U. S. DEPARTMENT OF AGRICULTURE.

PROCEEDINGS OF THE NATIONAL CONVENTION

FOR THE

SUPPRESSION OF INSECT PESTS AND PLANT DISEASES BY LEGISLATION,

HELD AT WASHINGTON, D. C., MARCH 5 AND 6, 1897.

EDITED BY B. T. GALLOWAY.

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LETTER OF SUBMITTAL.

DOVER, DEL., *July 1, 1897.*

SIR: I have the honor to submit herewith the report of the proceedings of the National Convention for the Suppression of Insect Pests and Plant Diseases by Legislation, held in the city of Washington, March 5 and 6, 1897. In accordance with a request made by the convention, it was agreed that your Department would publish the proceedings, providing one of its officers edit them. This work was duly performed, under the direction of the special agent in charge of scientific investigations, by Mr. B. T. Galloway, Chief of the Division of Vegetable Physiology and Pathology, and with the assistance of the divisions of the Department having charge of the lines of work touched upon. The conditions of its publication by the Department having thus, I believe, been fully and satisfactorily complied with, I have the honor to invite the publication of the report as agreed, and at the same time on behalf of the convention to tender to you its thanks for this courtesy.

Respectfully,

WESLEY WEBB,
Secretary of the Convention.

Hon. JAMES WILSON,
Secretary of Agriculture.

In accordance with the agreement as stated above, the publication of these proceedings by the Department of Agriculture is hereby authorized.

JAMES WILSON,
Secretary.

CONTENTS.

PROCEEDINGS OF THE NATIONAL CONVENTION FOR THE SUPPRESSION OF INSECT PESTS AND PLANT DISEASES BY LEGISLATION.

MORNING SESSION, FRIDAY, MARCH 5, 1897.

The delegates present met in the parlors of the Ebbitt House at 10 a. m. March 5. Mr. E. H. Cushman, president of the Ohio State Horticultural Society, called the convention to order and then read the following printed notice, addressed to horticultural and agricultural societies, State experiment stations, and kindred institutions and organizations:

CALL FOR THE CONVENTION.

A call for a national convention to consider and recommend the most appropriate Federal and State legislation for preventing the introduction or diffusion of noxious insects and fungi in the United States.

At a regular meeting of the Ohio State Horticultural Society in February, 1896, the following resolution was adopted by a unanimous vote:

Resolved, That the secretary be requested to correspond with the secretaries of all the other State horticultural societies and request them to bring before their societies the question as to the propriety of the appointment of delegates to a national convention for the purpose of considering means of preventing the spread of noxious insects and fungous diseases by appropriate State and Federal legislation.

Several efforts have been made and are being put forth in various parts of the United States indicating the desirability of some united effort being made in this direction, and the rapidity with which these pests of our orchards and fields are increasing renders prompt and efficient legislation looking toward their suppression or control most imperative and absolutely essential to success in horticultural and agricultural pursuits. The number of favorable replies received to the circulars sent out by the secretary justifies the society in calling a national convention.

In view of the foregoing facts the Ohio State Horticultural Society invites all horticultural and agricultural societies, experiment stations, and kindred organizations to send delegates to meet in convention at the Ebbitt House, in Washington, D. C., at 10 a. m. March 5, 1897, to consider the best measures to be taken in securing such national legislation and supplementary uniform State legislation as may be necessary to prevent the dissemination of noxious insects and fungi and prevent their introduction into the United States from other countries.

All persons interested are invited to attend.

E. H. CUSHMAN, *President.*
W. W. FARNSWORTH, *Secretary.*

After the reading of the notice the chair appointed the following committees:

COMMITTEE ON CREDENTIALS.

E. S. Goff, Wisconsin.
F. M. Webster, Ohio.
M. J. Daniels, California.

COMMITTEE ON PERMANENT ORGANIZATION.

W. B. Alwood, Virginia.
R. S. Emory, Maryland.
E. M. Wardell, California.

REPORT OF COMMITTEE ON CREDENTIALS.

The committee on credentials reported the following delegates present and entitled to seats in the convention:

List of delegates.

Alwood, W. B., Va. Exp. Sta. and State Hort. Soc., Blacksburg, Va.
Bachelder, N. J., Secretary State Board of Agr., Concord, N. H.
Baker, J. W., Tenn. Dept. of Agr., Nashville, Tenn.
Barry, W. C., Pres. Western N. Y. Hort. Soc. and Pres. Eastern Nurserymen's Association, Rochester, N. Y.
Beach, S. A., N. Y. State Exp. Sta., Geneva, N. Y.
Bissell, E. H., Richmond, Va.
Brigham, J. H., Master National Grange, Delta, Ohio.
Brown, J. F., Vice Pres. State Board of Agr., North Stonington, Conn.
Chamberlain, S. E., Pres. Catoctin Farmers' Club, Loudon Co., Va.
Cushman, E. H., Pres. Ohio Hort. Soc., Euclid, Ohio.
Daniels, M. J., State Board of Hort., Riverside, Cal.
Denise, D. Demarest, Pres. State Board of Agr., Freehold, N. J.
Derby, Samuel H., Peninsula Hort. Soc., Woodside, Del.
Emory, R. S., Peninsula Hort. Soc., Chestertown, Md.
Evans, Walter H., Office of Experiment Stations, U. S. Dept. of Agr., Washington, D. C.
Farnsworth, W. W., Secretary State Hort. Soc., Waterville, Ohio.
Galloway, B. T., Pathologist U. S. Dept. of Agr., Washington, D. C.
Garman, H., Ky. Agr. Exp. Sta. and State Hort. Soc., Lexington, Ky.
Goff, E. S., Wis. Exp. Sta. and State Hort. Soc., Madison, Wis.
Gulick, Robt., Farmers' Alliance, Linkwood, Md.
Hale, J. H., Pres. Conn. Pomological Soc., South Glastonbury, Conn.
Heiges, S. B., Pomologist U. S. Dept. of Agr. and Pres. Pa. Hort. Soc., Washington, D. C.
Henry, E. S., Board of Agr., Conn.
Hobbs, C. M., Ind. Hort. Soc., Bridgeport, Ind.
Hooker, C. M., Western N. Y. Hort. Soc., Rochester, N. Y.
Howard, L. O., Entomologist U. S. Dept. of Agr., Washington, D. C.
Johnson, W. G., State Entomologist of Maryland, College Park, Md.
King, W. M., Va. State Grange, Glencarlyn, Va.
Lowe, V. H., Entomologist State Exp. Sta., Geneva, N. Y.
Lugger, Otto, Minn. Agr. Exp. Sta. and State Hort. Soc., St. Anthony Park, Minn.
Lupton, S. L., Fruit Growers' Association, Winchester, Va.
McCarthy, Gerald, Secretary N. C. Hort. Soc., Raleigh, N. C.

McLachlan, James, Board of Hort. Com., Los Angeles, Cal.
Miller, W. W., Secretary State Board of Agr., Columbus, Ohio.
Powell, G. Harold, Del. Exp. Sta., Newark, Del.
Sessions, Wm. R., Secretary State Board of Agr., Boston, Mass.
Slingerland, M. V., Cornell University Agr. Exp. Sta., Ithaca, N. Y.
Snow, H. K., Tustin Fruit Growers' Association, Tustin, Cal.
Taylor, Wm. A., Mich. Hort. Soc., Washington, D. C.
Van Deman, H. E., Pres. Peninsula Hort. Soc., Parksley, Va.
Van Lindley, J., Pres. N. C. Hort. Soc., Pomona, N. C.
Waite, M. B., Div. Veg. Phys. and Path., U. S. Dept. of Agr., Washington, D. C.
Wardell, E. M., State Board of Hort., Los Angeles, Cal.
Webb, Wesley, Del. Farmers' Institute and Secretary Peninsula Hort. Soc., Dover, Del.
Webber, H. J., Div. Veg. Phys. and Path., U. S. Dept. of Agr., Subtropical Laboratory, Eustis, Fla.
Webster, F. M., Entomologist Ohio Exp. Sta., Wooster, Ohio.

The report of the committee on credentials was adopted

REPORT OF COMMITTEE ON PERMANENT ORGANIZATION.

The report of the committee on permanent organization was then made and adopted, as follows:

Officers.

Chairman, E. H. Cushman, Ohio.
Vice chairman, J. H. Hale, Connecticut.
Secretaries, { Wesley Webb, Delaware. / M. J. Daniels, California.
Sergeant-at-arms, Robert Gulick, Maryland.

Order of business.

(1) Appointment of committees.
(2) Reading of papers.
(3) Discussion of papers.
(4) Reports of committees.

Rules.

(1) That all resolutions or proposed laws be referred to the appropriate committee without debate.

(2) That there be a committee of five on resolutions and a committee of ten on legislation.

The committees were then named, as follows:

COMMITTEE ON RESOLUTIONS.

W. C. Barry, New York.
N. J. Bachelder, New Hampshire.
C. M. Hobbs, Indiana.
E. M. Wardell, California.
J. H. Hale, Connecticut.

COMMITTEE ON LEGISLATION.

