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## Report for 1929

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## The Soil Population and Its Behaviour

### Rothamsted Research

Rothamsted Research (1930) *The Soil Population and Its Behaviour* ; Report For 1929, pp 59 - 59 -  
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ascribed to the production of manganous hydroxide by an interaction of quinhydrone with manganese dioxide associated with the soil colloids.

#### THE SOIL POPULATION AND ITS BEHAVIOUR.

(Bacteriological and General Microbiological Departments.)

##### (a) BACTERIA.

- XIX. P. H. H. GRAY. "*Vibrio (Microspira) Agar Liquefaciens.*" Gray and Chalmers. *Annales de l'Institute Pasteur*, 1929. Vol. XLIII, p. 1058.

A reply to a criticism in a previous number of the above journal as to the cultural purity of the organism described by Gray and Chalmers in 1924.

##### (b) PROTOZOA.

- XX. D. WARD CUTLER AND L. M. CRUMP. "*Carbon Dioxide Production in Sands and Soils in the Presence and Absence of Amoebæ.*" *Annals of Applied Biology*, 1929. Vol. XVI, pp. 472-482.

Experiments are described on carbon dioxide production from soil and sand cultures containing a species of bacterium with and without amoebæ. The following results were obtained:—

1. Carbon dioxide production and bacterial numbers are correlated provided that amoebæ are not present, or are present in very small numbers.

2. The bacteria are more efficient as producers of carbon dioxide when their numbers are not rising, and less efficient when their numbers are increasing. This does not hold for young cultures. Also each bacterium becomes less efficient as the density of the population increases.

3. The amoebæ cause a decrease in carbon dioxide production in sands containing peptone, but an increase in sands containing mineral salts solution with glucose or soil extract.

#### THE PLANT IN DISEASE; CONTROL OF DISEASE.

(Entomological and Mycological Departments.)

##### (a) INSECT PESTS AND THEIR CONTROL.

- XXI. A. D. IMMS. "*Some Methods of Technique applicable to Entomology.*" *Bulletin of Entomological Research*, 1929. Vol. XX, pp. 165-171.

Describes methods of technique applicable to entomology that have been used by the author in the course of a number of years' experience. It deals with methods of mounting, staining, preserving and rearing insects adapted for different lines of investigation, and has been written with a view to assisting research workers both in this country and in other parts of the Empire.

- XXII. J. DAVIDSON AND H. HENSEN. "*The Internal Condition of the Host Plant in Relation to Insect Attack, with Special Reference to the Influence of Pyridine.*" *Annals of Applied Biology*, 1929. Vol. XVI, pp. 458-471.

Certain substances administered to the roots of broad beans are absorbed and transferred to the leaves and stems. Pyridine,