weeks at 1/400,000, while the isomeric α-α′-di-*n*-heptyl acid ester inhibits for three to four weeks at 1/800,000–1/1,000,000 and for six weeks at 1/300,000. The strain used in these experiments was from the National Collection of Type Cultures (No. 46) and was grown on ordinary nutrient peptone broth.

These drugs inhibit the growth of *Staphylococcus aureus* at 1/20,000 and *C. diphtheriæ* (*mitis*) at 1/40,000 *in vitro*. They do not affect the growth of *Bact. Coli* or of *Aerobacter aerogenes* at 1/1,000.

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'Fissibactericidal' Nature of Penicillin Action

WORK reported in several recent papers[1,2] has verified the bactericidal mode of action of penicillin on certain bacteria. The most important point brought out in these publications is that penicillin works preferentially, or solely at low concentrations, on those bacteria in the growth phase or undergoing actual fission.

Just as it was logical for one to search for antibacterial substances produced by various micro-organisms grown in the presence of bacteria, it seems logical that some of the moulds or other micro-organisms thus growing and competing with any bacteria present for the available food supply should finally become able to produce and secrete substances which are active in low concentration upon rapidly growing bacteria. The 'invading' bacteria would be of no immediate importance to such micro-organisms unless they were actively growing, since the latter would not have to share with them the food commonly available. This manner of action, which has been proved to exist *in vitro* for *S. aureus*, should it also be present in Nature, would offer a way of survival for the bacterial species in question, since any change in conditions which of itself would arrest active fission of the 'invading' bacteria would render them insusceptible to the antibacterial action of the penicillin-like secretion.

This above discussion must for the present be limited to penicillin, since the process has been proved for this substance only. The concept, however, is thought to be of more general interest and application and is pointed out for this reason.

It is felt that a new word is needed to describe the particular kind of bactericidal action discussed here, and typified by the action of penicillin on susceptible organisms (*S. aureus*). This word must mean an agent which kills bacteria only when they are growing or dividing, and in this sense, the term 'fissibactericide' is tentatively suggested. Since the experimental work to date has eliminated most of the other phases in the growth-cycle as ones during which the organism is most susceptible to the action of penicillin, the stem 'fissi-' has been chosen.

Additional work is being carried out which will extend observations on the *modus operandi* of fissibactericidal substances.

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An Undialysable Pressor Principle in Organ Extracts

IN an earlier[1] communication the occurrence of an adrenaline-like pressor substance in ether extracts of various animal organs has been reported. The primary extracts were made with two volumes of alcohol. After evaporation of the alcohol from the filtrate and removal of fats and lipoids with ether, the clear aqueous phase was subjected to dialysis for forty-eight hours in 'Cellophane' bags against running water. The content in the bags after dialysis showed a strong pressor action on the cat in chloralose anæsthesia. On concentration and treatment with six volumes of alcohol, the pressor activity was found partly in the precipitate and partly in the filtrate. After this treatment the whole of the pressor activity became dialysable.

The two fractions, the alcohol-soluble and the alcohol-insoluble one, showed different properties. The former behaved in many respects like the adrenaline-like substance described earlier[1], whereas the latter was stable in alkali but destroyed by heating in an acid solution.

Purification work and analysis of the biological actions is in progress.

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Losses of Nitrous Nitrogen from Soils on Desiccation

LOSSES of nitrite nitrogen from acid soils have been reported by a number of workers[1]. Recently, during the course of our studies on the losses of nitrogen from soils, we noticed that a part of the nitrous nitrogen disappeared when soils with a *p*H value higher than 7·0 were allowed to dry.

TABLE 1. EFFECT OF DESICCATION ON NITROUS NITROGEN OF THE SOIL.

Serial No.	Treatment of the soil	Mgm. nitrogen per 100 gm. soil		
		Am. 'N'	Nitrous 'N'	Nitric 'N'
1	Control	0·84	0·01	1·6
2	,,	0·84	0·01	1·6
3	With 5 mgm. nitrous 'N'	0·75	1·02	1·6
4	,, ,,	0·75	0·96	1·6