appeared in the red cells in the nontoxic groups, but in the toxic groups maximum radioactivity did not appear until after 16 days.

TABLE 3.—SERUM IRON AND PERCENT SATURATION OF IBG [1]

	Number	Mean serum Fe (μg percent)		Mean IBG saturation, percent	
		Initial	Maximum	Initial	Maximum
Liver disease:					
Toxic group	8	78±45	286±74	27±13	91± 8
Nontoxic group	8	77±43	127±32	25±11	39±10
Renal disease:					
Toxic group	6	47±26	240±68	20±14	84±16
Nontoxic group	13	51±21	89±35	18± 9	30±11
No liver or renal disease: Nontoxic	16	97±45	131±54	30±13	39±19

[1] Iron-binding globulin.

Changes in peripheral blood values of the toxic and nontoxic groups are shown in Table 4. The toxic group in patients with liver disease had a mean fall in hematocrit of 8%, and the toxic group with renal disease showed a mean decrease of 5%. The hematocrit values of patients comprising the nontoxic groups did not change significantly. The reticulocyte counts of all groups decreased under treatment, but the magnitude of the fall in both toxic groups was greater than in the patients without erythropoietic depression. It should be noted that the mean control reticulocyte counts of patients with liver and renal disease were more than twice the value in patients without liver or renal disease.

TABLE 4.—PERIPHERAL BLOOD CHANGES IN CHLORAMPHENICOL TOXICITY

	Hematocrits		Reticulocyte counts	
	Control value	Lowest on drug	Control value	Lowest on drug
Liver disease:				
Toxic	35±5.8	27±5.7	1.7±0.4	0.4±0.2
Nontoxic	41±3.3	40±5.4	1.7±0.4	0.9±0.3
Renal disease:				
Toxic	38±6.8	33±8.6	2.1±0.3	0.6±0.2
Nontoxic	33±4.7	31±5.2	1.6±0.3	1.0±0.2
No liver or renal disease	43±4.0	41±3.8	0.8±0.3	0.9±0.3

The blood levels of "free" chloramphenicol, total nitro compounds, and arylamines were measured in all but one patient in each of the hepatic and renal insufficiency groups and in 12 of the 16 patients without renal or liver disease. The serum levels of "free" chloramphenicol are summarized in Table 5. In the groups of patients without renal or liver disease and showing no erythropoietic depression, serum "free" chloramphenicol ranged from 0 to 3.4μg/ml with a mean of 1.2μg/ml. In the patients with liver or renal disease but no erythropoietic depression, serum "free" chloramphenicol ranged from 2.0μg to 12.0μg/ml with a mean of 3.9μg/ml. In five patients with renal disease and erythropoietic depression, serum "free" chloramphenicol ranged from 15.0μg to 25.0μg/ml with a mean of 20.3μg/ml. Serum "free" chloramphenicol concentration in the eight patients with liver disease and toxicity were 8.0μg to 30.0μg/ml with a mean of 19.0μg/ml. Standard deviations are shown, and the differences in serum "free" chloramphenicol values between the groups without erythropoietic depression and the liver and renal disease groups showing erythropoietic toxicity are statistically significant with a P value of less than 0.005. No correlation could be drawn between hematologic toxicity and serum levels of total nitro compounds or arylamine (Fig 3, *a* and *b*).