

This, as you know, is the most effective means of controlling many of our insect-borne human and animal diseases. However, in the case of plants where the economic factor is much more prominent than in the case of human diseases, at least, I believe that our chief hope for the future lies in the discovery of, or the breeding of, resistant varieties. Much progress has already been made in this direction in connection with quite a number of the virus diseases of plants and while the breeding of a sandal strain resistant to spike will probably be very difficult, still it seems to me to be our chief hope for the future.—*The Journal of the Mysore Agricultural and Experimental Union*,

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## THE CINEMATOGRAF IN AGRICULTURAL EDUCATION

### A Leicestershire Experiment

BY

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The Empire Marketing Board supplied lists of films applicable to agriculture and allied subjects, and arranged to provide most of the films free of charge. Amongst them the following were selected as most suitable for the experiment :

Commercial Potato Growing (British)  
 Co-operative Marketing of Eggs (Canadian).  
 Aspects of Modern British Poultry Farming (British).  
 Soil Physics (Canadian).  
 The Life of a Plant.

No difficulty was experienced in obtaining other films of interest and educational value, although those which dealt with home practice were not so readily available as films produced overseas.

*Procedure.*—The van commenced its itinerary in October 1928, and visited villages in which a suitable room could be obtained. The more modern elementary schools, with their movable screens, usually provided sufficient space for seating accommodation and the fireproof cabinet which enclosed the projecting apparatus. Schools or village halls in which electric lighting had been installed were used where possible.

In spite of the fact that a 'cold light' was used in the projector, the lamp being of the filament variety, the County Police Authorities required to be notified several days in advance of the display, and a permit was issued after the local police officer had reported as to the suitability of the premises. The permit required that proper gangways should be provided, exit doors readily accessible and labelled, and sand, water and blankets available for use in case of fire.

The van was drawn up outside the building and placed in a convenient position as near as possible to the room in which the films were displayed. A

length of insulated cable was carried from the switchboard in the van to the projector inside the school, through the upper part of a window. The projector worked most satisfactorily, throwing a sharp flicker-free picture about 6 feet square, at about 40 to 50 feet distant. The faint 'ticking' of the mechanism was not sufficiently loud to inconvenience the lecturers. Lantern slides were also utilized, these being of use on the rare occasions when the cinematograph apparatus could not be employed.

Farmers, small-holders, poultry-keepers, and others interested in land or live stock were notified by letter or small handbill of the dates and times of the lectures to be delivered. Posters were also exhibited in the district. It was usually found convenient to remain at a centre for three or four nights, thus enabling the Agricultural Organizer, the Poultry Instructor, the Horticultural Instructor, or the Dairy Instructress to deliver lectures in their respective subjects.

*Films Shown*—At the first centre visited, Market Bosworth, an agriculturist district, the number of persons who attended on the three nights on which the lectures were given was over 400, the room being filled each night. The films shown at this centre were generally typical of those shown throughout the tour. They included the following:

Evolution of a Grain of Wheat.

Soil Physics.

Co-operative Marketing of Eggs.

The Life of a Plant.

The practice adopted throughout the tour was for the lecturer to outline the subject of the lecture and then to follow with a running commentary on the film as it was shown. After the film had ended, the lecturer proceeded with his remarks, and a period was devoted to questions.

The close interest with which the audience followed the films, and the questions asked at the close of the lecture, showed that this form of presentation of technical subjects was fully appreciated.

As the tour progressed other films were obtained, among the subjects dealt with being Bee-keeping, Sugar Beet, Clean Milk Production and Distribution, and the Rat Menace. Films of general interest were also displayed, these usually dealing with life in the Colonies, and including such subjects as forestry, cattle, sheep, and pig farming; and experimental farms in Ontario.

A particularly good film, 'The European Corn Borer', depicting the ravages of an insect pest in a maize crop, although of interest mainly as illustrating one of the difficulties experienced by American and Canadian farmers, was useful in comparing its similarity to pests found in our own country.

