CYPRUS

FOREST REPORT

1949

BY

R. R. WATERER, C.B.E., M.A.
Conservator of Forests

NICOSIA
PRINTED AT THE CYPRUS GOVERNMENT PRINTING OFFICE
1950

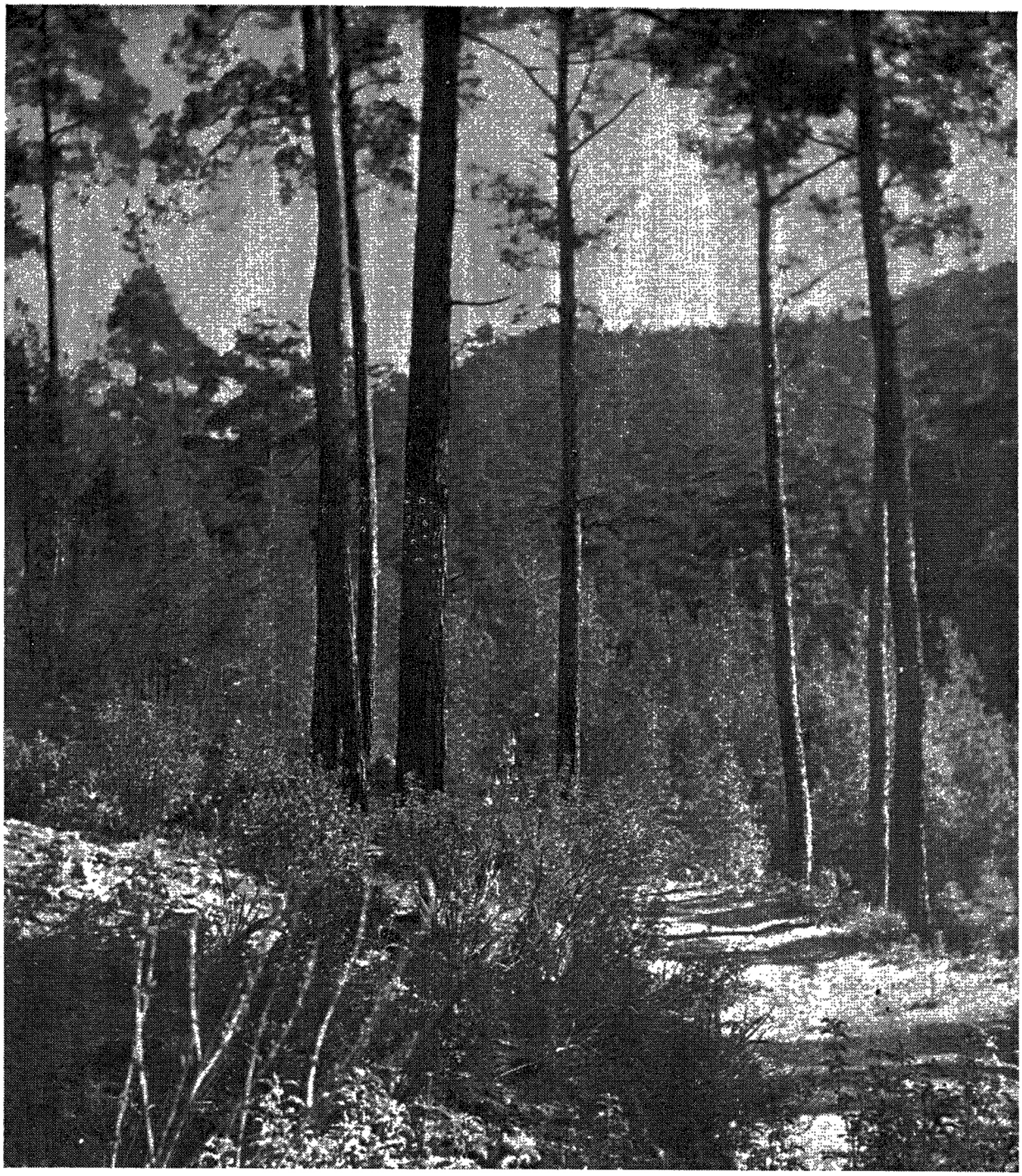
[May, 1950—400. M.P. 1434/50.]

Price 5 shillings.

CYPRUS

FOREST REPORT

1949



Typical *Pinus halepensis* forest in Paphos Forest. Trees in foreground about 100 feet high.

CONTENTS

Report of the Forest Service in Cyprus for the Year 1949.

I.—INTRODUCTION.

This report gives a general picture of the forests and of events that have occurred during 1949. As will be seen there has been no change in policy, and development has broadly followed the Ten-Year Forest Development Plan which forms a part of the Ten-Year Development Plan for Cyprus as a whole. As far as possible statistics have been kept out of the script of this report but are recorded in the appendices attached. By this means it is hoped that the report may be more readily understandable to those who do not happen to know Cyprus forests or conditions. Similarly the inclusion of information in the form of maps and illustrations may help to serve the same purpose.

2. Throughout the period under review much attention was given to strengthening and consolidating cordial relations between the Forest Service and the rural population. For many years it has been obvious that a successful forest policy in Cyprus must be one which creates a very close co-operation between the forestry service and the people, and particularly with the villagers having lands adjoining the forests. By opening up the forests with a good road system and by arranging excursions into the forests, a much better public understanding of the value of the people's forests and of the need for protecting them has been established. But even so it is a matter for regret that so much expenditure of both money and energy has still to be devoted to protective measures instead of to purely technical development as would be so much more desirable and remunerative. However, though slow, realization of the value of forests and tree crops in general is surely taking form and is cumulative in its effect. An ever growing proportion of the population do realize the need for forest protection and for reafforestation and take an active part in advising the people to protect their forests and to plant trees in their own lands. Never before has the public taken such a keen interest in their forests nor have so many trees ever been planted in private lands. This last development is transforming the appearance of wide areas of the countryside which till recently were bare of trees.

3. The Cyprus Forestry Association is an unofficial body of some thousands of members who are keen to promote a better understanding of the benefits to be derived from better forests and more tree growth throughout Cyprus. The Association is encouraged by a yearly grant of £200 from Government funds. Its main objects are to spread a knowledge of forestry, the reasons and benefits of forest conservation, and the encouragement of any form of tree planting by the public. It also acts as a distributing centre for information of interest to the public on forest and tree planting matters and so forms a most valuable link between the Forest Service and the public. The Association has taken a prominent part in the difficult pioneering work of creating public interest in trees where formerly little or none existed and deserves much wider support and recognition than it has so far received.

II.—VISITS AND CONFERENCES.

4. Mr. V. K. Maitland, Forestry Adviser to the British Middle East Office in Cairo, visited Cyprus in February and again in April for discussions on Mid-Eastern forest matters and to keep in touch with Cyprus forest development works. Mr. W. A. Robertson, Forestry Adviser and Mr. G. F. Clay, Agricultural Adviser, Colonial Office, made a joint visit to Cyprus in March and examined all aspects of Forestry and Agricultural problems affecting land use in general. Mr. S. Terezopoullos, Commissioner for Cyprus, London Office, visited Cyprus in April and toured the forests with the purpose of gaining knowledge of the facilities for visitors resulting from forest development. Mr. A. T. Semple, Animal Husbandry Branch, Food and Agriculture Organization of the United Nations, visited Cyprus in October and studied land use matters including forest development in preparation for an F.A.O. Land Use Meeting proposed to be held in Cyprus during 1950.

5. The Conservator of Forests, at the invitation of the Jordan Government, visited Jordan in April, 1949, and studied the forestry and land use problems of that country and prepared a report thereon.

6. Mr. H. Michaelides and Mr. M. Jacovides, Forest Assistants, visited Italy in the autumn of 1949 together with officers of the Department of Agriculture in order to study Italian land use and forestry methods. They were joined in that country by Mr. J. Tsiacouris and Mr. H. Middleton, Forest Rangers, who were on their way to Cyprus after having completed a two-year course in Forestry in the United Kingdom. A wide range of land use works were studied, and Italian and local methods campared, with valuable results.

