planted with Succirubra, wind blown and growth poor except in a low protected portion, where the growth is fair.

12. No: XI Plot 1865 B. 12.95 acres Shola soil, about 9/10 Succirubra fair growth in portions, poor where wind blown, one corner very exposed, trees very poor and dying out, about 1/10 Officinalis, very good growth, all the trees of both species barked 4 times. There are some pubescens trees.

13. No: XII Plot 1865 C. 12.43 acres, Shola soil, Succirubra chiefly officinalis, about 3 acres all splendid growth, all barked 6 times, the plantation is too crowded in parts, the trees not being 3 feet apart, the thin girthed trees not reaching the light should be uprooted.

14. No: XIII Plot 1866 A. 4.10 acres, Shola soil, nearly all officinalis, growth good but planted original-ly too far apart, barked 3 times.

No:

15. No: XV Plot 1866 B. 4.3½ acres, Shola soil, all Succirubra of very fine growth barked 6 times, there was a good deal of Calisaya in this plot, but it all died out some years ago.

16. No: XV Plot 1866 C. 12.45 acres, Shola soil, Succirubra except a small quantity of very fine old officinalis, and some young Calisaya, and pubescens, growth of Succirubra very fine, barked 6 times, about 1 acre formerly planted with Calisaya, all dying or dead, trees uprooted, yield of bark 730 lbs, date proceeds unknown, this block has been re-planted with 2000 young Calisaya and 600 young pubescens

17. No: XVI Plot 1865 A 3.7 acres, all Shola, planted chiefly with Succirubra, has been burnt over more than once, now poor and very thin, only about 300 trees remaining, soil poor and scarcely worth re-planting.

18. No: XVII Plot 1868 B. 8.13 acres, all shola, about 1/3 d. facing west very much blown, planted with Succirubra, condition bad; about 2/3

facing

facing East, Succinubra and Officinalis, about alternate trees very fair growth, all barked twice.

19. No: XVIII Plot 1869A. 9.96 acres, grass land, nearly all succinubra, growth fair particularly in lower portion, trees not barked. 400 Officinalis barked twice.

20. No: XIX Plot 1869B. 11.83 acres grass land, all Succinubra, upper portion exposed and growth very poor and thin, and should be uprooted and replaced by Officinalis, lower portion fair growth Notched barks for grass land, trees not barked.

21 No: XX Plot 1869C. 13.69 acres grassland, 2 acres Officinalis, good growth all barked, balance succinubra not barked, fair growth for the soil, but should all be uprooted and replaced by Officinalis which may be said of all grassland planted with succinubra in these plantations.

No:

* Major Lloyd's Reserve not visited.
Area - plotted from Diagram kept in Office.

22. No: XXI Plot 1869D. 13.26 acres, grass land except a small patch of shola land. all succinubra except a few supplies of Officinalis, not barked, except the small bit of shola soil all poor growth, and very thin in the upper portions should be uprooted and planted with Officinalis.

23. No: XXII Plot 1869E 12.18 acres, all shola land except a small corner of grass land (about 50 trees) all Succinubra except supplies of Officinalis, growth very good, not barked

24 No: XXIII Plot 1869F. 14.54 acres, 9 Ds. shola, 1/3 grass land, all succinubra except supplies of Officinalis, growth very good on the shola soil, fair on the grass land, trees not barked. 5 acres Coppiced in 1879, balance scraped in 1880. 5 acres succinubra Coppiced in July 1879 (in the same manner as in plot No: VII), 2628 unbarked trees cut, all stools pled terribly, 973 dead and uprooted, 1655 growth healthy shoots 1 to 3 to each stool, 3 to 4 feet high, blanks from the uproots

-rootals to be planted with succa-
-cana.

6 acres 4723 Succinubra pcs
scraped in September 80 on the new
Java principle, of the trees none
were mossed or covered in any
way as it was not supposed to be
necessary, 1978 trees have failed
to renew their bark, and the bark
and Cambium being
apparently all dead it is supposed
the trees must die, and some have
already died, the remainder are
renewing their bark satisfac-
-torily, and might probably be
scraped again in 1882 but not
before.

25. No XXIV Plot 1869 C. 20.19
acres, all shola land, all suc-
-cinubra, and pubescens except-
-ing patches of Officinalis, not barked,
splendid growth; pubescens
about 20 per cent.

26. No XXV Plot 1869 H.
9.20 acres, all shola except a
small bit of grass land, shola
soil planted with Succinubra

not barked, growth very good, grass
land planted with Officinalis all
barked.

27. No XXVI Plot 1869 I. 2.55 acres
Shola land, all succinubra of very
good growth barked 4 times.

28. No XXVII Plot 1870 A. 11.52 acres
grass land, now $\frac{2}{3}$ Officinalis, and $\frac{1}{3}$
succinubra, originally planted entirely
with succinubra which mostly
died out and was replanted in 1872-73,
the remainder of the succinubra should
be uprooted and replaced by Offi-
-cinalis or pubescens, the Officina-
-lis growth is not good owing to ex-
-posure and poverty of soil but
it will pay, not barked.

29 No XXVIII Plot 1870 B. 16.37 acres
grass land, an entire failure, up-
-rooted and abandoned and now
fitted for planting Australian
acacias for fuel.