Films dealing with milk were in regular use. A film prepared for a firm of London milk retailers, showing the methods adopted in conveying of milk from the milking pail to the breakfast table, was greatly appreciated. This film had been admirably prepared, the captions were skillfully written and humorously illustrated by sketches. A long film loaned by the National Milk Publicity Council was also shown, and was of value in describing the care

required in the production of 'Certified Milk'. Lantern slides supplied by the National Milk Publicity Council were also shown.

Two films prepared by the British Instructional Films, Ltd., 'Commercial Potato Growing' and 'Aspects of Modern British Poultry Farming', provided valuable material for the horticultural and poultry lecturers. These two films were especially useful as dealing with home practice.

The 'Commercial Potato Growing' film provided an elementary survey of salient points in successful potato growing, and illustrated the common methods employed by the average farmer. It demonstrated the following processes:

Riddling the crop for 'seed'; sprouting the 'seed'; examining the sprouts; opening the furrows; applying the various manures; planting 'seed' and cultivating the crop; lifting and preparing the crop for market. The treatment of blight and the regulations laid down regarding wart disease were also explained.

The poultry film pictured the details of hatching, rearing, housing, and feeding, and the basis for the economic nutrition of poultry for egg and flesh production.

The Canadian film on the Marketing of Eggs was displayed on several occasions. This film described how our Canadian friends have successfully surmounted the difficulties experienced in marketing their produce when long distances from centres of population; showed the proper methods of collecting, grading, and marketing; and emphasized the benefits of these to both producer and consumer.

The manufacture of Vegetable Margarine was dealt with by a film entitled 'From Tropics to Tea Table'. This described the various processes from the growth of the coco-nut to the packing and boxing of the finished article. This film called attention to the growth in the consumption of this substitute for butter and emphasized the nutritious materials, clean handling, and efficient organization used in its manufacture.

'The Rat Menace', a film prepared for the Ministry of Agriculture, was shown during the tour and was also loaned for display at public cinemas. This film cannot fail to convince an audience of the heavy loss occasioned by the rat and the most effective methods to use in its destruction.

The film '*The Life of a Plant*' which was of the 'slow motion' type, portrayed the complete life history of the plant. The plant described was the common Nasturtium, the lecturer being able to demonstrate its similarity to the life cycle of agricultural and horticultural plants with greater accuracy than by verbal description alone. The germination and growth was shown at a speed of 20,000 times greater than the actual rate of development.

A film which caused marked interest was that which described the manufacture of Beet Sugar. The cultural operations in the growth of the beet were on a large scale, the whole film having been prepared in Canada. It was none the less interesting and instructive, especially to farmers who have grown this crop in recent years.

The film 'Soil Physics' is an Ontario Government Film. It describes a laboratory experiment in which the permeation of water through clay is contrasted with its permeation through sand. It explains why the addition of humus improves the water-carrying powers of both the clay and the sand, and it shows how, through surface cultivation, the supply of moisture is assured where it is required, that is, at the roots of the plants.

*General*—The experience gained from the experiment tends to show that there is a promising future for the cinematograph in the illustration of lectures on technical subjects. Other nations, and our own colonies, long ago realized the importance of this form of education, and it is, therefore, not surprising that the majority of the films available are made abroad.

The films of colonial agricultural life were excellent in quality, but were not in all cases suitable for comparison with the operations carried out with similar crops or stock on our own farms. There is a shortage of suitable home-produced films relating to agriculture, horticulture and poultry-keeping, for use on a projector of standard size, i.e., similar to the ordinary picture-house apparatus. There are, of course, projectors which use a smaller film, and these may be found more convenient for display to small audiences. The range of British films for these smaller projectors is probably more extensive, as they can be produced at less expense than the more ambitious foreign film prepared for use in public cinemas.

