The realization that in the ultimate control of the gipsy moth in North America, the silvicultural aspect of the problem must receive serious consideration is an indication of the importance of chemotropism in the control of this pest. The elimination of favored food plants and the substitution of unfavored species such as pine are measures largely based on the principle of food attraction, that is, of chemotropism, and should be so regarded.

Enticing and suggestive as the subject of chemotropism has been shown to be, we must pass on to the next tropic reaction, namely, thermotropism. In temperature we encounter an environmental influence which is as far-reaching as it is universal in its relation to insect behaviour, and while it is inseparably associated with other factors, especially that of moisture which we shall consider later, it is in itself sufficiently potent to determine the range of insect activity in both time and space. The relation of temperature to the distribution of insects is too well known to require demonstration by examples. Merriam's laws of temperature control, namely: (1) that "animals and plants are restricted in northward distribution by the total quantity of heat during the season of growth and reproduction," and (2) that "animals and plants are restricted in southward distribution by the mean temperature of a brief period during the hottest part of the year," in general, hold true in regard to insect distribution. The importance of determining the optimum temperatures for the reproduction and development of different insects has been realized by a number of investigators, although their conclusions have sometimes been defective through neglect to take into consideration the coöperative effect of other environmental factors such as humidity. The influence of temperature on development is illustrated very strikingly in the Aphides. For example, Ewing has recently found that a constant temperature of 90° F. is sufficient to prevent completely the development of *Aphis avenæ* and that the optimum temperature for the production of wingless agamic forms of this species is about 65° F., these forms only being produced at a mean average daily temperature of about 65° F.

Practical use is now made of our knowledge of the temperature relations of insects in the employment of high temperatures as a means of insect control, and "superheating" offers great possibilities.

An interesting case of the use of temperature as a means of control is afforded by the employment of the method of close-packing of horse-manure for the purpose of preventing the breeding of *Musca domestica*. About ten years ago I found that a temperature of about 105° F. was fatal to the larvæ of *M. domestica* and in an account given before this Association in 1913 of further studies of the effects of the temperature