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soap and soda will be effective. The formula that was said to kill all the eggs was :

Soft soap, .....	1½ pounds
Kerosene, .....	2 gallons
Caustic soda, .....	6 pounds
Water, .....	30 gallons

Emulsify the soft soap and kerosene with 1 gallon of water in the usual way, then add the soda and water to make up the full amount. Made up with a half pound of hard soap in the way usually recommended for the ordinary kerosene emulsion would probably answer just as well, and the material, when reduced and without the soda, would be a 1 in 15 kerosene emulsion—altogether too weak to reach any of the usual scale insects in winter form. The addition of the soda seems to open the way for the kerosene, not only through or beneath the scale, but into the egg as well. The formula is well worth trying.

#### The Periodical Cicada.

In the Report for 1906 I noted the fact that Brood XIV. of the Periodical Cicada, VIII. of my Report for 1889, had been practically eliminated in this State, and that not a single authentic record was received by me. Later I was informed by Mr. Marlatt of the United States Department of Agriculture at Washington, that a fairly reliable report had been received of their occurrence in Bergen county, so it may be that the brood still maintains itself with us by a slender hold.

No brood was scheduled for 1890, and yet in that year a few examples were reported from Staten Island, from Essex county, and from Anglesea. These records and others from New York and North Carolina induced Mr. Marlatt to enumerate a Brood XV., as an off-shoot from XIV., and made it a matter of some interest to note whether the insects would be present in observable numbers.

From Staten Island Mr. William T. Davis reported hearing the insects at two points 10 miles apart and taking several pupa cases. Personally, during a September ride through the Island,

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I saw a number of trees which showed the characteristic, dead and broken tips indicating the egg punctures of this insect.

In New Jersey quite a colony occurred in Union county, extending from Plainfield to Westfield, and probably for some distance round about. This colony was reported by Mr. Davis, and on July 4th, Mr. H. H. Brehme collected a number of pupæ. One of the correspondents of the United States Department of Agriculture reported to Mr. Marlatt that he heard them several days in late June near Westfield.

Mr. Davis informs me that at Newfoundland, in Morris county, the insects were heard by an acquaintance whom he considers entirely reliable and familiar with the song of the species. This gives the species a somewhat greater range than previous records, but from the same general region.

On the other hand, the Essex county colony seems to have disappeared. None of the members of the Newark Society saw anything of them, and on July 1st, Mr. E. L. Dickerson spent the entire day in the wooded portions of the county without hearing a sound or finding any traces of adults or pupa-shells.

Nor could I get any trace of the specimens in Cape May county, either from observations made in June and July, or from late September examinations of tree tops. I spent two days in lower Cape May county in mid-September, and neither on Five-mile Beach nor on the mainland did I see any trace of the insects or their work. The same record must be made for Hunterdon and Somerset counties so far as I covered them on my various trips, and Mr. Dickerson, who has been in almost every county in the State in nursery inspection work, reports no signs of their presence. It is doubtful whether this brood will ever again be reported in New Jersey.

The next brood of these insects is due in 1911, and will be a large one.

## INSECTS INJURIOUS TO FIELD CROPS.

Among the curiosities of the season was the almost total absence of potato beetles in many localities, and the generally small infestation throughout the State. In only a few localities were