W. B. Alwood, Virginia.
C. M. Hooker, New York.
J. Van Lindley, North Carolina.
E. M. Wardell, California.
N. J. Bachelder, New Hampshire.
D. Demarest Denise, New Jersey.
E. S. Henry, Connecticut.
C. M. Hobbs, Indiana.
E. S. Goff, Wisconsin.
F. M. Webster, Ohio.

The presiding officer next called for the reading of papers. The first, by Mr. B. T. Galloway, Chief of the Division of Vegetable Physiology and Pathology, United States Department of Agriculture, was as follows:

PLANT DISEASES AND THE POSSIBILITY OF LESSENING THEIR SPREAD BY LEGISLATION.

It needs little argument to prove that the enemies of cultivated plants are steadily increasing, and I think it can be easily shown that they will continue to increase so long as the conditions, for which we are in large part responsible, remain as they are at present. I do not by any means regard this as a calamity. On the contrary, I look upon the fact that our insect and fungous foes are increasing as direct proof that we are progressing, for, as Professor Bailey has said, "Our enemies increase because cultivation induces change of habits in wild organisms; because it presents an ever-increasing variety of food, or host plants; because the food supply is large and in more or less continuous areas; and finally, because the natural equilibrium, or tension, is destroyed." It follows, therefore, that the more we put forth our energies to improve our native plants or to change their habits; the more we endeavor to increase the variety and number of our cultivated vines, trees, and shrubs; the more we extend our orchards, our vineyards, and our fields, just so much more do we disturb the equilibrium in nature, and just so much more must we expect to burden ourselves with the work of maintaining this unstable condition by more or less artificial means. Where an insect or fungus had one chance a hundred years ago to wax strong and spread, it has now a thousand chances, for unbroken orchards and vineyards and millions of nursery trees cover the country where then only wild plants grew.

It is but natural, then, that man, seeing the onward march of his enemies, should look about him and wonder how it will all end, and how he, as an individual, is to obtain relief. In many cases he has found a way of doing this by adopting certain more or less empirical methods. Again, with a fuller appreciation of the fundamental principles underlying plant growth, he has learned, partly by intuition, to keep his plants in health, and when he has reached this stage he stands far in advance of his neighbor who waits until his plants are diseased and then begins to look about for a spraying apparatus. It frequently follows, however, that with all his efforts he is not able to help himself, and then, in accordance with what he considers his privilege, he appeals to the State, believing, or at least hoping, that by legislation he can even up matters to the advantage of himself and the detriment of his foes.

In answer to such appeals a number of State laws have been enacted. Some of these have been partly satisfactory, but none have served fully the object for which they were intended. This is nothing more than might have been expected, seeing

the widely divergent interests of the different States, the lack of anything like cooperation, and the fact that public sentiment in many cases is indifferent or unfavorable toward such laws, thus making proper enforcement impracticable.

I take it that one of the principal objects of this convention is to consider these matters, and, after hearing as many sides to the question as possible, to take some action which will at least lead to a better understanding of what can or can not be done. Let us, then, consider for a moment the nature of some of the more common and destructive plant diseases, for it is only in the possession of such knowledge that we can intelligently discuss the problems relating to legislation.

So far as we are at present concerned, the diseases of plants may be divided into two principal groups, namely, those due to organized beings, such as insects and fungi, and those in which organisms take no direct part, as, for example, improper conditions of the soil, such as too much or too little water; unfavorable atmospheric influences; and the presence of poisonous substances in the soil, air, etc. In this paper we are not particularly concerned with the insect pests, as they will doubtless receive full consideration from others present.

No hard and fast lines can be drawn between the diseases due to fungi and those brought on by unfavorable environment. Many, if not all, fungous diseases are greatly influenced by environment—just as much so as the hosts themselves. In many cases we find that a plant grown with success in a certain region succumbs to disease when transferred to another where the conditions are such as to make it necessary for the plant to adapt itself to the new requirements. During the process of adaptation fungi may find opportunity, and the host once infected it may be only a question of time when it is forced to succumb. In such cases it would be obviously unjust to hold the man who grew the trees responsible. It was not his fault that the conditions under which the purchaser planted the trees were different from those nature furnished him to grow them.

A case in point will more clearly illustrate this matter. Suppose I purchase a thousand apple trees from a nurseryman and plant them in what to all intents and purposes is a suitable piece of ground. This ground may have recently been cleared, and in addition to the remains of roots of certain forest trees, the soil may be slightly wetter than that of the nursery. The decaying roots of the forest trees in the soil may contain the mycelium of a fungus, which under ordinary conditions would not attack a healthy apple root. Owing to the slight additional wetness, however, and the consequent lack of aeration, some of the apple roots in time will be asphyxiated, or will be injured in other ways, the details of which need not be given here. While the roots may be only slightly injured, they nevertheless in this condition become readily susceptible to the attacks of the fungus already in the soil, and the disease once started all the roots may eventually be killed, and the tree will die. Hundreds of trees may be killed in this or some similar way, and yet from the very nature of the trouble, the delicate questions involved, and the complications that may arise, no man could positively assert where the blame rests.

We are by no means holding the nurseryman up as a paragon of honesty, but we do wish to give him fair play, for he is unquestionably often blamed for things for which he is not in the least responsible.

Again, there is a vast number of fungous diseases which are almost as universally distributed as the host plants themselves. They occur not only on the cultivated forms, but in the woods and wild places, whence they doubtless originally came. Such is black rot, downy mildew, and powdery mildew of the grape; apple scab and rust; and a host of other maladies. It would be manifestly as impossible to control such enemies by legislation as it would be to control the dust of the air or the wind that wafts it from place to place. Furthermore, it must be remembered that a great many—in fact the majority—of the most destructive diseases which affect nursery stock are of such a nature that no reliable system of inspection can be carried out. Such being the case, we are free to say that in most cases the certificates that are given declaring trees to be free from disease are little better than worthless.

Ten thousand peach trees may be shipped into a State, and so far as any one can determine they may be perfectly healthy. Notwithstanding this, 50 per cent or more of the trees may be infected with yellows, and what is more, the malady may not develop for a year after the trees have been planted. What is true of peach yellows is true of many other diseases, particularly those where the leaves alone are the parts attacked.

Without further argument, therefore, it may be said that any general laws looking toward the control of nursery stock are likely to prove impracticable, first, because the nature of the diseases is such as to render proper inspection exceedingly difficult, if not impossible, and second, no one with any regard for scientific truth or accuracy would care to risk his reputation in giving an opinion where so many complications are involved.

Of course there may be special cases where laws would be an advantage. Take, for example, pear blight in the nursery. Young trees may become infected and the disease remain dormant in them until they are set in the orchard. Inspection here might be of benefit, but it is questionable whether legislation would facilitate matters in the least. Probably not one nurseryman in a thousand would refuse to take the proper precautions for eradicating blight if the way were pointed out to him. It would be a matter of business for him to do so; and this introduces the question as to how far many of the problems involved in the matter under discussion could be controlled by proper organization among the experiment station workers and others who might be easily induced to cooperate with them. I can see no reason why a properly organized force of this kind, acting throughout in a uniform manner, would not accomplish much good, not only in educating nurserymen and others in the lines of work that should be followed where emergencies may arise, but also by taking such legitimate and proper action, where the exigencies demand, as to make it to the interest of all owners of nursery stock to be able to truthfully say that they have put forth every effort to have every tree sent out absolutely free from dangerous insect, fungous, or other pests.

So far our discussion has dealt mainly with the nurseryman. It must be remembered, however, that there are other phases of the problem. The fruit grower himself is to be considered and may often prove an important factor to deal with. The energetic, successful man, who puts forth every effort to keep his trees free from the various foes which beset them, may often have his best efforts rendered more or less futile by the fact that his neighbor's trees harbor all sorts of insects and fungi. It is a delicate matter to say what shall be done in such a case. The man whose trees are infested may not be shiftless. He may be the victim of natural laws, for which he is in no way responsible, or he may, for personal or other reasons, not be able to care for his trees as should be done. To hold the law over this man and say that he should spray his trees or destroy them, or else pay a fine or go to jail, would be manifestly unjust. Public sentiment would support him, and therefore the law, should it exist, could not be enforced.

Finally, there is a question of imported pests to consider. What has been said of the impracticability of inspection laws will also apply here. It may sometimes happen, however, that a dangerous pest is imported, and although established in one or more places, might be quickly and easily eradicated by prompt and intelligent action supported by proper legislation. Even here, however, the futility of State laws can be seen, for the pest may be established at isolated spots in three or more States, and while the laws of one State may make it impossible to exterminate the enemy, those of the next may be wholly powerless to cope with it. In such cases, and also where any pest hitherto confined to comparatively limited areas shows an alarming tendency to spread, proper Federal legislation might serve a useful purpose. What would constitute proper Federal legislation is not within our province to say, as the complications involved are far too numerous to be considered here. Suffice it to say, however, that the precedent for such legislation seems to have been established in creating the Bureau of Animal Industry of the United

States Department of Agriculture. By this act the head of the Department is given the power to prepare such rules and regulations as might be deemed necessary for the speedy and effectual suppression of the diseases of domestic animals. Necessary rules and regulations are to be certified to the executive authority of each State and Territory, and said authorities are to be asked to cooperate in the enforcement and execution of the act. This removes all difficulties that may arise between Federal and State authorities, and gives the head of the Department power to act whenever an emergency arises. The rules provide for the necessary means of bringing to the attention of the Department any contagious or communicable disease, the appointment of inspectors, the quarantining of infected localities, destruction of the diseased animals, and compensation therefor whenever the latter is recommended by a board of appraisers appointed by virtue of the act in question. Whether such a general law or a similar one could be made operative in the case of insects and fungi is a question. Public sentiment is not as yet very far advanced in such matters, and public sentiment is what makes a law operative. In any event, it seems to me that a law, no matter how drawn, would prove useful only in certain special emergencies. The greater portion of our plant diseases and insect pests can not be reached by legislation. They are governed by natural laws, and it is to these that we should turn our attention. Let us strive, therefore, to obtain more light on nature's fundamental truths, for one such truth well understood may prove of more lasting benefit than legislation without end.