III.—THE FOREST ESTATE.

(1) Topography and Climate.

7. The topography and climate of Cyprus are of great importance in their relation to forestry. The island is composed of two ranges of mountains separated by a broad plain ; the Northern Range being a narrow rocky ridge formed chiefly of limestone and rising to a maximum elevation of 3,357 feet, and the Southern Range being a group of massifs formed chiefly of igneous rocks and rising to 6,403 feet elevation. The main forest areas are mostly situated on the upper elevations of these two mountain ranges. The climate is typically Mediterranean with a winter rainfall and a long dry summer period. The rainfall is very variable and closely correlated with the topography of the island. Normal rainfall varies from about 10 inches at Morphou (100 ft. elevation) to over 40 inches at Troodos (5,750 ft. elevation). This great difference in amount of rainfall is a most important factor affecting forestry, though it is amply sufficient everywhere to support good forest crops. The natural vegetative climax is therefore forest as is known from historical records. The rivers are torrents, in high flood during times of heavy rain but with dry stony beds during summer. It is most significant, however, that the only perennial stream flows are those flowing out of the extensive forest areas on the Southern Mountains. Water is a matter of vital importance to the country and the value of the forests for the catchment, maintenance, and regulation of water supplies can hardly be over-estimated. Though the total rainfall is ample, yet its distribution

throughout the year is very uneven. This peculiarity of the climate sets severe limitations upon the scope of forestry that can be applied. Below is set out the average monthly rainfall at the three forest divisional stations and at Nicosia for comparison.

Station	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total for 1949	Last ten years average yearly total
Stavros Forest Station ..	11.77	8.07	5.29	3.55	—	—	—	—	0.92	0.09	1.18	9.57	40.44	40.06
Platania Forest Station ..	12.43	6.18	4.61	2.51	—	—	—	—	0.09	0.36	0.78	13.00	39.96	37.49
Halevga Forest Station ..	8.00	3.00	2.22	3.03	—	—	—	—	—	0.40	—	11.75	28.40	20.39
Nicosia Town ..	3.97	1.53	1.25	1.18	0.03	—	—	—	0.03	0.42	0.20	10.98	19.59	14.73

(2) Forest Area.

8. The total land area of Cyprus is 3,572 square miles which is made up as follows: 2,333 square miles are estimated to be cultivable agricultural lands, 653 square miles are estimated to be forest (of which 623 are State Forests and 30 private forests) and 586 square miles are other uncultivated lands used as grazing range. During 1949 there was a net increase in the area of the State Forests of 696 donums. The total State Forest area as on 31st December, 1949, is now computed to be 1,206,871 donums which is equal to about 623 miles or 17.46% of the total land area of Cyprus. (*Note:* 1 acre=3.025 donums). The State Forests are divided by the Forest Law into two categories for administrative purposes. The Main State Forests, which amount to about 531 square miles, as their name implies, include all the mountain catchment areas and productive forests and are under the administrative control of the Forest Department. The Minor State Forests, amounting to about 92 square miles, are mostly lowland areas of degraded forest from which the growing stock has mostly been removed by overcutting and overgrazing and which are being reclaimed, under the administrative control of the District Commissioners. The 30 square miles of private and ecclesiastical forest land are mostly in a derelict condition.

(3) Forest Boundaries.

9. The redelimitation of forest boundaries has been proceeding as opportunity allowed ever since the enactment of the 1939 Forest Law. This task entails much detailed work, for not only do all the many land claims and tiny private properties have to be examined and defined accurately on the ground, but also the actual construction of the boundary marks takes much time. All new boundary marks are of cement concrete built on solid foundations and numbered as fixed surveyed points. This work has been mostly completed for the forests of the Southern mountains. During the period under review this work was almost entirely confined to redelimiting the forest boundaries of the Northern mountains and the Karpass area. The forest boundaries in the Northern Range Division were in an extremely ill-defined condition with the result that a very large number of encroachments and land claims had arisen up to the time of the 1939 Forest Law which put a stop to such claims. There is, however, much detailed work to be done before the forest boundaries are accurately and permanently defined.

(4) Forest Survey.

10. The forest survey branch was maintained and was responsible for the maintenance and redelimitation of forest boundaries, for all survey work and record of all forest lands encroached upon, leased, or acquired during the year. Also all plans or sunprints required in the Department were prepared in the forest survey office. The Forest Surveyor and his assistants spent most of their time on field work with the redelimitation or working plan parties or in the Divisions on such duties as boundary maintenance or surveying encroachments and new roads.

IV.—FOREST PROTECTION.

(1) Unlawful Cutting.

11. In Cyprus, damage caused by man is still the greatest problem of forest protection with which the Forest Service is faced. The reasons for this are not far to seek. Cyprus is situated in a dry climatic area in which the growth of vegetation is not rapid or luxuriant. The pressure of population has already cleared tree growth from the greater part of the island, and so the remaining forests and tree crops have to withstand a very heavy pressure of demand for usage as timber and more urgently as fuel. Some idea of this ever increasing pressure of population may be gained from the fact that during the past 65 years the population has increased by 114%, and at the present rapid rate of increase it will surely double again by the end of this century. The 1946 census showed the population to be 449,490 or 126 to the square mile. The total land area to support this population is static and so it is easy to see that the only hope for the future is to make that land area far more productive per unit of area than it is at present. So far as the forests are concerned that can and is being done, similarly the forest area might with advantage be extended to include wide areas which are already derelict and unproductive. The main relief, however, must come from the re-establishment of tree crops in the village areas which have been stripped of their tree growth. This can only be done by applying what has come to be called farm forestry or the creation of a multitude of small plantations, windbreaks, and even single trees scattered on the less productive lands amongst the farm lands.

12. From the above it is clear that protection from unlawful cutting can only be brought about by providing the public with alternative timber and fuel supplies during the period required to build up the forests and tree crops of the island to full productivity. By this means alone can the public be relieved of the urge to pilfer forest produce to supply their daily needs. This is already being done by supplying imported timber and substitutes for timber and by the provision of sufficient mineral fuel to relieve the pressure on wood fuel. These subjects are dealt with under other headings of this report. These alternatives having been provided, the Forest Service has been justified in tightening protective control to punish those who continue to pilfer from the forests unlawfully. Results have proved to be very satisfactory. In the forests of the Southern mountains unlawful cutting has largely ceased and such pilfering as still goes on is negligible compared to what it was a few years ago.

Detection is now usual and offenders are often punished. In the forests of the Northern mountains and the Minor State Forests of the south-east, the position is far more difficult for these areas are near the main centres of population and are therefore very vulnerable. But even so the effects of conversion to oil fuel coupled with efficient forest patrolling and detection of forest offences has had a very great effect upon relieving the forests of the greater part of the unlawful cutting that was, till recently, so severe a strain on the forests as to cause the continual degradation of the dwindling growing stock.

13. The Village Fuel Areas are more vulnerably situated than any other forest growth, down on the fueless plains ; yet they suffer little damage. This remarkable fact is easily explained. The public as a whole have not yet understood that the State Forests are in reality the " People's Forests." The old conception of the State Forests being the property of the " Government " as distinct from the " People " still lingers and while that belief persists the State Forests are fair game for all to plunder and a feeling of " good luck to all those who can escape detection " prevails. But with the Village Fuel Areas it is very different. These plantations are established on village lands for the village. They belong demonstrably to the village and produce fuel for the villagers and revenue for the village fund. They are the communal property of the people and the village authorities protect them and guard them jealously from the hands of those who might wish to pilfer them. The protection of these plantations presents little difficulty for the Service. They do, however, provide a most interesting example of communal responsibility taking form among the inhabitants. If this sense of responsibility could be extended to the State Forests the constant problem of protection would be very largely solved and the people's forests would be safe from pilfering.

(2) Forest Grazing.

