NOTES BY PROFESSOR O. ENEROTH,

Professor of Forestry,
Skogshogskolan, Experimentalfaltet,
Stockholm, Sweden.

Seeding and planting are both commonly practised in Sweden. In 1925 artificial reforestation was carried out on 43,428 hectares. Of this area 62% was sowed and 38% planted. Sowing is thus more used than planting. Of the total area artificially reforested in 1925 were;

	<u>Sowed.</u>	<u>Planted.</u>
State forests	4,396	1,298
Private forests	<u>22,760</u>	<u>14,974</u>
	27,156	16,272

The plants used this same year 1925 are specified as follows;

Pine seedlings	49.9%	
" transplants	<u>3.3</u>	53.2%
Spruce seedlings	36.8%	
" transplants	<u>7.4%</u>	44.2%
All other species - larch and hardwoods		<u>2.6%</u>
		100.00%

1% is equal to 680,000 plants.

Seeding by means of seed spots is by far the most general rule. 90% at least of all seeding is carried out in this way.

Broadcast seeding is used sometimes on burned-over areas or on ditched swamps and marshes.

Our average forest soil with many stones and stumps is not favourable to drill-seeding.

So far as I know there is no English textbook or publication existing on Swedish practice in artificial reforestation.

As a rule we use planting on such areas where there is a luxuriant vegetation of grass, herbs, heather, etc., and sowing on such soils where the ground stratum is composed chiefly of lichens, mosses, etc.

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The principal difficulties in artificial reforestation as in the natural regrowth of our forests are;

1. Dry weather in the spring and early summer months.
2. Grazing by cattle, sheep, goats and horses.
3. Raw humus layers in the northern part of the country
4. Grass and herb vegetation on rich soils, especially in southern Sweden.

1. The annual precipitation in Sweden is about 560 mm. as a mean, varying between 450-500 in the eastern and northern parts of the country and 700-800 in the southwest. As a rule about half of the annual precipitation is falling in the four months July to October. May and June are dry months, as a rule. In order to avoid damages by drought on the small seedlings we are now going in for seeding not in the early spring but in the later part of June. Thus the small seedlings will pass the stage where they are easily liable to get damaged, in July, when the precipitation is sufficient as a rule.

2. Grazing in the forests will cause a poor forest and a poor pasture. The forest and the grazing ground should be separated by fences: no grass in the forest and no trees on the pasture. There is a great society in Sweden working for this purpose.

3. In the old and open stands of northern Sweden the raw humus layer is the principal obstacle to the regrowth of the forest. On clear-cut areas, however, this layer is decomposed by the rains and the heat of the sun. This decomposition is largely accelerated by burning the slash on the cut-over areas. There is no idea to sow or plant on such raw humus soils immediately after logging. The cut-over lands must have some years to ripen if there is a raw humus layer.

4. On rich soils, where there is not raw humus but mold, there will rapidly grow up a luxuriant vegetation of grass and herbs on clean-cut areas. The new stand must be on the spot before the old stand is entirely cut away, the regeneration, either natural or artificial, thus taking place under the shelter of a thinned-out stand. In the very dry parts of eastern Sweden, however, the plants of the intolerant pine will not stand the shadow of the shelter. In such sites slash-burning immediately after logging and rapid artificial reforestation before the grass has migrated into the area has proved a practicable method.

All Swedish foresters are, of course, working towards natural regeneration. I suppose that about 4/5 of the annual cut is reforested in this way. As we still have great areas of old stands, where there are few seed trees to leave, and as we may not yet justly say that we know how to produce natural regrowth exactly where and when we wish to have it, I should say we will have to seed and plant something about these 40,000 a year for some decades.