30. No XXIX Plot 1870 C. 4.30 acres
in 3 separate blocks.
1st block grass land, Offi-
-cinalis, growth good, but too
widely planted, barked twice

2nd

2nd block, all sholá land, mixture of succulenta, officinalis, Calisaya, Javanica and anglica, not planted, growth good except the Calisaya. The anglica and shrubby Javanica of fine value.

3d block, all sholá chiefly succulenta with a few officinalis, growth good, not planted.

31. Neddivattam Buildings.

A drying House and new store have been sanctioned at Neddivattam, the work is progressing very slowly, less than 1 lakh of bricks having been made; owing to the want of this building, only a small crop can be collected this coming season.

The general condition of the buildings other than the store is good, the Lines for the Coolies are also in good order, the house now occupied by the Overseer and the one occupied by the Clerk should have an iron roof substituted for the grass one.

32. State of Neddivattam Plantations.

The Neddivattam plantations Containg shew very fine growth, and though I inspected them at the beginning of May after an unusually dry April, and at the end of a long season of drought when all the grass hills were as brown as the roads, they were in splendid condition and healthy foliage; taking into consideration the mistake

of

of too wide planting. Although they are all that could possibly be expected, and in many ways satisfactory. In planting such a large area like this Park, it is of course impossible always to avoid too great exposure, to wind, bad soil, bad drainage &c., and there are here and there failures from these causes, but this could not be otherwise, and even in many places where the ground is poor it pays well at the price we have it now realizing.

33. Fencing.

A considerable expenditure is necessary in fencing in several of the plots, if they are to be properly kept up, and the Boundaries are most troublesome, it will well pay.

34 Wide planting.

The great mistake here as elsewhere has been the wide planting, it was probably supposed that the trees would grow to a far larger size than they now promise, but even perceiving that

This

this had occurred there was the established fact that such large trees as Teak, and Eucalyptus had to be planted 6'x6' and afterward gradually thinned out otherwise good growth could not be secured, wide planting causes crooked growth and often no fair bole and gives the wind an unfair advantage. The planting was originally 12'x12', but reduced gradually afterwards down to 9'x8' and 7'x7'. I am of opinion that the planting of "Succirubra" should always be 5'x5' or certainly not more than 6'x6' and that the first thinning (alternate lines having the trees 10'x5' or 12'x6') need not take place till there would be some yield from the bark, and that at the final thinning the trees may stand 10'x10' or 12'x12'. "Officinalis" should be planted 4'x4' or perhaps even closer; ---intermediate planting is always very precarious owing to the shade, and drip of existing trees, and 25 or even 50 per Cent very often appears to fail. Throughout the plantations

One

One piece evidence of the great mis-
-take wide planting has been.

35 Is barking injurious? is not to the trees. There is certainly no proof that barking in any way affects the health of the tree. I was formerly of opinion that it did and fancied I detected it in the appearance of the trees I knew prejudiced in a way, but after most careful inspection of both barked and unbarked trees both from a distance and close, could detect no difference in foliage or any way else, and it is a fact that the trees barked 7 to 8 times, are some of the healthiest and finest in growth, foliage, and every way, even in the plantation, and that they are now flowering, and seeding luxuriantly, and that the barked trees have grown quite as well, if not better from Coppice, which shows that their root system must be quite as healthy; this is also Mr. Rowson's opinion.

Mr. Rowson thinks that the trees appear to suffer somewhat for a

month or 6 weeks after being stripped, getting somewhat yellowish in leaf, but that they rapidly recover, so that if inspected just after the barking, a prejudice might easily be entertained against the system.

Trees that have been barked several times often bear fewer branches, but this is owing to the pruning and to branches having been broken off, the foliage is just as thick as in unbarked trees.

Some trees do fail to renew their bark after being stripped, but it is very uncommon, and it is very rare to find a really healthy tree, die out from its effects.

The bark renews just as rapidly in the subsequent stripping as it does in the first, and there is no perceptible difference in its thickness, the renewal is always more rapid on rich soil than on poor. Carelessness in barking prevents immediate renewal and may cause the death of a tree.

Elevation

36. Elevation for "succinctra". The "succinctra" does not attain the same size at Neddivattam as it does in Wynad and elsewhere at lower elevations, it grows to a good height in Ecuador and on the Himalayan Ghats, at 3000 feet, it has been measured 52 feet in height at Neddivattam no trees are over 40 feet. 5000 to 6000 feet is probably too high an elevation for large growth, but it is useful (as do not know how far correctly) that the limit attained high elevations is more valuable, in any case "succinctra" for growth on shola soil at Neddivattam.

37. Longevity of "succinctra"

"succinctra" is a short lived tree, and we cannot state the age it will attain when left unbarked or when barked until the exact actual data, and a good number of embarked trees must be left for this purpose.

38. Method of harvesting. With the established fact, that the 8 times barked trees are still perfectly healthy, and that the renewed bark is far more valuable than the natural bark, it would not be advisable to adopt any other system than the present one the credit of which entirely belongs to Mr. MacIvor, and it should accordingly think be pursued, as long as the trees appear healthy, but trees showing signs of decay should be either coppiced or uprooted.

39 Coppicing.

The marginal paras* referred to, show the results of the coppicing at Neddivattam in 1879. The coppicing process was very well carried out, the stools being sawn through about 3 inches above the

* Para 7, No. V, Plot 1864 C.
" 8, No. VII, " 1864 D.
" 24, No. XXIII, " 1869 F.