14. The effective control of grazing flocks is the key to success in forestry and the establishment of tree crops in Cyprus. Unfortunately, however, Cyprus has inherited the age-old Mid-Eastern system of animal husbandry whereby all flocks are allowed free range grazing over all categories of land irrespective of the land-owners' wishes. The shepherding minority is either landless or has insufficient land or other means of legitimate livelihood. The attraction of landless members of the cummunity into the ranks of the shepherds has produced a system of grazing that is mostly parasitic on the rest of the community. In such circumstances it is small wonder that the graziers are usually in conflict with the agriculturists owing to the damage they do. Formerly the whole forest area was subjected to grazing and browsing by the maximum numbers of sheep and goats that could be kept alive. Forest grazing has been responsible, more than any other single factor, for degrading and wasting the forests. The flocks did enormous damage but the graziers did even more than their flocks, for they fired the hills in rotation to produce better grazing within reach of their flocks. With such a past history it is no wonder that the forests were destroyed and the hills reduced to a rapid and advanced state of soil erosion.

15. Forest grazing policy has for some years been quite inflexible in that it aims at the complete eradication of all flocks from the mountain forests, but in some of the lowland forests, where the forest crop allows it, controlled sheep grazing may be permitted. Goat grazing in all classes of forest must be eradicated, for goats, by natural instinct browse, whereas sheep graze. This is a very important distinction when viewed from a forest point of view, and few forest services can have had such very unfortunate or realistic opportunities to study this point as has the Cyprus Forest Service. Forest grazing policy acknowledges, however, that the forest graziers, though only a tiny minority of the community, cannot be expected to give up the profession of their forefathers unless they are provided with an alternative form of livelihood. For the past twelve years it has therefore been the practice to pay the forest graziers fair compensation when they agree to give up forest grazing. If possible also they are employed on forest works or settled on the land as agriculturists as a safeguard for the future ; for they tend otherwise to drift back to being goatherds as soon as they become unemployed. This policy has proved to be outstandingly successful and has resulted in freeing large areas of forests from the curse of goat grazing. The removal of flocks from the forests has proved to be the soundest form of forest development yet undertaken. It has also proved to be the cheapest possible form of reafforestation, for nature quickly takes a hand to restore the forest crop once the goat flocks are removed and natural regeneration again becomes possible.

16. Up to now the forest grazing position is that in the Southern mountain forests of Paphos and Troodos Forest Divisions all forests, except Aetomoutti, Akamas and Peyia forests, have been freed of permitted grazing and all the recognized forest graziers have been paid fair compensation and have given up forest grazing under amicable arrangements. In these forests it is now a continual duty for the Forest staff to prevent new generations of goatherds from entering the forests already freed from grazing. In the mountains of the Northern Range Forest Division the battle to gain control of the forest grazing position has been fought and won at last. By the end of 1949 all permitted graziers between Komi Kebir and Panagra, with the exception of one village church committee that held a forest grazing permit in Kantara forest, had been compensated out of the forests. This remaining church committee had also consented to give up forest grazing but could not dispose of their goats within the year. The success of this campaign was an outstanding achievement that marks the turning point for the reafforestation of the Northen Range Forests. The difficulty now, as in the Southern mountains, is to prevent other graziers from entering the forests. Having shut the door it is hard to keep it shut for these forests are very vulnerable owing to their proximity to the grazing villages and to the fact that Northen Range Forests, unlike those in the Southern mountains, are in many scattered blocks with private lands between them through which the flocks may enter the forests without detection.

17. It is also an essential part of forest grazing policy that villages having lands adjoining the Main State Forests should apply the Goats Law to their village areas. This Law provides for a ballot to be held in any village at the request of the villagers whereby a straight majority of the approved voters may vote for the exclusion of free ranging flocks of goats from their village area. When such a vote takes place each family is permitted to keep up to three tethered goats to supply their essential milk requirements, but all free ranging flocks of goats whether from that village or any other village are excluded from the village area. This means that a long length of forest boundary is safe from pressure from goat flocks and it is an aim of forest policy to surround the forests with villages that have applied the Goats Law so as to create a buffer area through which free ranging goat flocks cannot approach them. A glance at the Forest Map at the back of this report will show how this works : the red areas represent those villages which have already excluded free ranging goats from their lands by voluntary vote of the majority. The application of the Goats Law is steadily being used by the villagers to free themselves from the damage suffered from free ranging flocks of goats grazing over their lands. It is slow in taking form but it is nevertheless sure for it can only come about at the request of the majority of the villagers themselves, and therefore is very much more effective than any restrictive measures which might be imposed upon the goatherds by the Service. The extent to which the Goats Law has already been applied by the villagers is perhaps not generally known but it is a matter of vital importance to forest policy, aiming as it does, at the improvement

of the State Forests and the establishment of tree crops throughout the village lands. Up to the end of 1949 two hundred and forty-three villages had applied the Goats Law out of a total of 627 villages for the whole of Cyprus. This shows that 39% of the villages, or 41% of the rural population (excluding the population of the six district towns) have already applied the Goats Law. During the year under review nine villages applied the Goats Law.

18. The Village Tree Planting Law also plays indirectly an important part in local forestry, for it provides for certain areas of the village lands to be set aside for tree planting purposes and all grazing flocks are excluded from such areas till the tree crops are established. This Law, like the Goats Law, can only be applied at the request of the villagers and so is an effective instrument in the hands of the villages wishing to establish tree crops. Up to the end of 1949 one hundred and twenty villages had applied the Village Tree Planting Law to their lands. During the year under review 6 villages which had already applied this Law reserved further areas for tree planting.

19. In Paphos Forest there are certain isolated villages whose only occupation was formerly forest grazing. These small communities of ex-goatherds have all been paid compensation for relinquishing their forest grazing privileges but are now faced with the problem of resettlement, having no suitable or sufficient land in the vicinity of their villages from which to support themselves as agriculturists. During 1948 sanction was received to move and resettle two of these communities, Dhimmata and Ay. Merkourios, on new sites where they could support themselves. For Dhimmata, a new village is being built on a site at the edge of the forest with land suitable for irrigated agriculture. During the year the construction of new Dhimmata village went on apace. The new site at Prophitis Elias, on the main road from Pomos to Polis, is State Forest land. By the end of the year the irrigation and domestic water works were mostly completed. This entailed the tapping of springs and conveyance of the waters in a main 4" pipe line laid over some 2,840 yards together with various subsidiary pipe lines of some 1,330 yards. Also the construction of three masonry storage and distribution tanks was completed. The construction of two double story and two single story houses, together with foundations for all remaining dwelling houses, school, recreation centre and stores was completed by the end of the year when building had to close down for the winter. This project is well under way and should now go forward to a satisfactory conclusion in 1950. For Ay. Merkourios village a different arrangement was agreed upon. These villagers accepted to merge into other neighbouring villages if their present lands were bought in by Government at agreed figures to provide them with sufficient capital to enable them to start up a new agricultural life outside the forest. During the year the difficult task of assessing the value of the compensation to be paid by Government for each plot was accomplished by a committee, which heard and settled all individual claims. As soon as agreement was reached all village lands were purchased for a total of £6,600, and by the end of the year all inhabitants had been satisfied and had moved out of the forest to their new homes to make a new start in life as agriculturists. It is hoped that in the next few years it will be possible to resettle the remaining ex-forest grazing communities left in the forests in a similar manner. This amicable resettlement of ex-forest grazing communities is the only possible solution for providing these people with an economic future so as to prevent them firing and pilfering the forests as has been their custom in the past.

