and neuter is four. Asci derived from the cross ♀ × ♀ were also studied cytologically, and the pairing behavior and chromosome number were found to be the same. A detailed report of these findings will be presented subsequently.

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Instability of Compounds in the Folic Acid Series

There is currently a quickening of interest in studies that involve compounds in the folic acid series, particularly with regard to their effect in biological systems concerned with single-carbon transfer (*1–3*). The chemical manipulation of these compounds may result in their partial decomposition, especially under conditions where wide changes in *p*H are encountered and where the compounds are subjected to the vicissitudes of paper chromatography.

Exposure to air causes rapid oxidation of some of the folic acid compounds. Photolytic breakdown occurs when these compounds are exposed to light; this has been studied in some detail in the case of pteroylglutamic acid, but precise information is lacking with respect to other compounds in the series. Acid and alkaline conditions departing from the isoelectric point or the *p*H of formation of the compound cause various types of transformation. The citrovorum factor is rapidly converted by acid into imidazoline compounds (anhydroleucovorin-A and -B and isoleucovorin chloride), which may undergo further decomposition (*4*). These imidazoline compounds are interconvertible under various conditions of acidity and revert to leucovorin upon anaerobic treatment with alkali, while a similar aerobic treatment converts them to pteroylglutamic acid. The lability of aminopterin should be noted. This compound is readily deaminated by acid or alkali to form pteroylglutamic acid, with consequently an abrupt change in biological properties. The content of pteroylglutamic acid in aminopterin, which has been noted by various investigators (*5–7*), may be greatly augmented by inappropriate experimental manipulation. Similar comments apply to 4-amino-10-methylpteroylglutamic acid.

In planning experiments with the folic acid series of compounds, it may be well to refer to the original literature for a description of their properties. A qualitative summary of these properties together with references for additional use appears in Table 1.

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Table 1. Some properties of the folic acid compounds.

Substance	Destruction caused by				References
	Light	Atmospheric oxygen	Low *p*H	High *p*H	
Pteroylglutamic acid (PGA)	+	±	+	±	(*8*) (*9*)
Tetrahydro-PGA		+++			(*10*) (*11*)
10-formyl-PGA				++	(*11*) (*12*)
10-formyl-tetrahydro PGA		+++		+++	(*4*) (*11*)
5-formyl-tetrahydro PGA (leucovorin)		–	+++	–	(*4*) (*11*) (*12*) (*13*)
Anhydroleucovorin-A		–	+	+++	(*4*)
Anhydroleucovorin-B			+	+++	(*4*)
Isoleucovorin chloride		–	–	+++	(*4*)
4-amino-PGA (aminopterin)	+	±	+	++	(*14*) (*15*)