

amount of flour dust in the air, and on this account control experiments have been carried out at the Microbiological Department, Rothamsted Experimental Station, Harpenden, where the atmosphere is relatively free of contamination.

Several different types of sterilising boxes obtained from various sources were tested at St. Albans and Harpenden. These boxes are made of copper, and differ only in the type of their lids. Two principal types of lids were used in this work: (1) in which the lid, which is about three-quarters of an inch in depth, fits to the body of the box, so that the top of the lid and the rim of the body are flush, and (2) in which a deeper lid (about $2\frac{1}{2}$ in.) fits over the body of the box for a distance of three-quarters of an inch only, resting upon an annular flange which runs round the body of the box. In this case there is a space of approximately one and a half inches between the rim of the box and the top of the lid. Both these types are in common use in bacteriological laboratories.

It was found that in type (1) all the plates became infected at St. Albans and Harpenden, and it did not matter whether bacterial (pH 7.2) or fungal (pH 4.8) media was used for plating, nor did wrapping the individual plates in crepe paper lessen the amount of infection. Type (2) gave variable results at St. Albans; but the plates remained clean at Harpenden. It would seem that contamination is brought about by the expansion of the air in the boxes when they are heated in the oven to 160° C. for half an hour, an inrush of external air occurring on cooling bringing bacterial infection with it.

These results show that the sterilising boxes now employed in bacteriological laboratories, especially in places where the atmosphere is at all likely to be contaminated, must be carefully tested before any confidence can be placed in the sterility of the plates. In the circumstances, it became necessary to devise other types of sterilising boxes to overcome this difficulty. The following devices were found effective: the lid of the box should be three inches in depth and must fit closely throughout its whole length to the body of the box, the rim of the body being flush with the top of the lid. Another type that was found effective is similar to the last in depth and shape of lid, but the lid is surrounded by an outside flange which leaves an air space of one eighth of an inch between the lid and the body of the box. This space is tightly packed with cotton wool as an extra precaution. Using either of these types, clean plates have invariably been obtained.

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A New Alkaloid of Ergot

IN addition to ergometrinine¹ which we recently described, we have now isolated from ergot a new crystalline alkaloid which is very sparingly soluble in water. It has phenolic properties and the high specific optical rotation, $[\alpha]_{5461}^{20} = +522^\circ$ (*c* in chloroform = 1). It decomposes at about 228° with formation of a black tar, and, like ergotinine, which it superficially resembles, it is sparingly soluble in

methyl alcohol. It crystallises from a number of solvents, but from aqueous acetone it crystallises particularly well in long stout prisms. It gives the typical colour reactions of the known ergot alkaloids.

Analyses of the crystalline base have given consistent data which indicate the formula $C_{30}H_{35}O_5N_5$, but as we have so far been unable to prepare crystalline salts for confirmatory analysis the formula is suggested with some reserve. In order to prevent possible later unnecessary complications in nomenclature, we prefer for the present to defer naming the alkaloid until more is known concerning its relationship to other ergot alkaloids.

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¹ NATURE, 136, 259 (1935).

Recent Research on Cancer

IN the article in NATURE of December 28 entitled "Recent Research on Cancer" there appears a misinterpretation of the results of our experiments. Perhaps the best way of clarifying the position is to summarise our results to date.

We have not been successful, in a single instance, in inducing cancer of the stomach, or of the tongue, in rats infected with *G. neoplasticum* whether fed on "a full and healthy diet", on white bread only (as in Fibiger's experiments) or on any other variation which we have tried.

Our results give no indication whatever "that diet may influence the occurrence of malignant disease". If compelled to give a conclusion on this point we would say that our experiments suggest that diet does not "influence the occurrence of malignant disease".

It would appear that the origin of the misunderstanding is to be found in the summary given at the beginning of the twelfth annual report of the British Empire Cancer Campaign itself, which, by inference, suggests that, with the aid of an incorrect diet, the parasite is capable of inducing cancer in rats. This we have not shown.

A clear understanding of the present position can best be obtained by reading our own full account given on page 87 of the above report and by referring to "Spiroptera Cancer and Diet Deficiency"¹.

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¹ R. D. Passey, A. Leese and J. C. Knox, *J. Path. and Bact.*, 40, 198 (1935).

Effect of Visible Rays on Bacterial Growth

I NOTE with great interest that experimental work is being done to investigate the effect of visible rays on bacterial growth. During a course of lectures I gave at the Royal Institution in 1911, I showed specimens of *B. prodigiosus* which I had subcultivated for several generations in a narrow band of spectral light having a maximum at 620 m μ , which exhibited very marked red pigment formation, and similar cultures grown in light of 550 m μ and 450 m μ , which