20. The Akamas forest grazing caused considerable difficulty but by the end of 1949 it had somewhat improved. The position there is that during 1947 the long standing forest grazing problem in the Akamas and Peyia forests was amicably settled. In these lowland forests it is recognized that controlled sheep grazing may be permitted as a form of forest usage that would be provided for in the working plan. The villages concerned at present graze both goats and sheep, but a five-year period of grace up to 1952 was allowed for them to convert from goats to sheep, and thereafter to graze sheep at the density of 1 sheep to 15 donums (5 acres) of forest and in addition 1 large animal, i.e. bovine or equine to every 100 donums (33 acres) of forest. During the year it was observed that the goatherds of the neighbouring villages were not complying with the grazing settlement but were grazing goats in the lands freed from goat grazing under the Goats Law, and also were evading payment of tax by hiding their flocks in the forest caves during the counting of the flocks. These were difficulties which could only be adjusted by close co-operation with the District Administration and Police, but it is hoped that they have been adjusted sufficiently to allow the change over to sheep to take place in 1952 as arranged.

21. During the year an important change was made in the date of counting of animals for tax and record purposes. The counting of animals is not carried out by the Forest staff but the results of the counting may very greatly affect forest protection. Previously the count took place on March 1st of every year, and because it was carried out during the breeding season the law provided for all animals of less than one year old to be exempt from tax. This provided the graziers with a loop-hole for the evasion of tax and did not give a fair record of the number of animals actually grazing. During 1949 the date of counting was changed to October 1st and provision made to count every living animal on that date. This should give a more accurate and closer control than before over the numbers of animals that may be grazing in the forests. The results, as expected, showed an increase over the count held in March, 1949, but a reduction in total numbers since the 1948 count. The tendency for the total number of goats to decrease, while sheep show a corresponding increase, continued satisfactorily. The current rate of tax paid on free ranging goats is 2 shillings per head per annum, while tethered goats in villages that have applied the Goats Law are free of tax. All sheep are free of tax. The results of the animal counts for the whole of Cyprus in 1948 and 1949 are as follows :—

March, 1948 = goats 186,534	sheep 291,346	total 477,880
October, 1949 = goats 166,945	sheep 304,180	total 471,125

22. On the whole the period covered by this report has seen a great improvement in the forest grazing problem, which till comparatively recently, appeared to be insurmountable, and formed an obstacle which effectively prevented forest development. The time is not far ahead when forest grazing will have been eradicated from the mountain forests and effectively controlled in all forests. As forest grazing is controlled so does nature immediately respond with prolific natural regeneration and with an astonishing recovery of soil cover vegetation, which is so much needed to arrest soil erosion and to provide an effective catchment for surplus winter rainfall. To gain control of forest grazing has necessitated a long-fought battle with the graziers, but a policy of generous compensation for the loss of grazing privileges, followed up with future employment or resettlement, and applied with firmness of purpose and in a friendly manner has succeeded. But perhaps the most important development is that the majority of the public at last begin to realize that they suffer an enormous damage from the depredations of the tiny minority of graziers, and they are no longer prepared to tolerate such a state of affairs indefinitely. Similarly the public are beginning to realize the value of their forests and of tree crops in general and are now taking active steps to demand that the graziers be properly controlled. This is evident in many areas, but its effects are cumulative and every year improves the forest grazing position.

(3) Fire Damage.

23. The year under review was a year of light fire damage by comparison with the quite recent past when disastrous fires were an annual occurrence. During 1949 fifty forest fires occurred which burnt 1,585 donums (about 528 acres) compared to 55 fires in 1948 which burnt 862 donums. The value of the crop burnt was £5,799 and the cost of extinguishing the fires was £2,574. The value of the crop burnt is the assessed market value of the burnt material, and does not include such items as deterioration of the site from soil erosion, costs of reclamation, or loss of interest on immature growing stock destroyed, etc. It will be seen from the above figures that though the total number of fires was lower in 1949 yet the damage was greater. This was because four fires got out of control in strong winds before the staff could get sufficient labour on the spot to suppress them. Had it not been for this accident of strong wind the total damage would have been negligible.

24. The incidence of malicious firing is a fairly accurate indicator of village feeling. During 1949 there were 13 malicious fires as compared to 18 during 1948. The reasons for malicious fires are not always easy to trace. In most cases those that occurred in 1949 were caused through petty friction resulting from the detection of forest offences. The number of malicious fires compared to the total is high, but it may be that even this unfortunate fact will prove to be a blessing in disguise, for it so happened that 1949 proved to be most unusual in that a number of incendiaries were detected and convicted. One offender received a sentence of seven years imprisonment which, it is hoped, will prove to be strong deterrent to other possible incendiaries.

25. The Forest (Protection against Incendiarism) Law, which was first enacted in 1946 for the special purpose of dealing with the emergency of malicious fires, was renewed for 1949. This Law only remains in operation for a one-year period and has to be renewed if required. This Law was employed seven times in 1949. It enables the Governor to employ wide and effective powers in an emergency to deal with malicious firing. It is difficult to say how much the control and reduction of malicious firing is due to this Law, but its mode of operation is now known in the villages and the opinion is strongly held that it is an effective deterrent that has greatly reduced incendiary fires.

(4) Encroachment on Forest Land.

26. Ever since the enactment of the 1939 Forest Law, and the redelimitation of forest boundaries was put in hand the number of land encroachments has steadily been reduced. In the Paphos and Troodos Forest Divisions, where forest boundaries have been redemarcated and are now clearly shown, there are now very few encroachments and those that do occur are quickly detected and dealt with. The remaining difficulty is mostly in the Northern Range Forest Division and in the Minor State Forests where the redelimitation of boundaries is not complete. However, this matter is rapidly being overcome and land encroachment has already ceased to be a major difficulty as it was a few years ago.

(5) Climatic Damage.

27. Normally the main forest species are wind-fast but considerable storm damage took place in Adelphi forest. It sometimes happens that heavy snowfalls do much damage, particularly by collapsing dense pole crops of Pinus laricio and Pinus halepensis at the higher elevations. The winter of 1948–49 was one of heavy snowfall and considerable damage resulted. Most of the damage was confined to the upper elevation of Troodos forest. In December, 1949, quite exceptionally heavy rain fell resulting in serious flood damages. The hill forests were unaffected, but some of the lowland forests suffered heavily. At Athalassa plantation many of the contour earth banks were breached and a heavy loss of soil resulted. At Fresh Water Lake Plantation the banks all breached so that the plantation was deeply flooded. In this case the pumping engines were under water which delayed reclamation work and it is feared that much of the plantation will be drowned before the waters can be pumped out.

(6) Damage from Insects and Birds.

28. No exceptional damage was observed from the usual insect pests, such as the pine defoliating processionary caterpillar and wood and bark borers, and no protective measures, other than normal silviculture, were taken against insect pests during the year under review. Birds did very noticeable damage to the young pine sowings on the reafforested areas. This damage is done by birds either seeking to eat the seeds or by grazing off the cotyledons. Crows did great damage to the Pinus pinea sowings on the sand dune areas at Ayia Erini. The large seeds of Pinus pinea are very attractive to crows and in some cases they stripped the sown areas and caused much failure. In the case of the smaller Pinus halepensis seed this is sought by finches, mostly chaffinches, visiting Cyprus as winter migrants. If large migrations visit a sown area that is just germinating they can cause an almost complete failure. Special precautions to cover the seed and scare off birds had to be employed to save the sown areas. Both partridges and woodpigeons are fond of pine seed and also graze off the cotyledons. The stock of partridges was low so that little damage resulted. But woodpigeons visit Cyprus in large winter migrations, as do the finches, and the damage that large flocks of these birds can do quickly is very great indeed. These winter migrants are responsible for the regular failure of Pinus laricio seed at the higher elevations. During winter this seed falls on the snow where it is very conspicuous and vulnerable and is then consumed by migratory flocks of pigeons and finches.

(7) Protection of Private Forests.

29. Section 11 of the Forest Law provides for private forests to be placed under the protection of Government. Where such private forests or plantations happen to be so situated that the Forest staff can afford them protection in the ordinary course of their patrol duties, then the Forest Service may undertake to protect them. At the end of 1949 twenty-six such properties amounting to 8,731 donums (about 2,910 acres) were under the protection of the Forest Law. Now that goat grazing is no longer lawful in the forests, owners of private forests who seek the protection of the Forest Law are required to exclude goats from their forest lands as a condition of protection being undertaken. A number of applications for protection had to be refused because the properties were too far from the forests to enable the staff to provide protection effectively.