The next paper called for was by Mr. L. O. Howard, Entomologist of the United States Department of Agriculture. The following is an abstract of the paper made by the author, who has reserved the complete article for publication elsewhere:

THE DESIRABILITY OF AN INSPECTION SYSTEM AGAINST FOREIGN INSECTS.

The speaker called attention to the fact that fully one-half the principal injurious insects of the United States are of foreign origin, and have at one time or another been accidentally imported into this country, where, in the majority of cases, they have flourished to a degree unknown in their original home. This statement was supported by instancing many important injurious species. It was shown that aside from a large number of insect enemies of field crops, most of the granary pests, most of the household pests, and most of the greenhouse pests belong to the class of imported species. The countries of origin were briefly discussed, and it was shown that while Europe is the home of the majority of the imported species, the recent development of commercial intercourse with eastern Asiatic countries, especially China and Japan, in connection with the enormous development of agriculture and horticulture on the Pacific Coast, is now resulting in the arrival at the port of San Francisco of many new insect enemies of vegetation. It was further shown that there is much less danger of importations of this character from the Southern Hemisphere, since such an importation would involve a change of climate. An insect shipped from Chile in midsummer, for example, would arrive in this country in midwinter, and such a radical change, involving the complete reversal of the life cycle of the insect, is a practical barrier against the establishment of species imported from such localities.

Widely differing ways in which insects may be introduced were briefly discussed and the known facts regarding the number of our principal imported crop pests were given. It was shown that the present method of packing the cargo of a steamer is admirably adapted to the successful transportation of insects, and of course the faster the steamer makes its way across the sea the greater the danger of importation of injurious forms.

The great difficulties of competent inspection were dwelt upon, but it was shown that a rigid inspection of nursery stock would be possible. The resultant value of

such an inspection to the country was illustrated by examples of insects which such inspection in the past would have debarred from entrance. As further illustrating the possibility of this kind of inspection, the work of the State Board of Horticulture of California at the port of San Francisco was described at some length. The possibility of competent inspection of nursery stock in foreign countries before shipment to this country was also mentioned. The speaker followed with a partial list of insects of economic importance not yet introduced into this country, but which are still liable to be imported from abroad. It was shown, by referring to several familiar instances, that one great difficulty in the preparation of such a list arises from the fact that we have not only to guard against insects of known economic importance, but against many other species which in their native home have little economic consequence, but which in the more congenial climate of the United States may multiply to excess.

Tables were given showing the importations of nursery stock and plants, as well as fruit, at the different ports in the United States, and it was shown that the principal ports of entry to be guarded are those of Boston, Charlestown (Mass.), New York, Cincinnati, St. Augustine, Key West, Tampa, New Orleans, and Baltimore. This comparatively limited list would seem to indicate that with the aid of State officials, and particularly with the possible cooperation of foreign countries, an inspection and quarantine service need not be excessively expensive to the General Government.

As giving an idea of what such an inspection would mean, the speaker presented a table representing the inspection of steamers entering the port of San Francisco from July 2, 1894, to August 29, 1896. From this table it appeared that at San Francisco two hundred and thirty vessels carrying plants were boarded in the twenty-six months mentioned and all plants and trees found on them were carefully inspected. About one-half the plants and trees were found to be infested with scales or other injurious insects, and were disinfected or destroyed. It was shown that this inspection system, conducted under State laws, has been thorough and has undoubtedly saved the State of California many times the cost of the inspection. It was further stated, however, that inspection at San Francisco is but child's play compared with the amount of inspection which will be necessary at the port of New York.

In conclusion, the writer expressed his firm conviction that the establishment of such a service at the Eastern ports, while it might not be commensurate in the value of its results with that of San Francisco, would many times repay the horticultural interests of the country.

Mr. Howard's paper was followed by one prepared by Mr. B. F. Lelong, secretary of the California State Board of Horticulture. In the absence of Mr. Lelong the paper was read by the secretary, and was as follows:

The Inspection of Trees, Plants, Fruit, etc., as Conducted under the Laws in California.

In compliance with a request from your president, Mr. E. H. Cushman, I submit herewith this paper, giving the methods of inspection and operation of the laws relative to the protection and promotion of the horticultural interests in California. In order that the subject may be fully understood, a short synopsis of the history of the State Board of Horticulture and its creation becomes necessary.

Prior to 1880 there were no laws to prevent the introduction of pests on trees, plants, fruit, etc., from foreign countries or the Eastern States, and very little was known by the fruit growers of the injury done by these enemies to fruit culture until those that were so introduced began to play havoc with the orchards and their

crops. Among the insects first introduced were the San Jose scale (*Aspidiotus perniciosus*), the cottony cushion scale (*Icerya purchasi*), the red scale (*A. aurantii*), the yellow scale (*A. citrinus*), the oyster shell scale (*Mytilaspis pomorum*), the woolly aphis (*Schizoneura lanigera*), and others.

The need of establishing a State board of horticulture and the enactment of protective quarantine became apparent through the damage and annual loss sustained from these pests, and in 1881 an advisory board was appointed to look after the horticultural interests and adopt the necessary protective measures. In 1883 the State Board of Horticulture was created and quarantine laws were enacted. The present status of the fruit industry in this State is largely due to the efforts of the board and the State appropriates $15,000 annually for the prosecution of its work.

At the beginning the enforcement of the quarantine laws met with great opposition, which continued until the laws became better understood. In the first case, before a justice of the peace, to enforce the disinfection of return packages, the court ruled that it was "a strange law and unconstitutional." After years of hard struggle with our legislatures we succeeded in having laws enacted that have stood the tests of our courts, and now it would be almost impossible under our present quarantine system for injurious insect pests to obtain a foothold and commit the devastation that many such pests did before we had the present laws.

In 1883 the general law creating the State Board of Horticulture provided that said board be constituted of nine commissioners, to be appointed by the governor, covering as many districts, they to determine by lot the length of their terms (short and long), four to serve a short term (two years), and five a long term (four years), and all appointments to be thereafter made for four years. The law empowered the board to appoint an inspector of fruit pests and a secretary. The board was also empowered to pass quarantine regulations, under the general law, to be binding on all persons. The law relative to the inspector of fruit pests was not satisfactory, as he had no discretionary powers, and in 1889 it was amended so as to provide for a secretary of said board, he to be ex-officio chief horticultural officer of the State and to have the management and direction of affairs while the board is not in session, and to him all officers must report.

The office of quarantine officer was also created. He has charge of the enforcement of the quarantine laws, and his duty is to inspect all steamers and sailing vessels arriving from foreign ports. He is provided with one or more deputies when needed. Special agents are employed for special work as required.

In 1881 an act was passed by this legislature which provides that "Whenever a petition is presented to the board of supervisors of any county and signed by twenty-five or more persons who are residents or possessors of an orchard or both, stating that certain or all orchards or nurseries or trees of any variety are infested with scale insects of any kind injurious to fruit, fruit trees, and vines, or codling moth, or other insects that are destructive to trees, and praying that a commission be appointed by them whose duty it shall be to supervise their destruction, the board of supervisors shall within twenty days thereafter select three commissioners for the county, to be known as a county board of horticultural commissioners."

The law further provides that—

"It shall be the duty of the county board of horticultural commissioners in any county, whenever it shall deem it necessary, to cause an inspection to be made of any orchard, or nursery, or trees, or any fruit-packing house, storeroom, salesroom, or any other place in their jurisdiction, and if found infested with scale bug, codling moth, or other insect pests injurious to fruit, trees, and vines, they shall notify the owner or owners or person or persons in charge or possession of said trees or place, as aforesaid, that the same are infested with said insects, or any of them, or their eggs or larvæ, and they shall require such person or persons to disinfect or destroy the same within a certain time to be specified. If within such specified time such disinfection or destruction has not been accomplished, the said person or

persons shall be required to make application of such treatment for the purpose of destroying them as said commissioners may prescribe. Said notices may be served upon the person or persons owning or having charge or possession of such infested trees, or places, or articles as aforesaid, by any commissioner, or by any person deputed by the said commissioners for that purpose, or they may be served in the same manner as a summons in a civil action. If the owner or owners or person or persons in charge or possession of any orchard, or nursery, or trees, or places, or articles infested with said insects or any of them, or their eggs or larvæ, after having been notified as above to destroy the same, or make application of treatment as directed, shall fail, neglect, or refuse to do so, he or they shall be deemed guilty of maintaining a public nuisance, and any such orchards, nurseries, trees, places, or articles thus infested shall be adjudged, and the same is hereby declared, a public nuisance, and may be proceeded against as such. If found guilty, the court shall direct the aforesaid county board of horticultural commissioners to abate the nuisance. The expense thus incurred may be a lien upon the real property of the defendant."

