ENTOMOLOGICAL SOCIETY OF ONTARIO.

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he operaort, 1894, n check.) oth Comonducted until the i0 gallons described ining the icide subh seemed es of difper, zinc, iron, manganese, mercury, etc., were considered. The cyanides of antimony and copper, on theoretical grounds, seemed to promise best. The cyanide of antimony was totally without effect at the rate of 10 pounds to 150 gallons of water. Cyanide of copper was fairly effective, but too expensive for practical employment, three pounds to 150 gallons of being with this substance equivalent to one pound of Paris green to 150 gallons of water, or three or four pounds of arsenate of lead to 100 gallons. Even where no practical results seem to have been obtained, as in the above series of experiments, he pointed out the value of the negative results; in that the very fact that the merits of these substances valuable for insecticides is better understood and limited. In connection with the various experiments with insecticides he had occasion repeatedly to emphasize the extreme vitality of the gypsy moth larva and its immunity to the action of poisons.

Mr. Riley discussed the gypsy moth question at considerable length. He said he had always been much interested in the gypsy moth work, and referred to the orginal conference called by the State Board of Agriculture of Massachusetts, giving an account of this meeting, and of the suggestions made by himself and others as to means of controlling the insect. These suggestions were necessarily based on experiences with our well known common insects having somewhat similar habits, and had no basis in any actual experience with the insect under discussion. He had recommended and believed that the use of the arsenites is one of the most practical and effective means of control. There can now be no doubt, however, that this insect is an exceptional one, and probably can not be controlled by means which are quite effective against other insects, enemies of our trees, having similar habits. Emphasizing the great damage which may be done by this insect, he was convinced that its control and destruction are not only extremely necessary to the State of Massachusetts, but are also of national importance. He had always been in favor of extermination rather than of attempting to limit and control, but he pointed out the very great difficulty of exterminating the species if the work is mainly directed toward the destruction of the eggs, referring in this connection to his early statement in this regard, in which the destruction of the eggs had not been deemed of prime import-He thought, however, that in this particular he had been too extreme. He ance pointed out the absolute futility of any efforts at extermination which did not promise complete results. All that he had said in criticism of the Commission had been relative to the operations prior to Professor Fernald's controlling connection with the work. He heartily appreciated the value of the present methods as detailed by Professor Fernald. He felt that if at the outset a supreme effort had been made, with the aid of a very large appropriation, complete extermination of the insect could have been accomplished. He gave a summary of some early work and his criticism of it. He was somewhat inclined to question whether we are now justified in working on the basis of extermination through a State commission, or whether it would not be better to encourage the efforts of private individuals wherever the insect occurred, as is the case with other insect pests. He complimented very highly, however, the present work of the Commission. In discussing the subject of parasites, which had been referred to by Mr. Fernald, he was not inclined to agree with the idea that the aim of the commission at complete extermination detracted at all from the necessity of undertaking the importation of foreign parasites. He said that such introduction could be accomplished at comparatively slight expense and would aid just so much the object of the Commission, pointing out also the greater usefulness of European parasites over native ones if introduced without secondary parasites. This would be particularly evident if his idea of the greater value of the destruction of the larvæ rather than the eggs were conceded.

In illustration of the great weight and value of Professor Riley's ideas on this subject, Mr. Fernald referred in the most complimentary way to the value of his long years of labor in the field of economic entomology, which had resulted in a store of information used and appreciated by all the workers of the world at the present day. He gave some statistics of the injury capable of being done by the gypsy moth in the State of Massachusetts, basing his deductions on the value of farm products and the estimated value of forest and shade trees (Mr. Lintner interjecting in the latter connection that the Saratoga elms were insured by the State at \$500 each). Taking the probable injury from

79