(8) Forest Offences.

30. Appendix 5 shows an analysis of all forest offences reported in 1949. Its most noticeable feature is reduction of the total number of offences by 1,067 or 18%, as compared with 1948. For this there are several reasons : First, 1949 was a good year for most agricultural crops, which provided a satisfactory rural economy. Second, oil fuels were plentiful even if expensive. This basic improvement in conditions was reinforced by a measure of forest protection probably more effective than ever before which led to the increased detection of offenders. At the other end of the protective machine legal and court work afforded increased deterrent. These influences thus brought to the forests some much needed relief in which to rebuild their depleted growing stock.

V.—FOREST MANAGEMENT.

(1) Forest Policy.

31. A written declaration of the Cyprus Government's long-term forest policy, such as has been published in other afforested British territories, has been prepared. The aims of forest management as defined departmentally in 1938 are set out below in the order of importance attached to them.

First : To establish and maintain a fully stocked forest vegetative cover to provide complete protection of the steep hillsides from erosion ; also to provide and maintain rain water catchment at the highest level of efficiency possible to prevent flood damage and to preserve surplus winter waters for domestic purposes and for irrigation during spring and summer.

Second : To exploit to the utmost the value of the forests as national amenity or park areas for the development of national recreation and health and the expansion of the tourist industry.

Third : To provide and maintain the maximum yields of timber, fuel, charcoal and other forest products on the basis of regular sustained yields, and by this means to support the various local industries working and consuming forest products.

Fourth : To provide regular employment and part-time livelihood for the maximum number of forest workers residing mostly in the villages surrounding the forests. If thus provided for, forest villages cause few fires and little pilfering.

Fifth : To provide money returns in the form of revenues for the State.

(2) Working Plans.

32. During the year the Working Plans Section concentrated its activity upon preparing working plans for the Northern Range group of forests. These areas are the only remaining mountain forests which have not yet been brought under working-plan management. Revision work was also done in some other forests.

(3) Forest Roads.

33. During 1949 the road construction programmes in Troodos and Paphos Divisions were completed with the exception of short lengths remaining for improvement, bridge construction and so forth. The main effort in road construction has now shifted to the Northern Range Division. During the year the Kykko–Alonoudhi, Yialia–Phinokli, Lythrodhonda–Kambiou, and Spilia–Kyperounda roads were completed. Also much work was done on the Kantara–Halevga road and about a mile of road from Kythrea towards Pileri was roughly opened. In all about 22¾ miles of new roads were constructed at a total cost of £18,705 or about £822 a mile. In addition 377½ miles of existing roads were maintained in good condition and were improved in some sectors.

34. Most of the road work done was on the Kantara–Halevga road. During the year the whole length from Kantara Castle to the asphalt road near Mersiniki forest station in the Lefkoniko pass was made passable, although it was not completed and opened to general traffic. A major obstacle was the cliffs above Mersiniki where construction was held up for most of the year, much rock drilling and use of explosives being necessary. Considerable work was also done on the Halevga–Trypimeni section of this road. In spite of the formidable obstacles presented by much solid rock the costs of this road appeared to be averaging about £570 a mile. This low figure was only made possible by mechanising as much as possible of the work.

35. In the spring the Department received two D6 Caterpillar tractors fitted with bulldozers and a new Wilson compressor rock drill. This reinforcement of machinery enabled road construction widening to be speeded up and costs to be greatly reduced. This machinery will quickly pay for itself in reduced costs and will allow more work to be done than had been expected. All wooden bridges are being replaced as they need repair by steel and concrete ones which have been found cheaper in the long run.

(4) Transport.

36. The Forest Department is unlike most Departments in that its main work lies and most of its staff lives in forests far from the towns where transport can be easily hired. It is therefore difficult and uneconomic to use hired transport. The principle has been accepted that the Forest Department must own and operate its own vehicles for the quick transport of materials and staff.

37. During 1949, 35 vehicles were on the road including 5 Thornycroft diesel heavy trucks, 5 light 15 cwt. trucks, 7 staff utility cars, and 18 motor cycles. These vehicles ran a total distance of 207,585 miles at an average inclusive cost of 4½ piastres. During 1948 the equivalent figures were 162,657 miles at 4½ piastres. (9 piastres= 12 pence). All vehicles were maintained departmentally except for major repairs which were done by the P.W.D.

(5) Buildings.

38. During the year the following were the main new buildings completed. The A.C.F.'s quarters at Platania, a Canteen and Bakery at Stavros, and a Forest Guard's station at Limassol Marsh. Several minor buildings, such as engine houses, were also erected. Major repairs were made to several of the old and badly built buildings. The most important of these were the Conservator's station at Troodos, Amiandos station, and Dhiorios Forester's station. All other buildings were maintained as well as the funds available would allow. At the end of the year Athalassa forest station, which had been requisitioned for use by the R.A.F. during the war, was handed back to the Department.

(6) Forest Telephones.

39. The forest telephone system was maintained for the purpose of fire detection and general control. During the year it was considerably improved and was increased by 117 miles of extension, 1 exchange and 20 instruments. By the end of 1949 the system consisted of 651 miles of lines, 7 exchanges and 119 instruments. The most important extensions were those in the Northern Range Division where ten forest stations and villages between Halevga and Kantara were connected as a parallel development to the construction of the new road between those points.

40. Owing to the short life and expensive maintenance of wooden poles, it was decided to make a major change and replace them as they become rotten with reinforced concrete poles. All new poles will also be concrete. There is no plant in Cyprus for preserving the full length of wooden poles, and so only the butts had been preserved by the hot and cold method of creosoting. The concrete poles are cast departmentally and appear to be very satisfactory. This change will effect a large economy in expenditure of both time and money in a few years when it has been completed. During the year 972 concrete poles were made of which 672 were planted.

(7) Water Supplies.

41. The supply of water for the use of the community is a main object of forest policy. Besides supplying all the needs of the forest stations, the forests provide a considerable amount of water for the public in the form of direct supplies. The indirect supplies cannot be assessed. 28 villages obtain their domestic water supplies direct from sources inside the forests. Also about 85 villages made use of irrigation water from the forests in the form of spring and summer stream flows other than spate waters at time of heavy rains. Piped water supplies to forest stations were improved and four stations received new piped supplies.

(8) Land Leases.

42. It is the Department's policy that the forests should be used for forest crops and not leased out for cultivation or other purposes if that can be avoided. At the end of 1949 there were 247 separate leases in the Main State Forests for a total of 1,442 donums, for which a total rental of £262 was received. Rents are nominal and these leases are no more than a nuisance that cannot be entirely avoided. In addition there were 1,054 separate leases in Minor State Forests for a total of 9,441 donums; from these leases £831 was received in rents.

VI.—EXPLOITATION.

(1) Timber Markets and Prices.

43. All the timber produced in Cyprus is consumed within the island, and in addition a large quantity of timber has to be imported. The export of Cyprus timber is therefore normally prohibited. Throughout 1949 there was keen demand for all classes of Cyprus timber, auctions of standing timber were well attended and prices were high although they tended to fall during the year. By the end of 1949 Cyprus pine was selling as standing timber for about 1/3 piastres a cubic foot, Whole Stem Volume Overbark. As sawn timber Cyprus pine was selling for about 7 shillings a cubic foot at the merchants stores in the towns. Hardwoods of Plane and Alder also sold well and their prices were about 1/3 piastres a cubic foot Whole Stem Volume Overbark or 8 shillings a cubic foot for sawn timber in the towns. The main commercial timber in Cyprus is Aleppo pine (Pinus halepensis), and to a less extent Troodos pine (Pinus laricio), both of which yield good constructional timbers of the heavy, resinous, red-pine type. The hardwoods are mostly Plane (Platanus orientalis) and Alder (Alnus orientalis) which find a fair local market for furniture and many other purposes. Also Golden Oak (Quercus alnifolia) and Arbutus (Arbutus andrachne) are extensively coppiced for small sized timber, fuel and charcoal.