The quarantine regulations passed by the State Board of Horticulture are as follows:

"Rule 1. All consignees, agents, or other person or persons shall, within twenty-four hours, notify the quarantine officer of the State Board of Horticulture, or a duly commissioned quarantine guardian, of the arrival of any tree, plant, buds, or scions at any point of debarkation in the State of California.

"Rule 2. All trees, plants, cuttings, grafts, buds, or scions imported or brought into the State from any foreign country or from any of the United States or Territories, are hereby required to be disinfected, as hereinafter provided, upon arrival at any point where they are to be unloaded; and, furthermore, if any of said trees, plants, cuttings, grafts, buds, or scions are found infested with insects, or with any fungi, blight, or other disease injurious to fruit or to fruit trees, or to other trees or plants, they shall remain in quarantine fourteen days, or until the quarantine officer of the State Board of Horticulture, or a duly commissioned quarantine guardian, can determine whether the said trees, plants, cuttings, grafts, buds, or scions are free from live injurious insect pests, or their eggs, larvæ, or pupæ before they can be offered for sale, gift, distribution, or transportation.

"Rule 3. All trees, plants, cuttings, grafts, buds, or scions infested with any insect, fungi, blight, or other diseases known to be injurious to fruit or to fruit trees or to other trees or plants, and liable to spread contagion, are hereby required to be disinfected before being offered for sale, gift, removal, distribution, or transportation.

"Rule 4. All peach, nectarine, apricot, plum, or almond trees, and all other trees budded or grafted upon peach stock or roots, all peach or other pits, and all peach, nectarine, apricot, plum, or almond cuttings, buds, or scions raised or grown in a district where the peach yellows or the peach rosette are known to exist, are hereby prohibited from being planted or offered for sale, gift, or distribution within the State of California.

"Rule 5. All trees, plants, cuttings, grafts, buds, scions, seeds, or pits arriving from any foreign country, found infested with insect pests or their eggs, larvæ, or pupæ, or with fungi, or other disease or diseases hitherto unknown in this State, are hereby prohibited from landing.

"Rule 6. Fruit of any kind grown in any foreign country, or in any of the United States or Territories, found infested with any insect or insects, or with any fungi, blight, or other disease or diseases injurious to fruit or to fruit trees, or to other trees or plants, is hereby prohibited from being offered for sale, gift, or distribution within the State.

"Rule 7. Transportable material of any kind infested with any insect or insects, or their eggs, larvæ, or pupæ, or by any fungi, blight, or other disease or diseases known to be injurious to fruit or to fruit trees, or to other trees or plants, and liable to spread

contagion, is hereby prohibited from being offered for sale, gift, distribution, or transportation until said material has been disinfected by dipping it in boiling water and allowing it to remain in said boiling water not less than two minutes, such boiling water used as such disinfectant to contain in solution 1 pound of concentrated potash to each and every 10 gallons of water.

"Rule 8. All trees, plants, cuttings, grafts, buds, or scions may be disinfected by dipping in a solution of three-fourths of a pound of whale oil soap (8 per cent) to each and every gallon of water. Said whale oil soap solution shall be kept at a temperature of 100° to 115°. Said trees, plants, cuttings, grafts, buds, or scions shall remain in said solution not less than two minutes. After said trees, plants, cuttings, grafts, buds, or scions have been disinfected they shall remain in quarantine fourteen days for subsequent inspection, and if deemed necessary by the quarantine officer of the State Board of Horticulture, or a duly commissioned quarantine guardian, for further disinfection.

"Rule 9. All trees, plants, cuttings, grafts, buds, or scions may be disinfected by fumigation with hydrocyanic acid gas, as follows: Said trees, plants, cuttings, grafts, buds, or scions shall be covered with an air-tight tent or box, and for each and every 100 cubic feet of space therein two-thirds of an ounce of c. p. cyanide of potassium (98 per cent), 1 fluid ounce of sulphuric acid, and 2 fluid ounces of water shall be used. The cyanide of potassium shall be placed in an earthenware vessel, the water poured over the said cyanide of potassium, afterwards adding the sulphuric acid, and the tent or box to be immediately closed tight and allowed to remain closed for not less than forty minutes. After said trees, plants, cuttings, grafts, buds, or scions have been treated with hydrocyanic acid gas, as above directed, they shall remain in quarantine for fourteen days for subsequent inspection, and if deemed necessary by a member of the State Board of Horticulture, or the quarantine officer of said board, or a duly commissioned quarantine guardian, for subsequent disinfection.

"Rule 10. All trees, plants, cuttings, grafts, buds, or scions imported or brought into this State shall be inspected upon arrival at first point of debarkation, and if found infested with mining scales (*Chionaspis biclavis*) or other injurious insects which can not be destroyed by the remedies required in rules 8 and 9 of these regulations, are hereby prohibited from being planted or offered for sale, gift, or distribution, and shall be proceeded against as a nuisance.

"Rule 11. Any person or persons having in their possession trees, plants, cuttings, grafts, buds, scions, seeds, or pits infested with any insect or insects, or with any fungi, blight, or other disease or diseases injurious to fruit or fruit trees, or to other trees or plants, and who refuse or neglect to disinfect the said trees, plants, cuttings, grafts, buds, scions, seeds, or pits, as is required by rules 8 and 9 of these regulations, after having been notified to do so by a member of the State Board of Horticulture, the quarantine officer of said board, or a duly commissioned quarantine guardian, the said trees, plants, cuttings, grafts, buds, scions, seeds, or pits shall be declared a public nuisance, and shall be proceeded against as provided for by law.

"Rule 12. Animals known as flying fox, Australian or English wild rabbit or other animals or birds detrimental to fruit or fruit trees, plants, etc., are prohibited from being brought or landed in this State, and, if landed, they shall be destroyed."

The laws and regulations promulgated by the State Board of Horticulture have been enforced without fear or favor both by the State authorities and county commissioners. The validity of all the acts passed has been questioned, and in suits brought their constitutionality has been upheld by the courts.

In order to prevent the possible introduction of new pests into our State on plants and trees brought here by passengers and importers from foreign countries, great precaution has been exercised. The quarantine officer is stationed at the port of San Francisco, and under the regulations of the board no tree, plant, or fruit can be landed until passed upon by him or his deputy.

In 1892 the following steamships and shipments were inspected:

Steamers from Japan and China	23
Steamers from Australia and New Zealand	12
Steamers from Sandwich Islands	8
Steamers from Central America	4
Sailing vessels from South Sea Islands	7
By rail from Eastern States	14
By rail from Southern States	9
Total	77

The following is a list of the kind and number of plants and trees inspected in the above shipments:

Ornamental plants	74,445
Fruit trees	53,893
Citrus trees	372,700
Citrus trees disinfected	47,700
Citrus trees found infected beyond cure and destroyed	326,500
Fruit trees destroyed	36,225
Ornamental plants destroyed	525
Total	911,988

Besides these the following shipments were inspected in the various counties upon their arrival:

From France, fruit trees and plants	1,022,221
From England, plants	16,926
From Eastern States, fruit trees	453,234
Ornamental plants	3,003
Total	1,495,384

The following shipments from within the State were inspected:

Fruit trees	186,000
Ornamental plants	2,900
Citrus trees	122,700
Total	311,600

The number of vessels inspected from December 4, 1894, to August 29, 1896; the number of plants, trees, etc., found on board; and the disposition made thereof and whence they came were as follows:

From December 4, 1894, to August 29, 1896, steamers were inspected from various countries as follows:

China and Japan	72
Australia and New Zealand	29
Tahiti	5
British Columbia	27
Mexican ports	17
Hawaii	35
Central America	40
Miscellaneous	7
Total	232

The trees, plants, and fruit found on board, and action taken in regard to them are as follows:

Total number of packages of trees and plants inspected and passed	930
Total number of packages of trees and plants inspected and destroyed	506
Total number of packages of trees and plants inspected and disinfected	474
Total packages	1,910

Plants (loose) inspected and passed	1,345
Plants (loose) inspected and destroyed	45
Total	1,390
Boxes of fruit inspected and passed	1,739
Boxes of fruit inspected and destroyed	3
Boxes of fruit inspected and disinfected	837
Boxes of fruit inspected and returned	100
Total boxes	2,679

Among the insect pests not yet known in the State are plum curculio (*Conotrachelus nenuphar*), which would mean the end of our prune industry if introduced; the pear Psylla (*Psylla pyricola*), which has been so destructive to the pear crops of New York; the bud moth (*Tmetocera ocellana*), which has also played great havoc in the apple orchards in western New York; the gypsy moth (*Ocneria dispar*), which has cost Massachusetts nearly half a million dollars to combat; the cigar-case bearer (*Coleophora fletcherella*), which did such great damage in 1894 to the orchards of western New York; the apple maggot and apple midge; and the peach yellows and peach rosette, which, if introduced, would mean the end of successful peach culture in the State.

