pends upon the Na^+ concentration in plasma. Limited analytical results from the literature indicate that dentine, while still a hydrated tricalcium phosphate, differs significantly from bone in having a possibly higher Mg^{+2} and lower $(CO_3)^{-2}$ content. Its average formula approaches

$$[Ca_{8.36}Mg_{0.45}Na_{0.16}][(PO_4)_{5.34}(CO_3)_{0.88}](H_2O)_{2.0}$$

Enamel on the other hand is a more basic compound and a representative sample of human enamel has the formula

$$[Ca_{9.48}Mg_{0.18}Na_{0.11}][(PO_4)_{5.67}(CO_3)_{0.45}](OH)_{1.54}(H_2O)_{0.46}$$

which approaches that of a carbonate hydroxyapatite.

Possible variation in the basicity and composition of the inorganic compound of bone with type, species, age and pathological condition, although the subject of many studies in the past, can only be ascertained by further extensive analyses in which the errors of past work are avoided and in which the minor but not unimportant sodium and magnesium are determined. In general, evidence now available would seem to indicate that bone contains a hydrated tricalcium phosphate type of compound instead of hydroxyapatite as widely accepted and that sodium and carbonate are essential constituents of this compound.

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OCCURRENCE OF AVIDIN IN THE OVIDUCT AND SECRETIONS OF THE GENITAL TRACT OF SEVERAL SPECIES

AVIDIN, the anti-biotin factor which produces egg-white injury, has hitherto been known to exist only in the white of the hen's egg.[1] The site of origin and physiological significance of this potent biological substance have remained obscure. The white of the hen's egg represents a secretion from the mucosal lining of the oviduct.[2] Since the translucent jelly-like secretion found adherent to frogs' eggs is the direct homologue of the white of the bird's egg, it was deemed advisable to determine whether avidin might be present in this secretory product of the frog oviduct as well as in the oviduct itself. In addition, the oviduct of the hen and the eggs of several other species of birds were also assayed for avidin.

The materials to be tested were obtained in the fresh state, spread on glass plates and dried in a current of warm air at 37° C. The dried preparations were then pulverized and assayed for avidin by the yeast-growth method of Eakin *et al.*[3]

It was found that avidin exists in readily demonstrable quantities in the oviduct of both the hen and wood frog (Table I). It is noteworthy that the egg-jelly from two different species of frogs also contains very considerable anti-biotin potency. The presence of avidin in the egg-white of all the species of fowl tested should also be noted.

TABLE I

AVIDIN CONTENT OF BIRD AND AMPHIBIAN TISSUES AND SECRETIONS

Species	Material assayed	Units* of avidin per gm. dried weight
Hen (New Hampshire)	Egg white	11.5
	Oviduct	2.3
	Intestine	0.0
Wood frog (R. sylvatica)	Egg jelly	1.7
	Oviduct	0.75
	Intestine	0.0
Pickerel frog (R. palustris)	Egg jelly	1.5
Turkey	Egg white	16.2
Duck	" "	7.1
Goose	" "	8.0

* A unit of avidin is that amount required to completely neutralize the yeast growth supported by one microgram of free crystalline biotin.

Dried intestine of the hen and of the frog was employed as a control tissue and was found to contain no demonstrable activity.

The relatively low titres found in the oviduct of the hen and of the frog may be accounted for by the fact that the muscularis and stroma of these organs contribute a considerable proportion of inert material to the assay.

These data suggest that avidin is a secretory product of the oviduct of birds and amphibia and therefore may play an important role in embryonic development and in the physiology of the genital tract.

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HEREDITARY TRANSMISSION OF INDUCED TETRAPLOIDY AND COMPATIBILITY IN FERTILIZATION

THE writers have reported[1] that the change to a tetraploid condition (4n = 28 chromosomes) induced by colchicine in the branches of self-incompatible diploid (2n = 14 chromosomes) plants of *Petunia axillaris* (Lam.) B. S. P. was accompanied by a change to self-compatibility in fertilization and seed formation. It may now be reported that further investigations show that the condition of self-com-

[1] P. Gyorgy, *Annual Review of Biochemistry*, xi: 337, 1942.

[2] B. Patten, "Embryology of the Chick." P. Blakiston's Son and Co., Inc., Philadelphia. 1929.

[3] R. E. Eakin, E. E. Snell and R. J. Williams, *Jour. Biol. Chem.*, 140: 535, 1941.

[1] A. B. Stout and Clyde Chandler, SCIENCE, 94: 118, 1941.