the increase were determined by the ketogenic component exclusively, the ultimate value should be only one sixth larger, that is to say, twenty-one per cent on the average. The difference was statistically significant.

In two cases the blood of the same patients was examined before and after intake of fat, and before and after intake of fat and protein.

INCREASE OF KETONE COMPOUNDS IN BLOOD		
	After fat and protein	After fat alone
Diabetes	43 per cent	0 per cent
Cirrhosis of liver	49 per cent	16 per cent

These two cases clearly show the reliability of the conclusion drawn from averages of all cases investigated. In both cases a considerable increase is evident after ingestion of fat and protein; whereas one of them shows no increase at all after fat alone, and the other a slight increase, corresponding to the average of all cases.

Summary. After ingestion of fat and protein, the blood shows a considerably increased content of ketone bodies as compared to fat ingestion alone. This exceeds significantly the amount which could be ascribed to the content of proteins of ketogenic amino-acids, and therefore it may be assumed that proteins exert a specific ketoplastic effect.

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Treatment of Keratitis rosacea with Small Doses of Testosterone

In the course of some investigations on 'endocrine allergy', it was found that patients with keratitis rosacea (six cases) give a positive intracutaneous test to testosterone. Tests with a series of several other steroid hormones, on the other hand, were negative. Testosterone administered intracutaneously in increasing doses for the purpose of desensitization brought about a striking improvement of the ocular condition in all the patients. In cases in which the keratitis rosacea was associated with facial rosacea, a distinct improvement was also observed in the latter condition.

Although therapeutic results in keratitis rosacea must be interpreted cautiously in view of the occurrence of spontaneous remissions, allergy to testosterone appears to be a cause of this condition in at least a high percentage of cases. A detailed study will be published in the *British Journal of Ophthalmology*.

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¹ Zondek, B., and Bromberg, Y. M., *J. of Allergy*, **18**, 1 (1945).

Development of *Ornithodoros moubata* on Normal and Thiamin-deficient Rats

De Meillon and Golberg¹ reported that early nymphs of *O. moubata* when fed on thiamin-deficient rats display a retardation of growth as compared with nymphs fed on rats given a full diet. Since that time, the ticks have been reared to maturity and the following results obtained.

DEVELOPMENT OF *O. moubata* ON NORMAL AND THIAMIN-DEFICIENT RATS

Stages of development		Rats fed on	
		Full diet	Thiamin-free diet
I	No. fully fed	20	24
II	P	96	100
	T	9.2 ± 0.4	11.6 ± 1.4
III	P	100	90
	T	8.6 ± 0.7	14.0 ± 1.2
IV	P	100	100
	T	8.8 ± 1.4	12.5 ± 1.7
V	P	100	78
	T	14.5 ± 1.0	26.4 ± 12.0
VI	P	—	64
	T	—	15.2 ± 0.8
Mean time (in days) to adult stage		41.1	79.7
Number of moults to reach maturity		4	5

P, percentage of fully fed ticks which moulted.

T, mean and standard deviation of time (in days) from feed to moult.

The evidence presented in the table shows that thiamin deficiency in the host affects the development of *O. moubata* by prolonging the time taken between each feed and the subsequent moult, and by inducing an additional moult before maturity is reached. As a result, the ticks on thiamin-deficient rats take almost twice as long to become adults as do ticks fed on normal rats. Unfortunately, all the ticks from the control group of nymphs were females, so that it is not possible to compare egg production in the two groups.

We have now shown that two unrelated blood-sucking arthropods, *Cimex lectularius* and *O. moubata*, are adversely affected by feeding on thiamin-deficient rats. Experiments with other deficiencies are under way.

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De Meillon, B., and Golberg, L., *Nature*, **158**, 269 (1946).

Seasonal Variations in Vitamin C Content of Tomatoes Grown in Great Britain

RESULTS obtained in the Ovaltine Research Laboratories in 1942¹ suggested that the vitamin C content of tomatoes grown in Great Britain is affected by the degree of exposure to sunshine during cultivation. It is also related to the size of the fruit, position on the plant, date of collection, etc.; but if these and other disturbing factors are balanced by careful sampling, the average vitamin C content might be expected to vary significantly with sufficiently wide differences in climatic conditions in different seasons.

These suggestions have been supported by experimental results obtained at Long Ashton in 1944² and 1945³. The average vitamin C content of tomatoes grown out of doors in 1945 was only three quarters of