SOIL HEATING IN CUTTING PROPAGATION UNDER BURLAP CLOUD CHAMBERS

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My talk today concerns the addition of soil heating to the previously described Burlap Cloud method of summer cutting propagation. This method is not new, and has been presented twice at previous annual meetings of our Society. It has also been described in the book, *Plant Propagation*, by Mahlstede and Haber.

Briefly, it is an economical method of taking advantage of all natural agencies that promote plant growth and rooting, namely high humidity, filtered sunlight and abundant soil moisture. The chamber is a lightly constructed frame of 1-inch cedar boards, 3'9'' x 12', to which is fastened along one side a length of 40 inch width of jute burlap, 10 oz. grade. During the hot part of the day, this burlap cover is stretched over finishing nails along the opposite side of the wooden frame or chamber. When in this position no dry outside air or direct sunlight can enter the chamber except through the moist burlap.

Preparation of soil. Soil for the cutting beds is rubbed through a ¾ or 1 inch sieve; a sticking depth of 3½ inches for the cuttings is provided. Because capillary moisture is so important, the soil floor below this sifted soil should be firmed. The soil within the frame should be about 2½ inches higher than in the paths, so as to ensure that the cuttings, before and after rooting, are on raised beds. The soil surface is spirit levelled before sticking so that it can be uniformly puddled as required. After treating with hormone and fungicide, the cuttings are inserted as quickly as possible into the mud and pushed firmly home.

As each chamber is filled, the burlap cover is put in place, and the burlap covers of all completed chambers are drenched manually with a fairly high-powered hose about four or five times a day on dry days. On wet or very cloudy days the frames are left open to full light and air. Even on sunny days the frames are only covered about 10 hours a day. From about 6:30 p.m. to 8:30 a.m. the following morning the burlap is thrown off and the cuttings left open to receive the benefit of evening and morning sunlight and night dew.

The method has given us such consistent success over the years that it has become standard practice. Only a few items of deciduous shrub material eluded success, namely those items which until very recently were normally propagated by budding or grafting. After a number of failures or partial failures with these items by open air misting as well as burlap chambers, we decided to try adding soil heating to the burlap chambers.

We are using thermostatically controlled lead cables at present, but probably a low voltage chicken wire would be still better. We keep the soil at about 80° F. The most successful items so far are *Prunus cistena*, certain varieties of French hybrid lilacs, *Prunus glandulosa* and *Prunus triloba*. The hardest item, *Viburnum carlesii*, has given results so encouraging in two years trial that commercial success appears possible. In all these operations we find that the best results come from prime cutting material gathered early in June.

The problem in regard to Viburnums, as everyone knows, is overwintering. The rooted *Viburnum carlesii* were lifted last fall and stored in a cold pit. This year my propagator and I disagreed as to whether it might not be better to leave them sit where they are rooted. So we have lifted some, and left some in their rooting site, to see what happens in each case next spring.

MODERATOR FLEMER: Once again you have given us a fascinating account of a very inexpensive and practical method of rooting cuttings with a nimimum of equipment.

KNOX HENRY: What is the soil mix you are using?

LES HANCOCK: We are not using any mix. It's just a regular sandy nursery soil. I believe the closer you keep to nature the better off you are.

JOE CESARINI: Have you tried this method with rhododendrons?

LES HANCOCK: We tried it with the deciduous azaleas but it just wouldn't work.

MODERATOR FLEMER: The next paper concerns a very important subject—namely, weed control in container production and will be presented by Tom Fretz.