some leaves as they unfolded and these later broke away from the expanding leaf blades, became brown and fell out, leaving 'shot-holes'. Most of the diseased shoots grew only slowly.

Viruses, afterwards identified as beet ringspot virus by plant-protection tests in White Burley tobacco and by serological tests[3], were readily isolated from each diseased tree by mechanical inoculation of leaf extracts to *Chenopodium amaranticolor* Coste and Reyn., *Petunia hybrida* Vilm. and cucumber plants: the symptoms in these hosts were typical of beet ringspot virus. The numbers of local lesions produced by leaf extracts from different peach plants were 100–212 and 27–160 per inoculated leaf of *C. amaranticolor* and *P. hybrida* respectively. Beet ringspot virus was isolated only from leaves with symptoms: no virus was detected by inoculations from the eighteen plants that did not show symptoms or from control plants grown for the same period in steam-sterilized potting compost.

The symptoms in peach seem very like those caused by peach yellow bud mosaic virus in California[4]. This virus has also been transmitted by mechanical inoculation to plants of other species[5], and there is evidence that it also is soil-borne[6]. It therefore seems possible that beet ringspot and peach yellow bud mosaic are the same or closely related viruses.

Tomato black ring[7] and potato bouquet[8] are two other viruses which seemed to have properties similar to those of beet ringspot virus, and experiments have shown that there is a relationship between them. As these viruses have been found in England, Germany and Scotland, respectively, there is now good evidence that viruses of this type are fairly widely distributed.

This is thought to be the first record for western Europe of the natural mode of transmission of a virus in a fruit-tree species.

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Blindness in Early Summer Cauliflower

WIEBOSCH *et al.*[1] distinguished two forms of blindness in cauliflowers, namely, common blindness, where there is a sudden transition from normal development to complete blindness, and 'whiptail' (not due to molybdenum deficiency), where the leaves are malformed and small swollen 'stem organs' are produced in the centre of the plant. These workers suggested that both forms of blindness may be caused by a period of low temperature during the early stages of growth. A similar suggestion has been made by Smith[2]. Recently, Mounsey-Wood[3] found that blindness was associated with frost during the early growth of the crop, and suggested that low temperature when the seedlings were at a certain stage of development was likely to cause blindness.

Table 1

Period of low temperature treatment	Mean No. of leaves initiated before low temperature treatment	Effect of treatment: Percentage of plants with common blindness	Percentage of plants with partial blindness*
Feb. 8–22	3·2 ± 0·4	6·7	10·0
Feb. 22–March 8	4·8 ± 0·8	6·7	20·0
March 8–22†	7·3 ± 0·8	16·7	43·4
March 22–April 5	10·8 ± 0·8	6·7	6·7
Control (no low temperature)	—	0	3·3

* Termed 'whiptail' by Wiebosch *et al.* (ref. 1).
† The percentage of plants with blindness resulting from this treatment was significantly greater ($P < 0{\cdot}01$) than that from the other treatments.

Evidence supporting this hypothesis has now been obtained at this Station.

Seed of the cauliflower variety Finneys 110, which is not normally susceptible to blindness, was sown on January 24. At different stages of growth, batches of thirty young plants were subjected to a temperature of 33 ± 2° F. for a period of fourteen days in a refrigerated cabinet which was illuminated artificially at an intensity of approximately 200 ft.-candles for the natural day-length. Except during the cold treatment period the plants were grown under conditions where the temperature did not fall below 45° F., until they were planted in the field on April 9. As a precaution, the plants were watered with sodium molybdate solution to prevent blindness from being caused by a deficiency of molybdenum[4].

The results obtained under the conditions of this experiment indicate that plants of this variety were particularly sensitive to a period of low temperature at a stage of development when approximately seven leaves had been initiated, as revealed by apical dissection.

Low temperature treatment before or after that stage caused blindness to a lesser extent.

Further work on this subject is proceeding, and a detailed account will be published elsewhere.

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Isolation of *Leptotrichia buccalis* and *Fusobacterium* Species from Oral Material

CONSIDERABLE difficulty has been experienced by many workers in distinguishing between strains of *Leptotrichia buccalis* (Trevisan) and species of *Fusobacterium* (Knorr).

Bøe and Thjøtta[1] suggested that many of the organisms described by Spaulding and Rettger[2], Hine and Berry[3] and other workers as members of the genus *Fusobacterium* were in fact strains of *Leptotrichia*. These workers also cite Nieber[4] as having difficulty in separating strains of *Leptotrichia* from *Fusobacterium* species. The work of Jackins and Barker[5] on the metabolism of *F. nucleatum* (Knorr) and *F. plauti-vincenti* (Knorr) showed that these two organisms, although placed in the same genus, differ considerably in their metabolism and their Gram-staining reaction. This latter organism, which is