from this typical curve, representing the destruction of bacteria, during the summer months: During the very hot season we found in a number of cases instead of a decrease, a considerable increase in the number of bacteria in the transplants within the first 3 days, in the rat as well as in the guinea-pig. Furthermore, the count of the bacteria living on the normal skin seemed to be higher during the hot weather of the summer than during other seasons. Except for the effect of great heat ordinary variations in temperature did not seem to affect the fate of the bacteria. 4. If we compare the readiness with which the bacteria of the skin are destroyed after subcutaneous transplantation in these 3 types of animals we find the rabbit to be the most effective in this respect, and the rat to be almost as much so, while the guinea-pig destroyed the micro-organisms somewhat less actively than the other species. However, on the whole the curve representing the diminution of bacteria on successive days was similar in these 3 species. 5. It seemed that the destruction of bacteria proceeded more actively after hetero- than after autotransplantation of the skin. We are continuing these experiments.

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Erythrocyte Sedimentation Rate of Citrated Blood and Distribution of Plasma Proteins.

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An attempt was made to determine the relationship existing between an increased erythrocyte-sedimentation-rate (ESR) and the quantitative distribution of plasma proteins. In the venous blood of the dog it was observed that a marked increase in the ESR occurs promptly upon the establishment of a sterile abscess produced by subcutaneous administration of turpentine, which is characterized by endogenous tissue absorption. The ESR rapidly returns toward normal upon absorption, or surgical drainage of the exudate. Significant changes in the quantitative distribution of the protein fractions of the plasma were observed, incident to this type of systematic stimulation and appear to have a correlation with the various phases of the rather acute inflammatory process, as is outlined in Table I.

TABLE I.
TURPENTINE ABSCESS IN DOGS.
Viscosity and Protein Content of Plasma with Relation to the ESR.

	Date—January	Plasma Protein %	Fibrin %	Protein Quot.	Plasma Viscosity	ESR 2 hours	
Dog No. 1	16	8.41	0.40	1.4	1.670	.05	Normal
	16	—	—	—	—	—	Turpentine subcutem 2 cc.
	20	6.58	0.28	2.1	1.914	.14	Large indurated mass palpable under skin
	23	8.14	0.80	1.1	2.368	.55	Marked softening
	25	7.50	0.50	3.4	2.000	.46	Drainage of abscess
	28	6.40	0.34	1.6	1.726	.38	Healing
Dog No. 2	20	5.77	0.32	1.6	1.708	.17	Normal
	20	—	—	—	—	—	Turpentine subcutem 2 cc.
	24	7.60	0.73	1.3	2.277	.57	Softening of inflammatory mass
	27	6.24	0.65	2.2	1.954	.35	Marked absorption
	30	6.80	0.41	1.4	1.786	.28	Absorption nearly complete

Following the establishment of a definite inflammatory process in the dog, an increase in plasma viscosity, presumably incident to the lesion, is associated with a somewhat increased amount of total protein, with a significant increase in the amount of circulating fibrinogen and a very much accelerated velocity of sedimentation of the erythrocytes. These changes in the amount of fibrinogen and in the ESR are of considerable magnitude and correlate closely in time of appearance and extent with the existing pathologic state experimentally induced. Changes observed in the value of the protein-quotient are not wide, fluctuate somewhat irregularly and barely suggest an increasing ratio of globulin to albumin, with progression of the induced lesion.

In addition, in an extended study of the arterial blood of normal rabbits, and, of rabbits subjected to stimuli afforded by sterile abscess and by tuberculosis of visceral organs, this relationship of an increased ESR, increase in fibrinogen and increase in plasma viscosity, was observed with regularity. Likewise in the examination of venous blood of humans with acute infections these changes in the properties of blood and of plasma were co-existent. From the data available, it is not to be considered that an increase in the velocity of sedimentation of red blood cells is dependent upon an increase in the amount of fibrinogen in the plasma, but that under these types of experimental stimulation these changes were observed to be concomitant.