The techniques of mouse liver perfusion were similar to those used by other authors[10] and have recently been described in detail[11]. Intact mice were injected i.v. with 1×10^9 *Salmonella typhimurium* in a volume of 0.1 ml. After 20 min, mice were euthanatized by cervical dislocation, and the numbers of bacteria in liver, spleen and carcass samples were quantiated[11]. The differences between the total bacteria recovered and the number injected was assumed to reflect the number of bacteria killed by the host in the 20 min.

To determine if hepatic trapping of bacteria was altered in decontaminated animals, live bacteria were perfused directly into the experimentally isolated mouse liver in situ. The ability of the perfused liver to trap bacteria (Table 1) is not statistically different in either unirradiated, irradiated or GVHD affected mice, whether or not they were conventional or decontaminated.

Bacteria trapped by the perfused organ were still viable. Bacteria apparently are trapped extracellularly within the sinusoids of the perfused organ in large numbers (Figure 1). The absense of opsonic components[11] in the perfusion fluid prevented phagocytosis of bacteria by the Kupffer cells, as long as 30 min after perfusion of the microorganisms (Figure 2). Intracellular bacteria were only observed in liver monocytes following i.v. injection of the intact animal but not after perfusion of the isolated liver.

20 minutes after i.v. injection of 1×10^9 viable bacteria into conventional unirradiated mice, 50% of the organisms were killed. No significant differences in the percent of bacteria killed were noted if mice had been irradiated or were undergoing GVHD (Table 2). Likewise, the distribution of viable *S. typhimurium* among the liver, spleen and carcass was essentially similar in all three treatment groups. When normal mice or mice with GVHD were decontaminated with antibiotics, no significant differences were noted between them either in the total percent recovery or the distribution of bacteria which remained viable within the tissues. Irradiated mice were affected more by decontamination. In this group bactericidal activity in the carcass was notably lower than in the other two groups of decontaminated animals. Judging by these findings, we conclude that bactericidal amounts of antibiotic do not enter the blood stream.

Although bacterial killing remains normal after radiation and during GVHD, extrahepatic bactericidal systems, which accounted for approximately 50% of the bacteria killed within 20 min, are reduced significantly by the decontamination process. Depressed bactericidal activity was most apparent in irradiated animals. In unirradiated animals, normal granulocyte levels may partially mask a similar decontamination-induced depression of bactericidal activity. Likewise, in animals undergoing GVHD, engraftment with spleen cells may compensate partially for decreased antibacterial activity[12].

Table 1. Percent trapping of injected *Salmonella typhimurium* by the perfused liver of conventional and decontaminated mice receiving either no treatment or irradiation or undergoing GVHD

Percent trapping	Unirr	Irr[a]	GVHD[2]
Conv.[b]	65.5	69.7	73.2
Decon.[b]	62.8	76.5	72.6

[a] All experiments were done 3 days before the expected time of death for each group of mice. Irradiated mice usually die on day 14, hence experiments were performed on days 11, 12 and 13 postirradiation; mice with GVHD die on day 7 and were studied on days 4, 5 and 6. [b] 6 livers were perfused in each group.

Table 2. Percent of recovery of viable *Salmonella typhimurium* 20 min after intravenous injection of 1×10^9 bacteria into both conventional and decontaminated, unirradiated, irradiated and mice with GVHD

	Percent recovery[a]					
	Conventional			Decontaminated		
	unirr	irr	GVHD	unirr	irr	GVHD
Liver	25.5	17.6	20.7	29.2	23.3	20.6
Spleen	0.5	0.6	0.5	0.6	0.3	0.3
Carcass	25.0	23.8	29.7	38.6	59.0[b]	40.9[b]
Percent recovered	51.0	42.0	50.9	68.4	82.6	61.8
Percent killing	49.0	58.0	49.1	31.6	17.4[b]	38.2[b]

[a] No flora other than *S. typhimurium* were found in tissues at the dilutions studied. [b] Statistically different from appropriate control. 6 mice were used to obtain each value shown.

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Gonadectomy and Growth of *Taenia crassiceps* (Cestoda) Cysticerci in Mice

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Summary. Gonadectomy of SWR of both sexes significantly reduced the number of cysticerci of *Taenia crassiceps*, 60 days post infection. There was a significant decrease in the total number of larvae and the number of nonbudding individuals, corresponding with increased number of budding larvae. This indicates that the asexual multiplication of cysticerci in populations from gonadectomized mice was inhibited.

In two experiments 80 SWR mice of both sexes, 6 months old, were used. Half of them were gonadectomized a month prior to infection. All were infected with 25 nonbudding cysticerci each and killed 60 days post infection. At autopsy the number of nonbudding individuals, budding individuals, and the total number of larvae were counted.