The flying fox (*Pteropus rubricollis*), a great pest in Australia, was also found on board of steamers. These alight in orchards in the night in great numbers. Upward of one hundred thousand in a flock have often been observed—enough to damage an entire crop in a single night. The mongoose (*Herpestes griseus*), which is so destructive to poultry, especially in the Sandwich Islands and Jamaica, imported there from India in the hope of destroying rodent pests, was also intercepted. We are especially guarding against the introduction of the English or Australian rabbit, which would cause great damage if brought to our shores.

Every State should have protective measures of its own. The State Board of Horticulture of this State was the first to be created in the country. Other Pacific States have followed the example, but the boards are not supported by their legislatures as they should be. The creation of any such board without moral support and financial aid is of no value, and can accomplish no good to the State. Unless amply provided with means and stringent laws, the undertaking of establishing such a board should not be attempted.

Much has been said and written of late in regard to the San Jose scale, which has been introduced into the East and some of the Southern States on infected fruit from California. The fault, if any there be, lies with the people of those States, because they had no State legislation or protective measures to prevent the introduction of such pests.

Prior to 1880 California occupied the same position. We had no State legislation for the protection of the horticultural interests, and the Eastern and Southern nurserymen found our State a convenient dumping ground for all their pest-ridden trees, until we became alive to the dangers before us through yearly loss, and secured the creation of the State Board of Horticulture and the enactment of protective horticultural legislation. When we established a quarantine against Eastern trees, especially from districts where the peach yellows and peach rosette exist, the nurserymen of the East in convention declared that we had done so in the interest of home-grown stock, and that it was a boycott against the Eastern dealer. When we established the same quarantine against the introduction of nursery stock from one county into another the nurserymen here then declared it was a boycott in favor of nurserymen of each county. But what was the result? Each nurseryman pays strict attention and sees that his stock is clean before shipment, else it will be quarantined at destination and a certificate of inspection before shipment must accompany each shipment. The railroad company will not deliver the trees until passed upon by the

local inspector. The Eastern nurseryman can ship his trees into the State, provided he complies with the existing laws and regulations, which insure to the grower clean and healthy trees, and to the nurseryman a better and larger trade. Or, in other words, nurserymen are compelled by law to provide clean and healthy trees to their customers and to be honest in their dealings. Each State should vie with the others to secure such legislation as shall benefit the entire nation. At present there is no law providing for the inspection of export shipments, or shipments going out of the State, and if all other States would have protective legislation it would compel the growers here to be more careful, and no infected fruit would ever leave the State. And while this would protect every State it would also help us in compelling shippers and growers to ship only clean and bright fruit.

In order to prevent the introduction of foreign pests into the United States, stringent laws should be enacted by Congress and a strict quarantine established at every port of entry. A law should also be passed providing for the inspection of all cuttings and plants sent by mail. At present what could prevent the introduction of the curculio or the gypsy moth into any State? There are many curious people who while traveling find curious things or things which they think curious and collect and send these curios to their friends through the mail, thus perhaps introducing pests into new localities. We have many instances where this has been done. The cottony cushion scale was carried from one locality to another on bouquets. The bouquets on wilting were thrown away and from these the pest spread. Flowers taken from one State to another should be carefully examined.

The flying fox before mentioned and the mongoose were also brought as curiosities. Only a few months ago a lady passenger on a steamer had a collection of chirping crickets from Mexico which are very injurious to vegetation and which she had raised as pets and would no doubt have liberated them had they not been killed by our officer on arrival.

Our quarantine officer has called the attention of the Department of Agriculture to the matter of there being no national law or regulation to prevent the introduction into the United States of even such a terrible pest as the Australian rabbit, and as there are other ports of entry outside of this State where they can be landed that it would be wise for Congress to enact a stringent law leaving no loophole for thoughtless or careless people to bring such pests, and when found to provide for their immediate destruction.

What I have said does not apply to the present existing condition of the fruit pests in the State. The cottony cushion scale, which caused so much damage, and through which the citrus industry had been about abandoned, has been practically exterminated through the agency of the ladybugs (*Vedalia cardinalis and Novius koebelei*) introduced from Australia. In many parts of the State the black scale (*Lecanium oleæ*) has been exterminated by the black ladybug (*Rhizobius ventralis*), also of Australian importation. This ladybug is becoming colonized in many portions of the State. The mealy bugs (*Dactylopius*) are being exterminated by a ladybug (*Cryptolæmus montrouzieri*). The San Jose scale in many sections has been exterminated by internal parasites, its natural enemies. Two internal parasites are at work on the yellow scale (*Aspidiotus citrinus*) infecting the orange, which keep it well in check. The *Rhizobius nanus* is doing good work in lessening the red spider, so destructive to our prune and almond orchards. So it will be seen that while we have suffered from the attacks of injurious pests our orchards now suffer but little in comparison with what they did, and by proper quarantine laws we hope to keep them and still improve their condition by preventing the introduction of new pests.

With the advent of the cottony cushion scale our citrus-fruit shipments decreased about one-half, while with the advent of the *Vedalia cardinalis* and *Novius koebelei* the output increased, and now we ship about ten thousand car loads annually. The codling moth is easily subdued, as are also all other pests of minor importance. The

most troublesome pest we have is the red scale (*Aspidiotus aurantii*), for which as yet no effective parasite has been found, and we have to apply the hydrocyanic acid gas treatment, which is somewhat expensive, but effective.

The introduction of parasites to combat injurious pests is of California origin, and the results attained have gone on record as the greatest of boons to California interests. With California, which nature has decreed to be "the orchard of America," if not of the globe, other States are equally interested in protective legislation. When we destroyed a cargo of 325,000 orange trees from Tahiti infested by the mining scale, an insect that no remedy can destroy, as it lives under the bark, thereby preventing the scale from obtaining a foothold, not only was California benefited, but all other States shared with her, for if the scale had spread among our orchards it would have been only a short time when it would have been carried to every citrus-growing State in the Union, either on trees, scions, or fruit. The many thousands of infected trees and plants destroyed on their arrival in this State from foreign countries was a bar to their introduction into the East, for many such plants and trees are reshipped after landing; and while we grow the fruits of every zone, the whole world has the same interest in our success, or at least should have the same, that it has in the success and prosperity of other specially favored regions of our marvelous country.

Mr. Lelong's paper was the last of those prepared by request. It was announced that Mr. Gerald McCarthy, entomologist of the North Carolina Experiment Station, had a paper to present. The convention voted that the paper be read. It was as follows:

Crop Pests and their Repression by Law.

It is a fact that no practical horticulturist will dispute that crop pests are more numerous and destructive now than they were formerly, or only twenty-five years ago. Then to plant a tree or a crop and tend it with only old-fashioned care was to insure a harvest, and generally a satisfactory one. Now no one can secure even an apology for a crop without unremitting care and much "doctoring" of the plants.

The cause of this change is not hard to find. It is the boast of our time that methods of transportation have become so perfect that commerce, even in the case of such perishable articles as fresh fruits and living plants, has extended to the ends of the earth and our markets are supplied with fresh productions of all countries and climes. But the reasons and appliances which suffice to bring us such useful products suffice equally well to bring, and in fact do bring, us the crop pests formerly peculiar to different and distant climes. As to the seeming increase in the voracity of our native pests, this is more apparent than real. It is not that our native species of insects eat more than formerly, but rather that we, by our continual and extensive improvement in cultural varieties of plants, have rendered the latter more or less artificial and not fair representatives of the originally vigorous stock. We no longer dig up trees from fence corners or chance seed beds. We seize upon spontaneous variations and by our improved methods propagate and fix these so-called improvements. Improvements they may be from a human or economic standpoint, but from a physiological standpoint they are too often degenerations. We also plant these pampered trees in large blocks, and this fact explains why our more improved varieties become less and less able to withstand the assaults of their natural parasites.

Well, we must accept modern progress even with its concomitant evils, but by national measures and precautions we can greatly decrease, if not extirpate, many of these evils. We have not met here to-day to condole with one another, but to devise such legal measures as shall tend to prevent the introduction and dissemination of these parasites.

The parasites which trouble the horticulturist belong to three different categories, viz, fungi, weeds, and insects. Now as to the first class, ten years of practical experience as an experiment station botanist has convinced me that only State laws and local ordinances are of any use. The best that a national law can do for us is to prevent the sale of apparently diseased nursery stock, but none of the more destructive diseases, such as peach yellows, plum knot, or pear blight, appear with sufficient distinctness to be recognizable upon young trees or such as are usually sold by nurserymen. Laws against this class of pests must be directed against orchards on the lines of orchard hygiene and management. Such laws fall within the sphere of State influence alone.

Against weed pests a national law would be more effective than in the case of fungi, but it is doubtful if the results would be worth the expense. Most of our more troublesome weed pests are of foreign origin, and were originally introduced in foul samples of clover, grass, and field seeds. Of recent years the experiment stations have devoted much attention to seed testing, and the official association at its last meeting arranged for a uniform system which will have the effect of driving foul seed samples out of our markets.

