiological saline) gave an increase in temperature of 1° C. or more, subsequent to a brief depression of 0.2° C. This temperature increase could be superimposed upon the rise induced by bacto-peptone injections.

Similar amounts of 7 per cent. acacia (also 10 c.c. of 20 per cent.) gave a slight depression in normal rabbits by a few tenths of a degree centigrade, never an increase.

In five bacto-peptone rabbits in which the temperature had reached a level of about 1° C. or more above normal within 4 or 5 hours, an injection of acacia (7-10 per cent. or 10 c.c. per kilo of 20 per cent.) brought the temperature back to approximately

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<sup>1</sup> Barbour, H. G. and Howard, A. J., Proceedings of the Society for Experimental Biology and Medicine 1920 XVII.