In both experiments control females had more larvae than control males, the mean number of larvae from peritoneal cavities being 82 $\pm$ 4.33 and 73 $\pm$ 4.14 in

females, and 69 ± 7.38 and 55 ± 2.17 in males. Gonadectomy decreased the number of larvae from 82 ± 4.33 to 65 ± 6.04 and 73 ± 4.14 to 57 ± 5.50 in females, and from 69 ± 7.38 to 46 ± 3.27 and 55 ± 2.17 to 46 ± 1.83 in males. All differences were statistically significant. Simultaneously gonadectomy significantly decreased the number of nonbudding larvae and increased the number of budding larvae in both male and female mice.

The mean number of nonbudding larvae decreased from 67 ± 3.80 to 45 ± 5.76 and from 61 ± 3.69 to 41 ± 5.58 in gonadectomized females and from 56 ± 6.52 to 24 ± 3.09 and 44 ± 2.48 to 26 ± 1.43 in gonadectomized males in experiments 1 and 2 respectively.

The mean number of budding larvae increased from 15 ± 1.29 to 21 ± 1.86 and 13 ± 1.04 to 16 ± 1.11 in gonadectomized females, and from 12 ± 1.91 to 22 ± 1.40 and 11 ± 1.05 to 21 ± 1.09 in gonadectomized males. The number of buds on each of the budding larvae ranged from 1 to 4 in control mice and from 1 to 10 in gonadectomized mice.

The larvae from gonadectomized mice were larger than those from controls. The larvae from gonadectomized males measured on the average 3.2 × 1.8 mm, those from control males 2.3 × 1.4 mm. The larvae from gonadectomized females measured 3.3 × 1.6 mm and those from control females 2.8 × 1.5 mm.

Thus the present experiments showed that gonadectomy of mice slowed down considerably the asexual reproduction of *Taenia crassiceps* cysticerci and increased the average size of the larvae. The results were thus similar to those obtained with *Mesocestoides* tetrathyridia in intact and gonadectomized mice[1].

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Assimilation and Retention of Tocopherol and Chlorophylls in the Rotifers *Brachionus calyciflorus* and *Asplanchna sieboldi*

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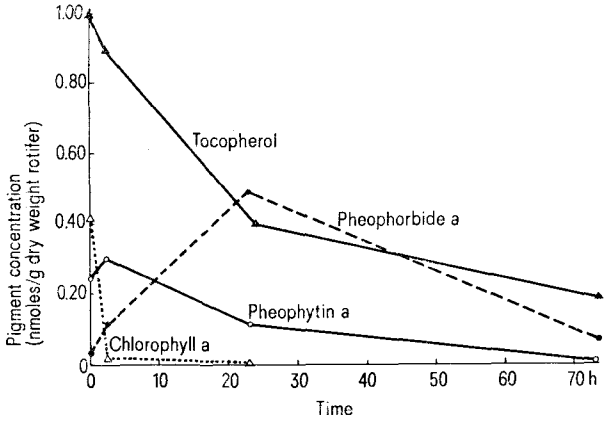
Summary. Tocopherol (vitamin E) is selectively assimilated by the rotifers *A. sieboldi* and *B. calyciflorus* as compared to chlorophyll pigments, and is retained in these rotifers for longer periods than the chlorophyll pigments. While tocopherol is lost at the rate of only about 50% per 24 h period, chlorophyll a and b are converted to pheophytin a and b and finally pheophorbide a and b in 24 h and then rapidly lost.

Dietary tocopherol (vitamin E), which is synthesized uniquely by plants, plays a major role in regulating nongenetic polymorphism in the predatory rotifer *Asplanchna sieboldi*[2,3]. The importance of tocopherol to *Asplanchna* was suggested by its retention, in vivo stability, and efficient transfer between parthenogenetic generations[4,5]. The purpose of the present study was to determine the ability of *Asplanchna* and one of the prey organisms to assimilate and retain tocopherol in relation to other compounds synthesized uniquely[6] by plants. Accordingly, we undertook a quantitative study of the concentrations of chlorophyll pigments a and b, including their degradation products, and tocopherol in the tissues of both *A. sieboldi* and *Brachionus calyciflorus* which had been feeding on the alga *Euglena gracilis*. In this way we could obtain comparative information on the degree to which these compounds were assimilated and retained.



Concentration of chlorophyll a, chlorophyll a products and tocopherol with time in *Brachionus calyciflorus* (run 1) following a several day exposure to a chlorophyll- and tocopherol-containing diet.

Materials and methods. The rotifer *Asplanchna sieboldi*, clone 12Cl, was cultivated on a chlorophyll- and tocopherol-free diet of *Paramecium aurelia* as described by GILBERT[5] in glass evaporating dishes containing about 200 ml of media. For several days prior to the experiment the diet was made to include chlorophyll pigments and tocopherol by adding a suspension of sonicated *Euglena gracilis*, strain Z, grown axenically as in GILBERT[3]. After initiation of the experiment the diet was changed back to *Paramecium* alone. The rotifer *Brachionus calyciflorus* was cultured on the chlorophyll- and tocopherol-free yeast *Rhodotorula glutinis* as in LITTON and GILBERT[7]. Several days before the experiments started these rotifers were cultured on *Euglena gracilis*, strain Z, as described by GILBERT[2]. After the experiments started, the diet was changed back to yeast.

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