(2) Timber Yields.

44. The total output of timber from the State Forests during 1949 was 474,615 cubic feet, measured as Whole Stem Volume Overbark. The amount cut was again well below the calculated sustained yield from the State Forests in their present condition. The reason was that every effort is being made to balance the excess fellings of the war period by equivalent under-fellings during the post-war period in order to return to normal yields as soon as possible. For comparison the total yield felled in 1938, which was about normal, was 903,793 cubic feet. At the present rate of savings on the annual yields, it is hoped, if all goes well, to have balanced the deficit by the end of 1952. If in fact that can be accomplished, it will have been a creditable performance. An important fact, seldom understood by those who are quick to criticise forest policy on the grounds of the small yield from the State Forests, is the condition of the growing stock. The Cyprus forests have suffered long centuries of every sort of abuse that could wipe out forest growth. It is not therefore surprising that only about one-fifth of the total area is now productive. From that one-fifth have to come all the yields and forest revenues for the whole island. The remaining four-fifths are not yet productive and have to be carefully protected and nursed back to a state of production. To achieve this, costly overhead expenses of maintenance and protection have to be met and large sums of capital have to be sunk in reafforestation works. This steady build-up of the growing stock takes long years of patient work, which impatient critics would do well to remember. Viewed in this light the forests are by no means so unproductive of yields or revenue as may sometimes be thought. For the class of forests that the dry climate of Cyprus can support, the present rate of building up the growing stock and of reafforesting the unproductive areas is very rapid indeed.

(3) Timber Imports and Duties.

45. Cyprus is a timber importing country and must continue to be so for many years yet until the growing stock reaches a state of productivity. It is a vital part of forest policy to ensure that sufficient quantities of imported timber are available while the forests are being built up. During the period under review timber imports have been sufficient to meet the demand, though prices to the consumer have been very high. The price of imported soft woods at the end of 1949 was about 11 shillings a cubic foot for sawn timber retailed in the towns. During 1949, 775,828 cubic feet of timber were imported. Prices of imported timber were lower in 1949 than in 1948.

46. The rates of duty on imported timber and the classes of timber that are exempt from import duty are as follows :—

Rate of Import Duty on Imported Timber.

Description	Unit	Preferential Tariff	General Tariff
(*a*) Planks, boards, logs, beams and rafters of mahogany, walnut, oak, teak and beech ..	*ad valorem*	20%	30%
(*b*) Other planks, boards, logs, beams, rafters and poles	,,	3%	4½%
(*c*) Plywood	,,	20%	30%
(*d*) Other, not otherwise specified	,,	20%	30%

Exemption from Import Duty.

Exemption from import duty is allowed on the following categories of timber :—

(*a*) Sawn and round timber of any dimension imported solely for use underground in any mine of the importer.

(*b*) Timber imported into the Colony ready-cut to size for the purpose of being used for the making of cases for packing fruit, vegetable or eggs.

(c) Timber imported into the Colony for the purpose of being used for the making of cases for the packing of goods which are the produce of the Colony for export, not being timber imported into the Colony ready-cut to size for the purpose of being used for the making of cases for packing fruit, vegetable or eggs.

The exemptions from import duty are made purposely to relieve pressure on the forests for classes of timber that cannot be produced in sufficient quantities. For example, the mines are the largest single consumers of timber in Cyprus, and their requirements are largely in the form of pit props; every encouragement is given to import this class of timber which the forests cannot yet produce in sufficient quantities. By the end of 1947 all the war-time restrictions on the use of timber had been abolished, and since the end of 1948 the responsibility for controlling imports of timber had been handed over to the Supplies Department.

(4) Wood Fuel and Charcoal.

47. The main pressure on the forests and tree growth of the island is to supply fuel rather than timber. The supplies of fuel in the form of both wood fuel and charcoal are continually inadequate to meet the pressing demand. It was for this reason that conversion to oil fuel had to be applied and that the Fuel and Charcoal Control Branch of the Forest Department had to be set up during the war. At the end of 1948 the Fuel and Charcoal Control Branch, which also controlled oil fuels and the oil conversion organization, was transferred from the Forest Department to the Supplies Department.

48. During 1949 the use of wood fuel was restricted by war-time regulations which compelled certain defined classes of industry and commerce to use mineral fuel. Otherwise the use of wood fuel was free from control. Government maintained fuel dumps at Nicosia, Ay. Nikolaos (Paphos), Morphou, and Prodhromos, but these were kept only to meet urgent demands and as a check on high prices. As the stocks in these dumps are exhausted they will not be replenished, and so the retail of wood fuel by Government will shortly cease. For charcoal, however, there was acute shortage and demand in the early months of 1949, mainly owing to there being inadequate supplies of oil fuel at that time. Consequently every effort had to be made to replenish supplies of charcoal both from Cyprus sources and by importation. It was also necessary for Government, through its Department of Supplies, to continue to be the sole retailer of charcoal. But in the spring of 1949 when oil supplies became plentiful the demand for charcoal slackened, which allowed charcoal to be decontrolled in all areas except in the four main towns of Nicosia, Famagusta, Larnaca and Limassol. It is hoped to decontrol charcoal entirely early in 1950. Some idea of the relief to the demand for wood fuel may be got from the fact that the present consumption is estimated at about 58,000 tons a year as compared with about 220,000 tons a year, before conversion to oil fuel. The production of wood fuel from the Main State Forests as fuel fellings amounted to 31,147 tons in 1949. It is clear that in general the wood fuel resources of Cyprus cannot possibly continue to supply the quantities demanded and the only hope for the future is to use mineral fuel and electricity far more than has yet been possible. This should provide relief and breathing space long enough to enable the forests to recover and to allow tree crops to be established in village lands all over Cyprus.

(5) Ploughwood, Cartwood and Trough Making.