Our third category includes insect pests, and here, I think, we have abundant grounds for governmental intervention. Insects possess greater powers of adaptation than plants. They pass through various changes of structure during the period of their life history, and in some one or more of these phases they are capable of remaining dormant and without food for an indefinite period. This enables them to secure dispersion, with and upon the plants they infest in their original homes, to all countries to which such plants or their fruits are carried by commerce. An efficient quarantine law by Congress to enforce entomological inspection of all imported plants, fruits, and seeds by a competent entomologist will go very far toward preventing the further introduction of foreign insect pests. A similar law regulating interstate commerce in plants and allowing free circulation only of such as have been examined and certified as free from insect parasites, will prevent the further spread of pests already existing in one or more of our States. The deplorable results of the absence of such a law is only too readily seen in case of the recent spread of San Jose scale in the Atlantic States.

The need of such a law is peculiarly felt in the new fruit-growing sections of the South. Hitherto, and until a comparatively recent time, the highways of commerce had not so extensively penetrated the Southern as the Northern States. Along with the disadvantages entailed by the lack of commerce, we have enjoyed the blessing of immunity from many of the most destructive pests which affect Northern fruit growers. We realize the danger of speedy infection unless we can secure protection by an enactment of Congress—the only possible source of an efficient law. North Carolina has already tried State laws, and so have other States, but when such laws promise any good their provisions are pronounced unconstitutional by the United States courts.

To recapitulate: (1) Pests of crops belong to three categories—fungi, weeds, and insects; (2) only the last class can be effectively dealt with by a national law; (3) insect pests can not be effectively or economically dealt with by State or local laws alone; (4) a national quarantine law against foreign insect pests and the enforced inspection and certification of plants which are objects of interstate commerce are the principal desiderata in such a law.

A general discussion followed the reading of the papers. The discussion brought out the various interests represented, and was continued until 1 o'clock, when a recess was taken until 3 p. m.

Afternoon Session, Friday, March 5, 1897.

Drafts of Bills Covering State, Interstate, and International Legislation.

The convention was called to order by the chairman at 3 p. m. The committee on legislation presented drafts of bills covering State, interstate, and international legislation, and gave a hearing to members of the convention upon the merits and defects of these measures.

Committee to Invite the Secretary of Agriculture to Address the Convention.

At 5 p. m., upon motion of Mr. W. W. Miller, of Ohio, a committee, consisting of Messrs. Miller and Farnsworth, of Ohio, and Hooker, of New York, was appointed to wait upon the Secretary of Agriculture, the Hon. James Wilson, and invite him to address the convention.

Secretary Wilson was introduced and made a brief address, in which he expressed a deep interest in the matters under consideration by the convention.

The convention adjourned at 8 p. m.

Evening Session, Friday, March 5, 1897.

Resolutions Relative to the Extermination of Gypsy Moth.

At the evening session the following resolutions, offered by Mr. Sessions, of Massachusetts, were favorably reported by the committee on resolutions and were adopted:

Whereas the State of Massachusetts has for the past six years been engaged in an effort to exterminate the *Ocneria dispar*, or gypsy moth, an important insect pest, which is as yet confined to a small area in the State of Massachusetts, and which preys upon the foliage of all deciduous and coniferous trees and shrubs, as well as upon the leaves of almost all vegetables and flowering plants, and which if not exterminated will spread all over this country; and

Whereas the State of Massachusetts has appropriated seven hundred and seventy thousand dollars, of which more than four-fifths has already been expended in the work of extermination with considerable success:

Resolved, That this is a question of national importance, and that the National Government should assume the work of extermination or render substantial financial assistance to the State of Massachusetts for that purpose, that the work may be carried to a successful conclusion and this continent be thus saved from the ravages of another terrible insect pest.

Resolved, That the committee on legislation is hereby directed to appear before the proper committees of Congress and advocate suitable legislation to carry into effect these resolutions.

Resolution to Make Committee on Legislation Permanent until Next Meeting.

The following resolution was offered by Mr. S. L. Lupton, of Virginia, and was adopted:

Resolved, That the committee on legislation be continued as a permanent body until the next meeting of the convention, with power to appoint an executive

committee, whose duty it shall be to represent the general committee and the convention before Congress in securing such legislative action as may be recommended by the general committee or the convention, and the chairman of the general committee shall have power to fill vacancies in either committee.

Resolution Relative to Adjournment.

Mr. Brown, of Connecticut, offered the following resolution, which was also adopted:

Resolved, That when this convention adjourns it shall adjourn to meet at the call of the president, vice president, and secretary, who shall notify the associations and institutions now represented in the convention and other associations of similar character.

The convention then adjourned to meet at 10 a. m. Saturday.

Morning Session, Saturday, March 6, 1897.

Resolutions Relative to State Legislation against Insect and Fungous Pests.

The convention was called to order at 11 a. m. The following as to State legislation was reported by the committee on legislation and was adopted:

(1) That each State should provide for the proper inspection of nurseries and other premises for the detection of the presence of the San Jose scale or other dangerously injurious insects or plant diseases.

(2) That each State should provide for the proper and timely application of the most approved remedial or preventive treatment when found necessary.

(3) That should packages of nursery stock, etc., be shipped into a State contrary to law, i. e., without proper inspection certificates attached, it ought to be so handled as to receive proper inspection and not be destroyed unless condemned by proper and competent authority.

(4) That each State should cooperate in securing the passage and enforcement of a national law providing against the introduction and dissemination of San Jose scale and other dangerously injurious insects and plant diseases by means of imports or through interstate commerce.

Discussion of Bill Relating to Interstate and International Legislation against Insect and Fungous Pests.[1]

The same committee then reported the draft of a bill relating to interstate and international phases of the subject. It was agreed that the proposed bill be read, discussed, and adopted by sections. (The bill as adopted is given on p. 29 in full.)

Section 1 was read by the secretary, and was discussed as follows:

Mr. Alwood. What I say now I should have said before the taking up of this section, but I failed to rise at the time. It is simply a word of outline. The committee thought it unwise to provide for any specific

[1] No full official report of this discussion was made by the secretaries, but learning that Mr. Howard had made a stenographic report for his own information, the editor has asked his permission to publish it in the proceedings, as the discussion was interesting and important.

State law and decided to combine what might be termed international quarantine and interstate quarantine in one bill. The international quarantine is dealt with in the first four sections of the bill. This proposed measure intends to give to the Secretary of Agriculture large discretionary power, such as he already has in the operations of the Bureau of Animal Industry. The bill further provides that if a foreign country will make arrangements for proper inspection of nursery stock, etc., which the Secretary of Agriculture can accept, said stock may enter without quarantine either at the threshold of the country or between the States. The idea is to put no restriction that is not absolutely necessary upon the movement of the stock, but to permit the utmost freedom, so that the stock may be inspected either at the ports of entry or the ports of the country from which it is shipped. We find it unwise to propose a measure for quarantining fruit between the States. We did provide in the bill, however, for the strict regulation of nurseries—not the quarantine of farms, but the quarantine of individuals or corporations who sell or transport nursery stock. We went so far as to make it possible for the farmers to provide their own inspector under the rules and regulations of the Secretary of Agriculture. But the main thing is that the State shall provide and maintain inspection and that the Secretary of Agriculture shall accept such. If the State fails in this the Secretary of Agriculture is given large discretionary power to prevent the dissemination of infested stock by interstate commerce—not to touch it in the State, but to prevent it from entering interstate commerce. These are the main provisions of the bill and the main lines of thought which governed the committee.

Mr. VAN DEMAN. I do not know if there is anything in it and I throw it out as a suggestion, but regarding the word "fruit," might it not be construed to mean not only fresh fruit, but dried fruit as well, for instance, dried prunes, etc.? We might get into some complication over the lack of the word fresh before fruit.

Mr. BISSELL. It seems to me that would come within the discretion of the Secretary of Agriculture. I do not think it would be misconstrued.

Mr. BEACH. I see no reason why if we specify fruits we should not also specify nuts.

Mr. POWELL. The word fruit covers nuts.

Mr. DANIELS. I think the word "fruit" is a very important factor in the bill. What difference does it make to us whether a scale insect comes over in a prune or on a plant or tree? We do not care how it comes here. We do not want it to land on this coast if we can help it. Commerce between States is a family affair, but when a pest comes from abroad it is a matter that we have to deal with in a body. If it is discovered that some disease or insect is imported into this country, we want it stopped at once, as soon as discovered. Leave it to the discretion of our Secretary of Agriculture. We have implicit confidence in

the man who fills that office, and I believe it is the desire of the people here that we leave it to him.

Mr. VAN DEMAN. I am fully in accord with the sentiments of the gentleman from California, and if the inspection of dried prunes and other dried fruits is practicable I am certainly in favor of it, but the question rises in my mind as to whether it would be practicable, because dried fruits are put up in sacks, boxes, etc., and it would be, in my opinion, impossible to properly inspect fruits in that condition.

Mr. POWELL. The chances are they would not need to be inspected, but if they did it could doubtless be arranged by raising lids and fumigating.

Mr. ALWOOD. The committee intended the application of this part only in case of some immediate danger from a certain district. Where this was threatened the Secretary of Agriculture could then check it and save the country from the introduction of some serious pest.

The section was adopted without amendment.

Section 2 was read and was adopted without discussion or amendment.