A most satisfactory feature of the tour was the appreciation shown by the people in the villages in purely agricultural districts. The attendance at the lectures given in villages of this character was always excellent. This is possibly to be explained by the villagers having few opportunities to see cinematograph films and that they were, therefore, attracted by the novelty of the occasion. The type of audience to which the films were shown was composed, at many centres, of persons who were not used to book-learning, and it was pleasing to note their keen attention to, and interest in, this new educational method. The tour extended from October, 1928 to February, 1929. The number of villages visited was eighteen, and films were shown on 58 nights. The time taken up each evening by the lecture and films was about 2½ hours. There was an aggregate attendance for the full period of the tour of 4,629 persons, or an average of nearly 80 at each lecture.

Many letters of appreciation were received, amongst them being a letter from the Leicestershire and Rutland Federation of Women's Institutes. The possibility of arranging similar tours each winter is being considered. If the work is again carried on, it is probable that a smaller type of projector will be adopted, permitting the use of smaller accumulators which may be charged up more conveniently and at less expense. The picture shown by the smaller type of apparatus is quite large enough for a school-room or village hall of normal size. The experiment was considered to be successful, and to have provided reliable evidence that the moving picture can supply a healthy mental imagery, which cannot fail to make a lasting impression. Further, the effect seems likely to be more permanent than that obtained by the ordinary methods, by which lectures are delivered without visual aid.

*Similar work in the U.S.A. and France*—It may not be out of place here to note that the United States Department of Agriculture support an Office of Motion Pictures. This office has produced over 200 films and distributed them widely throughout America. It favours distribution through

'circuits,' each having an agent who deals direct with the central office. In such circuits county agents, Department of Agriculture—field men, home demonstration agents, club leaders, and other extension workers are organized and films are sent from one to the other. The Department co-operates with State or—Federal Institutions in arranging these circuits, and in preparing the programmes of films which are to be sent through each area. Arrangements have also been made whereby individuals or organizations may buy prints of the Department's films at manufacturing cost. State Agricultural Colleges, extension organizations, public school systems, farmers' organizations, and boards of trade have in many cases formed their own libraries.

In France a large sum was set aside in 1923 for the use of the Ministry of Agriculture for the creation of a permanent Agricultural Cinema Commission to investigate new ways of using the cinema for the guidance of farmers. A central bureau was formed, under the direction of this Commission, for the production and distribution of agricultural films. This bureau has, since its foundation, formed a library of 237 different films illustrating modern practices in all branches of French farm work. The films are designed for practical instruction and, unlike many of the American films, are not popular descriptions of farming for lay audiences. The library of the central bureau contains several copies of the more useful films, and, altogether, some 2,500 reels. Thirty to forty of these are sent out daily to various parts of France, and as many as 15,000 loans have been arranged in the year. This represents 60,000 presentations of instructive agricultural films before farmers in a single year. The development of the use of the cinema in agricultural France is further evidenced by the fact that 60 of the agricultural schools and colleges and 500 local centres have been fitted with cinema projectors at the expense of the bureau.—*The Journal of the Ministry of Agriculture.*

## PRACTICAL HINTS ON GRAPE CULTURE

BY

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The cultivation of grapes in South India is not as extensive as it deserves to be, largely because it involves a little technique in pruning which, though simple, is beyond the comprehension of the ordinary *mali*, unless he is specially instructed in the art.

The varieties which are well-known for their quality in the northern latitudes are naturally unsuited for cultivation on the plains in this part of the country, but there are sufficiently hardy kinds which, if properly grown, give fairly good results under sub-tropical conditions at medium elevations, and to a lesser extent, are also successful at low elevations.

The varieties known as 'Aurangabad' and 'Krishnagiri' are the best suited for the low elevations including the plains down to sea level, but it is mainly at elevations above 1,000 feet and at stations a few miles away from the coast that they are the least exacting in their cultural requirements. With