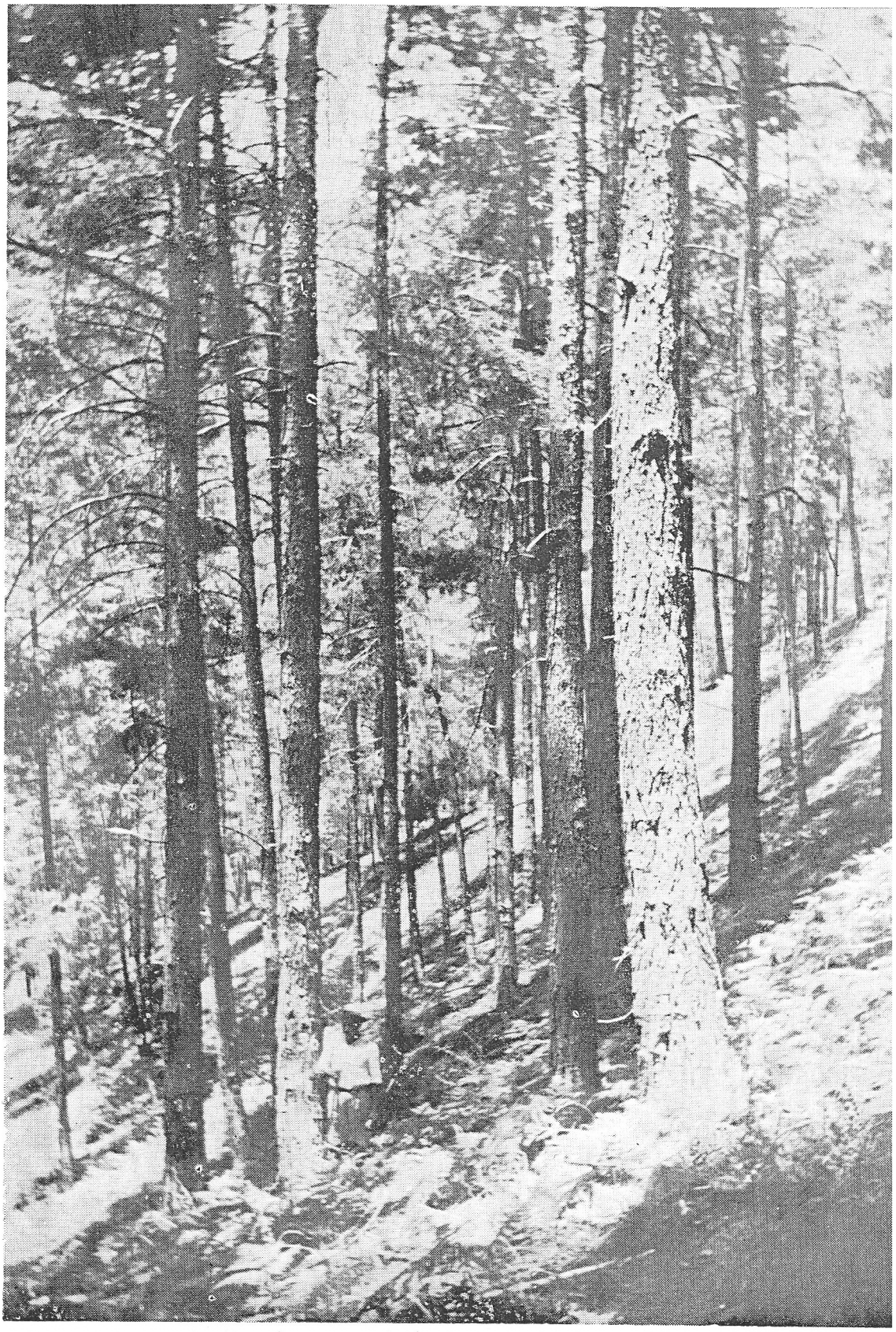
49. In Cyprus a number of farm implements are normally supplied from specially shaped timbers. Wooden ploughs, cart-wheels, handles, etc., are fashioned from suitably shaped stems of Golden Oak (Quercus alnifolia). Chairs are generally made from Arbutus or Plane. Such material is selected from the coppice fellings. During 1949, 13,177 cubic feet of timber was used for those purposes.

50. Wooden troughs, fashioned like dug-outs in a single piece from pine logs, continued to be in keen demand for general household utensils. This peculiar local industry is confined to one village only, Moutoullas, and the trough makers from that village bid keenly for trees of the right size and shape. It often happens that trees that are unsound with heart rot fetch good prices for this special purpose, so though it is a wasteful use of timber yet the trough makers serve a useful purpose and are always welcome at auctions of standing trees.

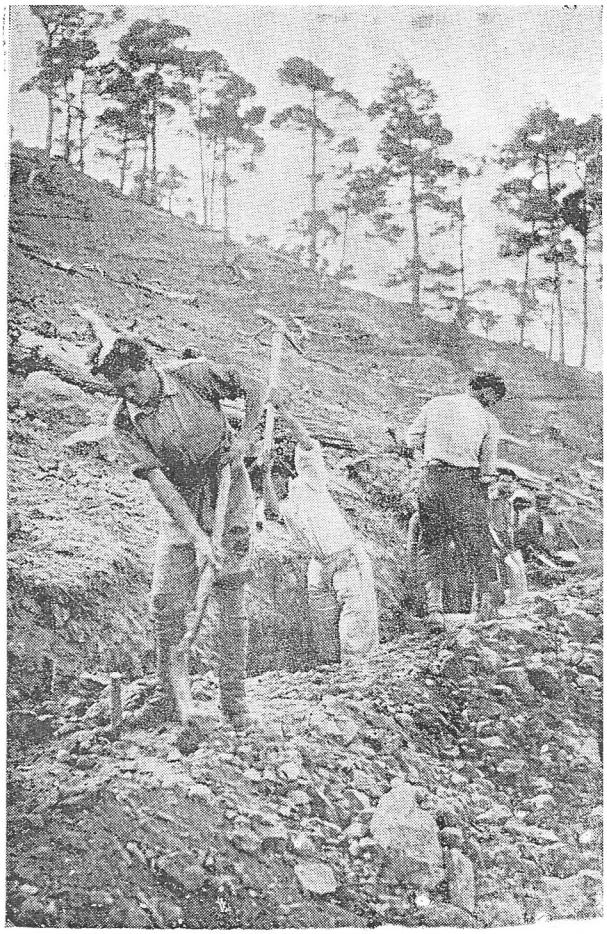
(6) Wild Fruit Trees.

51. The forests contain many wild olive, carob and hawthorn trees and in some forests these species form an important part of the crop. Unfortunately, experience has shown that the presence of these species in the main hill forests is a constant source of trouble, since it is the custom to graft such trees surreptitiously and afterwards to claim ownership of the grafted trees standing in the forests. In the past this was done extensively, with the result that thousands of privately owned or claimed fruit trees are now found in the forests occupying the best localities; needless to say, any forest trees which grow near enough to cast shade upon such grafted trees are ringed by the owners or claimants. These difficulties necessitated the exclusion of these species from the main forests as far as was possible. There is, however, a very keen demand for wild grafting stocks from the forests, particularly of olives, for transplantation into private village lands, and in order to assist the public no charge is made for grafting stocks uprooted and removed from the forests for this purpose. The public is also encouraged to uproot and remove the grafted trees from the forests and to transplant them into their own properties.

52. The amount of the assistance given to the public in pursuance of the policy of encouraging tree crops in private lands may be estimated from the following figures. The total recorded number of grafting stocks removed from the forests in 1949 was 61,358, being 49,358 from Main State Forests and 12,000 from Minor State Forests. In many areas the tall and stout wild forest stocks are preferred, for not only do they grow quickly when transferred into deep rich soil, but also, and perhaps most important, they are of a sufficient size to allow budding to be done well out of reach of grazing animals. This latter quality is a very real advantage in the many villages in which free range grazing is still allowed. It is, therefore, the policy to supply the public with the maximum number of stocks possible from the forests free of charge. In those forests where grazing is excluded a rapid regrowth of root suckers results from the broken root ends where the wild trees have been uprooted. These shoots form excellent grafting stocks for the future, but they cannot get up unless grazing is excluded, for olive is very heavily grazed and all regrowth is cushioned if grazing is present. Many forest areas, as for example the Northern Range Forests, contain very great quantities of wild olives which have remained useless for grafting stocks until grazing could be excluded. This is a further advantage to the public resulting from excluding grazing from the forests. The regrowth of wild olive is now most spectacular in all forests freed from grazing.



No. 1.—Middle-aged crop of *Pinus halepensis* (variety brutia) in Paphos Forest.

