

### THE FUMIGATION OF FRUIT TREES.

THE systematic way in which fruit crops are protected from insect pests and other natural dangers in California has often been mentioned in these columns. Among the enemies of citrus plants are scale insects, or bark lice, and mites, to the consideration of which an article, by Mr. C. L. Marlatt, is given in the U.S. Year Book of Agriculture for 1900. The natural predaceous enemies of scale insects are various species of ladybirds, such as the Australian ladybird, which was introduced into California to control the fluted and black scales. The black

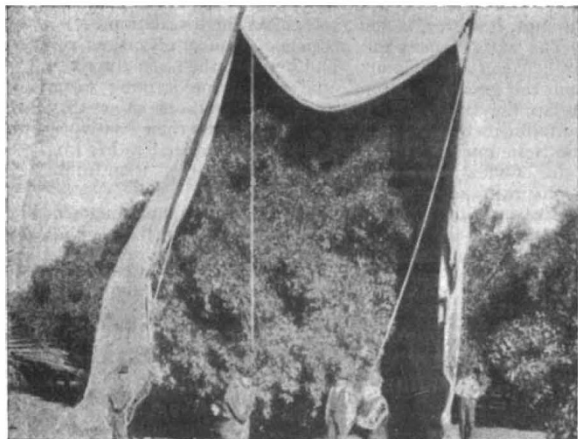


FIG. 1.—Tent carried over tree by the falling of pulleys.

scale has been completely controlled on certain ranches in the United States by its ladybird enemy, and this control has been brought about by the entire cessation of all insecticide operations. But until this condition of things exists on all the ranches, or at least until the natural enemies of scale insects have been fully studied, it is necessary to depend upon spraying and fumigation to keep down the insect pests. The most effective means of doing this is by subjecting infected plants to the fumes of hydrocyanic acid gas. The treatment consists in enclosing a tree at night with a tent as shown in the accompanying illustrations, and filling the tent with the poisonous fumes generated by treating refined potassium cyanide (98 per cent. strength) with commercial sulphuric acid (66 per cent.) and water. The treatment is particularly successful in getting rid

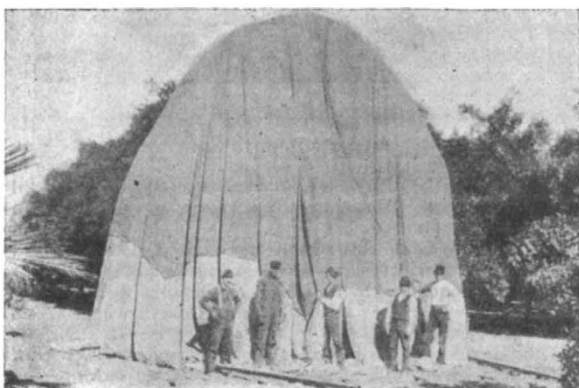


FIG. 2.—Tent in position for fumigation.

of the black scale (*Lecanum oleae*, Bernard) and California red scale (*Aspidiotus aurantii*, Maskell). The tents under which the trees are fumigated are drawn over the trees by means of pulleys, and some of them have diameters of more than seventy feet. To the fruit-grower who leaves things to chance, the work involved in the manipulation of such a protective process may appear excessive, but the cost must be regarded as insurance against loss due to defective crops, and the results obtained in California show that the expenditure of money and energy is fully justified.

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### UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

MRS. ANNA HOUGH has offered 40,000 dollars to the University of Southern California at Los Angeles on condition that the balance of 100,000 dollars be raised. The University recently obtained from Mrs. Hough the sum of 25,000 dollars on like conditions.

DR. JAMES MUSGROVE, formerly lecturer in anatomy, was on Wednesday, the 16th inst., installed in the chair of anatomy endowed by the late Marquis of Bute, and instituted under the recent new ordinances in connection with the University of St. Andrews.

UNIVERSITY fellowships, each of the value of 100*l.*, have been awarded at the Victoria University, Manchester, to Drs. E. N. Cunliffe (Owens College) and G. W. Gelderd (University College), both of whom are undertaking research work during the coming year.

IN the expectation of further considerable grants by the local counties authorities, the council of the Birmingham University has, it is understood, authorised the Buildings Committee to prepare plans and specifications for necessary buildings, estimated to cost, without equipment and furniture, the sum of 200,000*l.*

THE following appointments are noted in *Science*:—Dr. J. B. Overton to be professor of biology, Dr. J. H. Hall, assistant professor of physics, each at Illinois College, Jacksonville, Ill., U.S.A., and Mr. F. B. Littell, of the U.S. Naval observatory, has been appointed to a professorship of mathematics in the U.S. Navy.

DR. J. BISHOP TINGLE, instructor of chemistry at the Lewis Institute, Chicago, formerly lecturer in chemistry at Gordon's College, Aberdeen, and at the Merchant Venturers' Technical College, Bristol, has been appointed professor and head of the newly organised department of chemistry at the Illinois College, Jacksonville, Ill., U.S.A.

THE new Municipal Technical College at Sunderland has started with the enrolment of 600 students. This number so largely exceeds the reckoning of the Technical Education Committee that the Borough Council, in order to provide for the necessary increase of the staff, will, it is expected, be compelled to have recourse to its rating powers.

THE dedication of the Severance Chemical Laboratory of Oberlin College took place on September 26, when an address was given by President Ira Remsen, of the Johns Hopkins University. In the course of the proceedings it was stated that Mr. Lewis Severance, the donor of the laboratory, had given the sum of 40,000 dollars as an endowment for the chair of chemistry.

AT a recent meeting of the governors of the Durham University College of Science, Newcastle, the principal of the College submitted his report, in which he stated that the fund for the completion of the College buildings amounted to 31,000*l.* The suggestion of their treasurer, Dr. Hodgkin, that a suitable memorial to Lord Armstrong would be to erect a statue upon some prominent site, and to dedicate the College to his memory, had received the hearty support of Mr. Watson-Armstrong, and was cordially adopted by the council. They resolved to ask the University to consent to a change of name, and to invite subscriptions to an Armstrong memorial fund. A public meeting was held, resolutions were adopted approving of the scheme, and upwards of 20,000*l.* was promised towards it.

SPEAKING at a meeting held on Wednesday, the 16th inst., to inaugurate the third winter session of the London School of Tropical Medicine, Dr. Manson said that the school wished to fulfil two functions, viz., the education of the practitioner who proposed to devote his life to practice in the tropics, and the attempt to advance medical science as regarded tropical disease. How far they had been able to fulfil those undertakings it was for those present to say. As regarded the educational part of their work he could claim that they had had a distinct success although they began with a certain amount of trepidation and anxiety. They had succeeded in overcoming financial difficulties