consin substages. A possibility is not excluded that till of the glacial advance II was the basal member of the main glacial cover III, as it was once assumed before (*17*), with the Plum Point wood deriving from the closing time of the Port Talbot interstadial interval.

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References and Notes

1. Staff members and students of the geology department, University of Western Ontario, and of various other research institutions have participated in this study, which was made possible by grants from the Research Council of Ontario and the Geological Survey of Canada. I am grateful for critical reading of the manuscript by R. F. Flint, R. P. Goldthwait, W. J. Wayne, and G. W. White.
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18 April 1957

Effect of 3-Amino-1,2,4-triazole on δ-Aminolevulinic Acid Dehydrase Activity

The conversion of δ-aminolevulinic acid to porphobilinogen is catalyzed by an enzyme (δ-aminolevulinic acid dehydrase) described by Gibson *et al.* (*1*) and Shemin *et al.* (*2*). The activity of this enzyme is reduced in the livers of tumor-bearing animals; in the livers of C57 black mice, it is much lower than it is in the livers of other strains and is not reduced by a rapidly growing, transplanted tumor (*3*). These findings parallel those previously described for hepatic catalase (*4*). This is of particular interest, for catalase is a porphyrin-containing enzyme and δ-aminolevulinic acid dehydrase is involved in porphyrin synthesis. There is no evidence at the moment, however, that in the livers of tumor-bearing animals there is a decreased ability to synthesize protoporphyrin and hence catalase.

Table 1. Effect of 3-amino-1,2,4-triazole (AT) on activity of δ-aminolevulinic acid dehydrase in the livers of DBA mice. The mean value for liver in 47 normal DBA male mice was 47.4 ± 2.6 units (standard deviation). The mean value for liver in six normal DBA female mice was 46.7.

Item	Units (3.15×10^{-2} μmole) of porphobilinogen per hour, per gram (wet weight) at various times (hours) after administration of AT										
	1	1½	2	3	4	8	12	24	32	36	48
						Dose of AT, 1000 mg/kg					
Males	45.2		40.9	35.5		33.0	36.1	37.7	38.8	41.4	
Males	47.3		40.4*	34.5*		32.6	38.8	29.6	38.8	43.1	
Males	47.3					33.4	38.8	25.8			
Mean	46.6		40.6	34.8		33.0	37.9	31.0	38.8	42.3	
Females						29.1	29.1				
Females						29.9	29.2				
Females						29.6	29.9				
Mean						29.5	29.4				
						Dose of AT, 500 mg/kg					
Males								30.8			
Males								31.2			
Males								31.2			
Mean								31.1			
Females	47.1	45.3	48.8		37.8	37.0	22.5	33.0			44.4
Females	44.9	45.3	44.5		34.4	41.0	34.4	36.1			49.7
Females	41.8	44.9	44.5			41.0	37.9	34.3			49.7
								35.7			
								38.3			
								37.4			
Mean	44.6	45.2	45.9		36.1	39.7	31.6	35.8			47.9

* These values were obtained from a homogenate of two livers. All other values were obtained from a homogenate of one liver.

Plant growth is inhibited by 3-amino-1,2,4-triazole, apparently through interference with chlorophyll synthesis (*5*). It was later observed that this compound lowered both plant and animal catalase (*6*). In rats it reduced hepatic and renal catalase activity levels, but not that of red cells, thus producing an effect similar to that observed in tumor-bearing animals.

The ability of 3-amino-1,2,4-triazole to affect two different porphyrin-containing compounds suggests a possible interference with porphyrin synthesis or inhibition of the activity of these porphyrin-containing compounds. The present study was carried out to determine whether the parallel variations of hepatic δ-aminolevulinic acid dehydrase and catalase could be caused by 3-amino-1,2,4-triazole.

DBA mice were injected intraperitoneally with an aqueous solution of 3-amino-1,2,4-triazole. Hepatic δ-aminolevulinic acid dehydrase activity was determined by the method previously described (*1*).

Table 1 shows that 3-amino-1,2,4-triazole reduces the level of hepatic δ-aminolevulinic acid dehydrase activity within 3 to 4 hours. Thus tumors and 3-amino-1,2,4-triazole are capable of causing a decrease in activity of both hepatic δ-aminolevulinic acid dehydrase and catalase.

There are three possible explanations for the effect of 3-amino-1,2,4-triazole on the two enzymes: (i) the triazole or metabolic derivative might react with a chemical group common to both enzymes, resulting in inhibition of their activity; (ii) it might also interfere with porphyrin synthesis in the liver, resulting in a lowered catalase activity level, and (iii) it might interfere with a metabolic pathway necessary for the synthesis of both enzymes. The only exception to the parallel variation of these enzymes is seen after administration of Sedormid, which produces porphyria. Following administration of Sedormid, hepatic catalase activity decreases (*7*), whereas hepatic δ-aminolevulinic acid dehydrase activity increases (*1*).

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