Section 3 was then read and was discussed as follows:

Mr. BARRY. I would like to inquire whether the committee considers it feasible to examine stock at a port of entry, or have the stock inspected at a port of entry, as in the manner suggested in this section—take, for instance, the arrival of 100 cases of nursery stock in one shipment; I would like to inquire how it is to be done.

Mr. HOBBS. It seems to me rather impracticable to treat the stock at the port of entry here. It occurs to me that this inspection and treatment of the stock should be done before it is boxed. I think we should require this.

Mr. ALWOOD. This was all considered by the committee, but we had no way of reaching it except to give the Secretary of Agriculture power to inspect it. Inspection has been beneficial in California. That can not be denied. The result would be in most cases that foreign countries would accept our law and shipments would be inspected on their side, otherwise leave it to the Secretary of Agriculture. I may say here that the Department of Agriculture has eyes that see very far. It knows what is going on in foreign countries and hence it can check stock at the port of entry.

Mr. BISSELL. The handling of nursery stock arriving in a vessel would be a simple matter compared with the other things inspected for the purpose of appraising value and fixing customs duty. The Secretary of Agriculture would certainly confer with nurserymen and have this matter handled in their interest.

Mr. BARRY. The section is apparently all right, but otherwise all wrong, because we do not see how it can be done. The committee admit that they do not see how it can be accomplished. It is all very well to make the law as you have, but there is something serious about it. We do not see our way clear to do it, and I shall not favor it until

we do see our way clear. I shall object, because I can not, as a nurseryman in this country, consent to form a law which would restrict trade entirely. Every nurseryman imports more or less nursery stock, and this section would cut it off entirely. I may be wrong. To save time I will also refer to another part: "Shall be duly stamped or labeled." How do you interpret that? Is every particular item to be "duly stamped or labeled?" Suppose I have 100 cases, when would that be done?

Mr. BISSELL. The Secretary of Agriculture would be authorized to use discretion in such matters.

Mr. BARRY. Nursery stock is not like other goods. Prompt action must be taken, and if you are going to leave the thing in this indefinite shape I shall object to it. Do not think I am criticising this merely for the purpose of criticising. These simply appear to me to be difficulties in the way. Somebody may see a way out.

Mr. WARDELL. I want to call the attention of the gentleman to the fact that we have a quarantine in our State [California]. We do open and examine goods. Usually they are goods in shipment for nurserymen throughout the State. The material arrives at San Francisco and much of it we have been compelled to quarantine. If our State can do it, certainly the great United States can do it. In regard to feasibility and practicability of inspecting these goods, that is a simple matter. Copies of the laws will be sent to men making shipments from foreign countries, and they will understand that trees and plants must be so placed, must be so packed, that they can be readily opened and inspected, otherwise they will be subjected to inevitable delay. Copies of the regulations will be printed and sent out, as a matter of course, so that no man will have to act in the dark, and no man can reasonably plead ignorance. Goods will be packed so that they can be readily inspected and readily treated if necessary, and that, I repeat, is a very simple matter. We expect the Secretary of Agriculture will meet this easily. It is not necessary to say how goods shall be packed. They may be placed in boxes with lids which could be opened and closed just as a trunk is inspected at the customhouse.

It is an easy matter to paste on the case a certificate stating that it has passed inspection. This is all that the bill anticipates. The gentleman, of course, recognizes the fact that we have struggled with these questions for many hours, and they have been fully discussed in committee. I do not see any reason why the United States Government can not quarantine against any dangerous insect, and do it efficiently, and do it so as not to inconvenience the nurseryman. In my State we are constantly inspecting goods, opening cases, etc., and if any contain injurious insects or disease they are promptly destroyed. What has been done can be done again.

Mr. BARRY. The last speaker stated that there was no difficulty. I can see very grave difficulties. Goods arrive say in the middle of

winter. They are put upon the platform in the customhouse when the the mercury is sometimes down to 10° below zero. If the case is opened and the goods exposed in twenty-four hours the contents will be utterly ruined. I think it is a very difficult matter. Shipments usually arrive in the month of January—sometimes in December, but generally in January. It would be very difficult to expose stock at this time without injury.

Mr. BISSELL. The stock could be inspected and properly certified before being sent to this country.

Mr. BARRY. Can the Government arrange to have it certified on the other side? I ask Mr. Howard whether such arrangements can be made.

Mr. HOWARD. The great majority of foreign countries employ efficient entomologists. No doubt their services could be readily arranged for this purpose. It would be comparatively easy for the the Secretary of Agriculture to overcome this winter difficulty also. No inspector would like the job of examining stock with the mercury 10° below zero. A barn or house could be erected for this purpose.

Mr. VAN DEMAN. It seems to me that the examination could be quite as easily made as in the case of meat inspection. France, Germany, and other countries will not accept from us a pound of meat that has not been inspected before leaving here, and if we can do that satisfactorily here it can be done there in the matter of nursery stock.

Mr. ALWOOD. The Government would not employ any but honest and responsible men to do this work. They would not be unreasonable. The committee believe that this inspection would be effective. We believe also that it would be difficult. We do not yet know all the details necessary. We believe the men who represent the Department of Agriculture are fully capable of meeting and mastering the case. These difficulties are not insurmountable. I wish to make the point of order that this matter has already been passed upon. Section 3 does not provide for inspection.

Section 3 was then adopted without amendment.

Section 4 was read and adopted without discussion or amendment.

Section 5 was then read and was discussed as follows:

Mr. BISSELL. Would it not be feasible to interpolate the word "fruit"? It seems to me a great deal of danger lies in the spread of the San Jose scale in that way, and if feasible we might require persons to have orchards inspected so that stock could be shipped without any trouble at all. Compel them to clean up the premises. I think it would be perfectly proper. It would not be a hard thing to do and would certainly prevent spread to a large extent.

Mr. POWELL. In regard to the shipment of scions or buds, how can the Secretary of Agriculture get at the farmers scattered all over the country who simply send away a few cuttings or buds? How can these little sendings be regulated?

Mr. ALWOOD. Section 8 provides that the Secretary of Agriculture can compel the inspection and treatment of shipments from private individuals, but I do not think we should leave the bars open to send stock through the mail.

Mr. BISSELL. I move that we interpolate the word "fruit" after the word "scions." We certainly should be consistent and protect ourselves against each other.

Mr. POWELL. I can not see how that will cover all these questions. If we depend on individual certificate it does not amount to anything. Every entomologist receives specimens of katydid eggs sent in for San Jose scale from farmers who want to know if they should begin to spray for the scale. If we rely on certificates from farmers and fruit growers who can not tell the difference between a katydid egg and the San Jose scale we shall not be very well off.

Mr. HOOKER. As I understand it, by the regulations of the Secretary of Agriculture, persons sending out cuttings, scions, etc., would be required to give them proper treatment before sending them out. That, of course, would involve fumigation, no matter what kind of an insect was on them, and it would be destroyed.

Mr. BARRY. If Mr. Alwood, for instance, sent to me for a small quantity of stock, would I have to get somebody to examine it first?

Mr. POWELL. Get authority to treat it.

Mr. BARRY. Would I have to get a certificate from somebody? If I would have to go to all that trouble I would not fill the order. I would simply tell Mr. Alwood that the goods were not in stock.

Mr. ALWOOD. It is quite easy to reduce discussion to the absurd. The committee realized how difficult it would be to make this measure perfect. It is not perfect. Many absurd things will come up in everything we undertake. I know that this individual treatment is not difficult. I know Mr. Hood, of my State, is doing it under my direction. It is not at all difficult to fumigate. Regulations properly drawn up will permit individuals to fumigate in the best manner known.

Mr. BARRY. I was not joking about this individual case. It may look absurd, but supposing we receive from the experiment stations similar orders (and for a number of years we have been furnishing experiment stations all over the country with scions) sent at all seasons of the year. Can we procure a blanket form from the authorities to do that kind of thing? If we could not it would be foolish to attempt to send any.

Mr. ALWOOD. Under this law regulations may be made to provide for this case with the utmost ease. The Secretary of Agriculture can draw up regulations for that very thing. It is not difficult to treat insects. It is very simple. It may be done in a few minutes. I did not think you meant to be absurd. Your remark created a laugh, and it is easy to laugh at anything. The committee struggled with this matter a great deal.

Section 5 was then adopted without amendment.

Section 6 was read and was adopted without discussion or amendment.

Section 7 was then read and was discussed as follows:

Mr. TAYLOR. Does this prevent the mailing of infested scions or plants?

Mr. ALWOOD. That question has been asked a number of times and the committee had it under consideration.

Mr. TAYLOR. As I understand it, transportation by mail is not transportation by an individual or corporation, but transportation by the United States Government.

Mr. HOWARD. After the words "delivery to any person or persons" add "or to the United States postal service." I think this would obviate the difficulty.

Mr. WAITE. Can specimens be sent to the United States Department of Agriculture for identification?

Mr. WARDELL. I am of the opinion that the word transportation should be given a liberal construction, so that we can avoid making a lengthy addition to the bill. I believe it is covered in the bill, which reads, "transportation by any person or persons." The postmaster is a person or a thing, but should be a person.

Mr. TAYLOR. My object in asking the question was that the next section provides a penalty. Is the postmaster to be fined?

