different nutrients are present at centres of high metabolic activity. The significance of these effects will be discussed in a separate communication.

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[1] Clements, H. F., *et al.*, *Hawaiian Planter's Rec.*, **25**, 227 (1941).
[2] Singh, B. N., *et al.*, Progress Report of Researches on Physiology of Wheat and Sugar-cane, I.C.A.R., India (1940–42).
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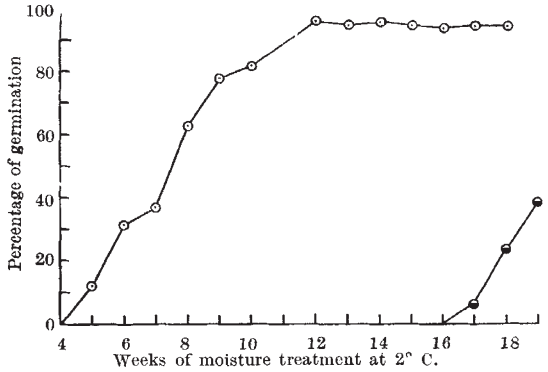
Germination of Seeds of *Bartsia odontites*

In the first stages of an investigation into the growth requirements of certain members of the British Rhinantheæ, it was found that the seeds of *Rhinanthus crista-galli* and *Bartsia odontites* do not germinate when exposed to moisture at 15° C. or 20° C. for periods of up to one year. It was hence considered necessary to establish conditions which would permit germination to be brought about as required in the laboratory. The work of Heinricher[1] showed that in pot culture the seeds of *Bartsia* and *Rhinanthus* spp. would germinate in the absence of the roots of suitable host plants, but that the majority of the seeds would not germinate for some months after being exposed to moisture. Heinricher also suggested that the germination of these seeds might be influenced by the degree and duration of the winter coldness. Accordingly experiments were set up which were designed to study the effect of low-temperature stratification on the germination of the seeds of *Bartsia odontites* and *Rhinanthus crista-galli*. The present communication concerns the effect of this treatment on *Bartsia* seed germination.

In the investigation three lots of freshly gathered *Bartsia* seed were exposed to moisture at 2° C. At weekly intervals samples of each lot were placed on damp filter paper and incubated at 15° C. for a definite period calculated so that the amount of treatment at 2° C. plus that at 15° C. totalled nineteen weeks. Germinated seeds were removed at weekly intervals. The accompanying graph illustrates the results obtained and each plotted point in the figure is the mean of three determinations. It will be seen that no germination was induced by the treatments until the seeds had been moisture-treated at 2° C. for five weeks. After twelve weeks of treatment at 2° C. followed by six weeks of exposure to moisture at 15° C., 95 per cent of the seeds had germinated. From the twelve-week period onwards, the effect of the additional 2° C. treatment was to shorten the length of the subsequent treatment at 15° C. required to give maximum germination. Thus, after eighteen weeks, maximum germination was induced by exposure to moisture at 15° C. for one week. It will also be seen that after sixteen weeks a progressively increasing number of the seeds had germinated at 2° C.



⊙—⊙—, Germination at 15° C.; ●—●—, germination at 2° C.

I wish to acknowledge the assistance of Dr. E. M. Burrows, who collected the requisite *Bartsia* seed.

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Feb. 26.

[1] Heinricher, E., *Jahrb. wiss. Bot.*, **36**, 665 (1901); **46**, 273 (1909).

Motility Testing of *Bact. coli O* Group III Strains

Hilton and Taylor[1] obtained highly motile cultures of *Bact. coli D* 433 and of four other *Bact. coli O* group 111 strains by repeated subculture in nutrient broth and semi-solid agar and incubation at 22° C.; the period of passage required for this change was three to four weeks in semi-solid agar and slightly longer in broth. In this Laboratory, *Bact. coli D* 433 and other *Bact. coli O* group 111 strains have been found to develop a high degree of motility in 18–24 hr. under the following conditions. The strains are inoculated by a straight wire into 3 ml. of semi-solid agar (5 parts digest ox-heart broth + 1 part nutrient digest ox-heart agar, final *p*H 7·4–7·6) in small screw-capped bottles (bijou type). A microscopic examination for motility is made of the surface growth which develops in 18–24 hr. at 20–22° C. The method has been used satisfactorily for routine motility testing of these organisms when subcultured direct from stock strains (stored at room temperature for 6–22 months in nutrient digest ox-heart agar stabs or on slopes of Loeffler's serum medium) or from fresh subcultures on MacConkey's medium.

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Occurrence of *Asparagopsis armata* Harv. on the Scilly Isles

The red alga, *Asparagopsis armata* Harv., was originally found in Australia, where it is very abundant along the south coast; it occurs also in New Zealand and Tasmania[1]. It was first recorded in the northern hemisphere in 1925 by Sauvageau[2]. Its naturalization along the European and North African coasts has been followed and described by J. Feldmann and G. Feldmann[3] and shown to be coincident with that of *Falkenbergia rufolanosa* Harv., the tetrasporic generation of *A. armata*. No occurrences were recorded north of the coast of Brittany. Since that account, however, *Asparagopsis* has been found at