The iron stores were inversely related to AA levels in the liver. In conditions of iron stress the available hepatic AA is released into the plasma for metabolic purposes. On Day 36 plasma AA concentrations were lowest in the Fe group, and hepatic AA concentrations were slightly higher in the FeD than in the other groups. This suggests that metabolic readjustment to AA deprivation may be altered in female guinea-pigs subjected to iron load (Odumosu & Wilson, 1971).

TABLE 1. *Tissue ascorbic acid (AA) and iron concentrations (mean±S.D.) in plasma (mg/100 ml), and liver (mg/g). Diet (Sc), pretreated with iron (Fe) or iron and desferrioxamine (FeD). Significance of comparisons with Fe group indicated* (P = <0·05)

	Plasma					Liver				
	Ascorbic acid concentrations									
Day of diet	Sc	Sig.	Fe	Sig.	FeD	Sc	Sig.	Fe	Sig.	FeD
0	0·88±0·12	S	1·65±0·23	S	0·80±0·20	17·45±5·16	NS	16·72±2·64	NS	18·16±2·11
24	0·32±0·04	S	0·51±0·09	NS	0·55±0·12	3·39±0·59	S	2·21±0·48	NS	2·88±0·57
36	0·24±0·04	S	0·13±0·05	S	0·22±0·06	1·26±0·51	NS	1·28±0·42	NS	1·77±0·31
	Iron concentrations									
0	0·20±0·05	S	0·30±0·03	S	0·23±0·01	2·55±0·43	S	11·55±1·80	S	5·48±0·77
24	0·24±0·04	NS	0·24±0·03	NS	0·21±0·02	1·13±0·13	S	4·07±1·76	S	1·76±0·19
36	0·15±0·02	NS	0·11±0·02	NS	0·11±0·02	0·58±0·03	S	1·52±0·26	NS	1·81±0·25

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Protein changes in hind limb lymph following injury

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After injury plasma proteins (Courtice, 1961 ; Courtice & Sabine, 1966) and intracellular constituents from damaged cells appear in local lymph (Perlman, Glenn & Kaufmann, 1943, Lewis, 1967). The present experiments were designed to determine the contribution which these sources make in increasing the protein concentration in lymph following injury.

Lymph was collected from anaesthetized cats as described by Lewis & Winsey (1969). Electrophoresis of plasma, lymph and homogenates of skin and muscle was carried out on starch gels prepared by the method of Smith (1960), using the discontinuous buffer system of Poulik (1957). Injury was produced by immersing one hind limb in water at 60°C for 1 min or at 80°C for 15–20 sec, or by freezing the limb in dry ice and acetone for 3 min.

Control lymph contained up to 18 separate bands representing protein constituents of plasma, although the concentrations were lower, particularly those of the higher molecular weight proteins.

After injury, when the vascular permeability had increased, there was rapid increase in total protein concentration and particularly in the higher molecular

weight proteins. However even after injury by freezing, the protein concentration in lymph did not reach that of plasma.

After these immediate changes additional proteins appeared in the lymph which seemed to originate in the damaged tissue. One major protein band was found in lymph collected after injury, which migrated faster than α_2 macroglobulin but slower than the haptoglobins. It could not be detected in control lymph or in plasma collected after injury. The density of this protein band increased with increasing severity of injury. After a 60°C burn its appearance was delayed for about one hour after reaching a maximum at 2–3 h; whereas after an 80°C burn it appeared within the first hour.

This component was eluted from Sephadex G-150 superfine with proteins of molecular weight 70,000.

When lymph collected after injury was chromatographed on Whatman DEAE-cellulose, the additional protein band separated into three components. One contained 5–10% of the total lactate dehydrogenase activity and a second contained about 60% of the total creatinine kinase activity of the lymph. The third component was not associated with these enzyme activities.

Homogenates of muscle but not of skin, contained a major protein component having the same electrophoretic mobility as the extra protein in lymph collected after injury.

Chromatography of this muscle homogenate on DEAE cellulose and Sephadex G-150 superfine resulted in the separation of a protein band with the same elution characteristics as that found in lymph after inury.

The protein bands in lymph and in muscle homogenate are therefore indistinguishable on these criteria and their presence in the lymph is indicative of muscle damage.

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A quantitative assessment of tissue changes accompanying homograft reaction: changes in tissue dry weight, DNA and moisture content in rabbit skin homografts

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Until recently the influence exerted by various chemical substances and immune sera upon the strength and rapidity of onset of skin homograft rejection has been evaluated chiefly on the basis of the prolongation of graft survival, and this has been judged either as a change in the outward appearance of the graft indicative of cessation of blood flow through it or as the actual shedding of the graft itself.