Mr. ALWOOD. We do not know how to deal with the Government. The Secretary of Agriculture can not deal with the Postmaster General.

Mr. BEACH. Some matters must be modified. It seems to me that having expressed our opinions on this matter we can simply leave it to the authorities to adjust according to their ideas.

Mr. VAN DEMAN. Let me say that a great many specimens are mailed that must necessarily be infested with living organisms in order to be of any value to the scientists who receive them. I move that we add the words "except for scientific purposes."

The CHAIRMAN. The question is on the insertion of the words "to the United States postal service for scientific purposes."

Mr. BEACH. It seems to me if we designate officials of the Government we are doing injustice to other scientists. Let us leave this matter to the discretion of the committee, having expressed our views on the matter.

Mr. ALWOOD. Allow me to say that this is a matter you have already provided for by leaving it in the hands of the committee. I think if you will leave it to the committee they will provide for that matter.

Mr. TAYLOR. I wish for my own information to inquire as to whether the committee considers that the section as worded would prevent private parties from taking scions from their farms in one State to their farms in another State without inspection and whether they would be liable to a penalty.

Mr. ALWOOD. We do not intend that any man should be favored because he owns two farms.

Mr. TAYLOR. The question is if trees are uninfested, not infested.

The CHAIRMAN. Mr. Taylor's question is a good one and ought to be considered by the committee.

Mr. ALWOOD. How can we make exceptions to regulations? We can not cover this in a bill.

Mr. TAYLOR. I wish to be clear on one point before the matter passes. Is it the understanding of the committee that a private individual would be subject to penalty for carrying uninfested stock?

Mr. ALWOOD. It is.

Mr. TAYLOR. I am not a lawyer, but this is unprecedented in Federal legislation. The State could refuse to admit stock inspected by the Federal authorities, but this, in my opinion, is a distinct encroachment upon rights and opens an entirely new line of legislation.

Mr. ALWOOD. The United States laws would not uphold such a law. We are not lawyers, but the distinct declaration of the bill is that it deals solely with interstate commerce.

Section 7 was then adopted without amendment.

Section 8 was read and adopted without amendment.

The preamble was read and adopted without amendment.

The bill was then adopted as a whole and read as follows:

BILL RELATING TO INTERSTATE AND INTERNATIONAL LEGISLATION AGAINST INSECT AND FUNGOUS PESTS.

AN ACT to provide for the inspection and treatment of trees, plants, buds, cuttings, grafts, scions, nursery stock, and fruit imported into the United States, and for the inspection and treatment of trees, plants, buds, cuttings, grafts, scions, and nursery stock grown within the United States which becomes a subject of interstate commerce.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

SECTION 1. That the Secretary of Agriculture be, and is hereby, authorized, at the expense of the owner or owners, to place and retain in quarantine all trees, plants, buds, cuttings, grafts, scions, nursery stock, and fruit imported into the United States at such ports as he may designate for such purposes and under such conditions as he may, by regulation, prescribe, and that he may appoint inspectors for the purpose of examining such trees, plants, buds, cuttings, grafts, scions, nursery stock, and fruit for the purpose of ascertaining whether they are affected by any dangerously injurious insect or disease, the importation of which will be prejudicial to the horticultural interests of the United States, and provide for the treatment of such when found necessary.

SEC. 2. That when such trees, plants, buds, cuttings, grafts, scions, nursery stock, and fruit shall be determined to be infested with any dangerously injurious insect or disease they shall be treated at the expense of the owner or owners in accordance with the regulations of the Secretary of Agriculture, or they shall be destroyed in case their condition is such as to warrant such destruction; but an appeal may be taken from the decision of the inspector to the Secretary of Agriculture if such appeal be taken within three days after such inspection, and the decision of the Secretary of Agriculture shall be final.

SEC. 3. That when such inspection shall show that such trees, plants, buds, cuttings, grafts, scions, nursery stock, or fruit are apparently free from dangerously injurious insects or diseases, a certificate to this effect, made in accordance with the regulations of the Secretary of Agriculture, shall be issued to the owner or owners thereof by the said inspector, and this certificate shall operate to release all the objects above specified, when duly stamped or labeled with the same, from further quarantine or restriction either at the said port of entry or in interstate commerce. Any person who shall forge, counterfeit, or knowingly alter, deface, or destroy any of the marks, stamps, or certificates provided for in the regulations of the Secretary of Agriculture on any such trees, plants, buds, cuttings, grafts, scions, nursery stock, or fruit, or who shall forge, counterfeit, or knowingly and wrongfully alter, deface, or destroy any certificate as provided for in said regulations, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine not to exceed five hundred dollars or imprisonment not to exceed one year, or both, at the discretion of the court.

SEC. 4. That whenever it shall appear to the Secretary of Agriculture that any foreign country shall have provided proper and competent inspection and treatment, in accordance with the provisions of this act, for the objects above specified as being subject to inspection and treatment, he may, by proclamation or otherwise, accept such inspection and treatment in lieu of inspection performed by officers appointed by himself, which acceptation or proclamation by the Secretary of Agriculture shall relieve all such articles specified in the foregoing sections of this act, when properly stamped or labeled, from further quarantine or restrictions.

SEC. 5. That the Secretary of Agriculture shall cause to be inspected and properly treated, at the expense of the owner or owners, prior to their shipment, all trees, plants, buds, cuttings, grafts, scions, and nursery stock which are subjects of interstate commerce and which are about to be transported from one State or Territory or the District of Columbia into another State or Territory or the District of Columbia.

SEC. 6. That the said examination shall be made in the manner provided for by the rules and regulations prescribed by the Secretary of Agriculture, and that after such examination the trees, plants, buds, cuttings, grafts, scions, or nursery stock found to be apparently free from dangerously injurious insects or diseases shall be marked, stamped, or labeled for identification, as may be provided for by said rules and regulations of the Secretary of Agriculture, and when so stamped or labeled they shall not be subject to further quarantine or restriction in interstate commerce. Any person who shall forge, counterfeit, or knowingly alter, deface, or destroy any of the marks, stamps, or said devices provided for in the regulations of the Secretary of Agriculture on any such trees, plants, buds, cuttings, grafts, scions, and nursery stock, or who shall forge, counterfeit, or knowingly or wrongfully alter, deface, or destroy any certificate provided for in said regulations, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine not exceeding five hundred dollars or imprisonment not exceeding one year, or by both such punishments, at the discretion of the court.

SEC. 7. That it shall be unlawful for any person, persons, or corporation to transport from one State or Territory or the District of Columbia, or for any person, persons, or corporation, to deliver to any other person, persons, or corporation, or to the postal service of the United States, except for scientific purposes, by permission or direction of the Secretary of Agriculture, for transportation from one State or Territory or the District of Columbia into any other State or Territory or the District of Columbia any trees, plants, buds, cuttings, grafts, scions, or nursery stock which have not been examined in accordance with the provisions in sections 5 and 6 of this act, or which on said examination have been declared by the inspector to be dangerously infested with injurious insects or diseases. Any person, persons, or corporation violating the provisions of this section shall be guilty of a misdemeanor, and

upon conviction thereof shall be punished for such offense as provided in section 6 of this act.

SEC. 8. That whenever it shall appear to the Secretary of Agriculture that any State, Territory, district, corporation, firm, or person shall have provided proper and competent inspection and treatment in accordance with the provisions of this act for the objects above specified as being subject to inspection and treatment, he may, by proclamation or otherwise, accept such inspection and treatment in lieu of inspection and treatment by officers appointed by himself, which acceptation or proclamation by the said Secretary of Agriculture shall relieve all such articles specified in sections 5, 6, and 7 of this act, when properly stamped or labeled, from further quarantine or restrictions in interstate commerce.

SEC. 9. That the sum of fifty thousand dollars, or so much thereof as may be necessary, is hereby appropriated, out of any moneys in the Treasury of the United States not otherwise appropriated, to carry into effect the provisions of this act.

SEC. 10. This law shall take effect on and after the first day of July, 1897.

It was voted that the committee on legislation be made a committee on ways and means, and, further, that each member of the convention contribute $1 to defray the necessary expenses of the convention.

Upon motion of Mr. Powell, a unanimous vote of thanks was extended to the proprietor of the Ebbitt House for his courtesy in providing a room for the use of the convention.

Upon motion of Mr. Barry, a vote of thanks was extended to those who read papers before the convention, to the officers in charge of the convention, and to the Ohio Horticultural Society for issuing the call for the convention.

A committee, consisting of H. E. Van Deman, S. L. Lupton, and M. J. Daniels, was appointed to wait upon the Secretary of Agriculture and request him to publish the proceedings of the convention as a special bulletin.

The convention then adjourned.

WESLEY WEBB,
M. J. DANIELS,
Secretaries.

SESSION OF THE PERMANENT LEGISLATIVE COMMITTEE.

The permanent legislative committee met immediately on adjournment of the convention and elected the following executive committee:

EXECUTIVE COMMITTEE.

W. B. Alwood, Blacksburg, Va., chairman.
F. M. Webster, Wooster, Ohio, secretary.
E. M. Wardell, Los Angeles, Cal.
J. H. Hale, South Glastonbury, Conn.
C. M. Hobbs, Bridgeport, Ind.

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