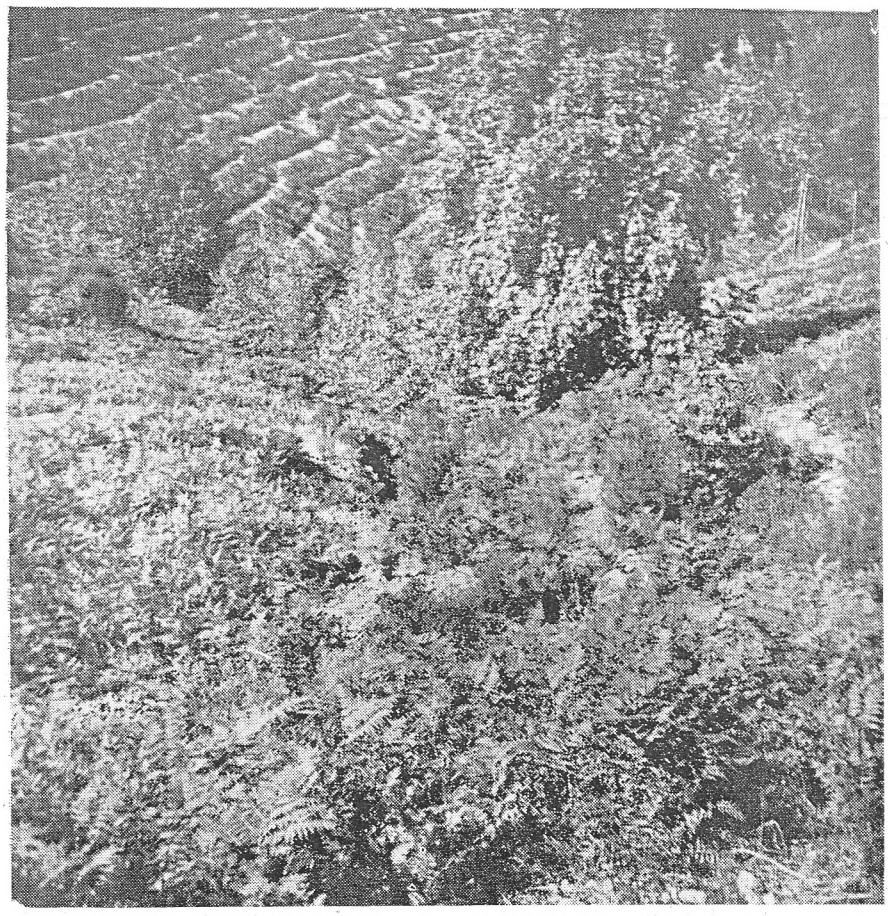


No. 2.—Lithari fired area "Before". Showing construction of gradoni before reseeding. *Pinus halepensis* in background.

No. 3.—Lithari fired area "After". Showing same scene 8 years after reseeding to *Pinus halepensis*.

No. 4.—A fired area treated with gradoni and reseeded. Note run off and soil movement completely stabilised.

No. 5.—Lithari fired area "Before". Eroded and dereliot condition resulting from goat grazing 10 years after the fire.



No. 6.—Lithari fired area "After". Stabilised and improving condition 7 years after treatment and the removal of goat grazing. Note the plane trees are the same in both photos, also artificial pine regeneration coming through the bracken.

No. 7.—*Pinus laricio* crop, Troodos forest, at 5,600 feet elevation. Large tree is 13 feet 6 inches girth. Note the two black spaniels sitting at base of tree for comparison, also patches of snow and open type of forest resulting from past fires and grazing.

No. 8.—Typical riverine forest of *Platanus orientalis* in the Platys valley of Paphos Forest.

(7) Minor Forest Produce.

53. Sales under this item of exploitation yielded £1,120 in 1949 as compared with £1,991 in 1948. A main item is the harvest from origanum for the extraction of origanum oil. This plant grows mostly in Paphos Forest and it has been observed that the volume of this crop has greatly increased since that forest has been closed to grazing. There are a number of forest plants yielding marketable essential oils and it is hoped to develop the production of these oils as small cottage industries in the forest villages thus providing an additional source of income and employment for the villagers. Unfortunately, owing to synthetic substitutes, origanum and other essential oils are now difficult to market at remunerative prices. The production and export of forest tree seeds to neighbouring countries has become a yearly demand. This is mostly based upon the excellence of the local type of Pinus halepensis, variety Brutia, which grows naturally in Cyprus. Territories which do not naturally produce the variety Brutia, such as Palestine and Jordan, or those which do not produce it in sufficient quantity, are anxious to obtain Cyprus seed.

(8) Agency of Exploitation.

54. Experience has shown that the Government cannot operate as flexibly, economically, or efficiently as private enterprise in handling and marketing forest products. It is therefore the normal policy of the Department to provide the maximum quantities of forest produce as sustained yields of raw materials, but not to engage in the commercial business of extracting, processing or marketing those raw materials. Thus, with the exception of certain produce worked out from fired areas, all exploitation is in the hands of private enterprise. All forest produce was sold by auction, tender, or fixed prices, the latter method being employed only for certain small quantities of produce which it was found inconvenient to sell by tender or auction. All timber and coppice, except that from burnt areas, was sold standing in the forests. There are ample numbers of skilled contractors and forest workers to undertake the whole of the exploitation side of forest yields. Such work is done by contracts which provide for the Forest Department to retain complete control of supervision so as to ensure the protection of the remaining crop while the work is in progress. Fired areas are usually worked out departmentally in order to remove the temptation to fire the forests in order to provide future profits. This unfortunately was done extensively in the past and resulted in enormous damage to the forests.

(9) Sawmills and Utilization.

55. In pursuance of the policy of putting exploitation work in the hands of private enterprise, only one Government saw mill, that at Kambos, is retained. This mill is operated at present either directly by the Forest Department or under lease to contractors, as may be most expedient. The purpose in retaining this mill is to supply Government requirements and as a check on saw milling charges. Persons who do not operate their own mill may thus have the use of a mill at reasonable rates for converting standing timber purchased in the forests. The reduction of saw mills in recent years has resulted in considerable economy, for the mills were old and maintenance was expensive.

56. Cyprus is now well equipped with a sufficient quantity of wood-working machinery, operated privately, to handle the yields of forest produce. All that is needed now is for certain classes of modern machinery for processing timber mechanically to be introduced in order to economise timber and to provide products of standard quality. The Government mill at Kambos has been modernized by conversion from a circular saw to a band saw ; this results in a considerable economy of timber and increased efficiency. Cyprus is, however, not a country that wastes very much of its forest produce. In most cases the entire tree is utilized. The pressure for fuel is so acute that after all convertable timber has been taken out, and a Cypriot sawyer does not leave much behind, the remainder, including the branch and brushwood, bark, sawdust and often the stump as well, is saleable as fuel if these otherwise waste products happen to be in an accessible position.

VII.—SILVICULTURE.

(1) Silvicultural Systems.

57. Most of the forests of Cyprus are hill forests serving in a dry climate the vital role of catchment or protection forests preventing rain-water run off and soil erosion. It is, therefore, a primary necessity to maintain a permanent forest cover and that the silvicultural systems of management must not allow extensive clear fellings or excessive fellings of any kind. In the main hill forests there are two principal types of forest crop which may be briefly described as coniferous high forest and broad leafed coppice forest. These two types of forest crop may be found either separately or mixed together, according to altitude and locality. The coniferous high forest is worked on the selection system or on modifications of that system. The fellings might correctly be described as selective improvement fellings. Mature or defective trees are removed in order to promote natural regeneration and to build up the growing stock to normal full stocking. The broad leafed coppice forest may form pure coppice forest or an understory to the coniferous high forest. In either case it forms a dense and most effective soil cover which is normally worked selectively according to the diameter of the stems. Experiments are, however, being carried out to ascertain whether it might not be permissible and desirable to clear fell coppice hill forest, since clear felling produces better quality and more rapid regrowth. In the lowland plantations, where protection of the site from soil erosion may not be such a necessity, it is the practice to clear fell compartments of acacia and eucalyptus. This management has been found to promote the best regrowth from the coppice stools of these species, and regrowth is sufficiently rapid to allow of it being safely applied even on sand-dunes.

(2) Natural Regeneration.

58. Owing to the necessity of maintaining a cover crop over the hills and to the selective system of working the hill forests, by far the most important means of restocking the forests is by natural regeneration. Generally speaking the whole of the hill forests are permanently under regeneration and it is this fact, above all others, that makes it essential to exclude grazing from such forests. The indigenous forest species regenerate themselves remarkably well considering the adverse summer climate. Every year a promising flush of natural seedlings may be seen at the beginning of the summer, but by November most have succumbed to excessive soil and air temperatures, if not to actual drought. This is particularly so on southern aspects and on sites where no side shade is available to give some protection. Much depends upon the abundance of seed and upon the weather. When late spring rains and early autumn rains occur the effects of the summer drought are much reduced. It is clear therefore that the distribution of rainfall is far more important than the total depth of rainfall. For example, 1948 was a year of moderate rainfall but the mortality of forest seedlings was quite exceptional because the dry summer weather was much prolonged into the autumn when seedlings could least withstand drought. The mortality was not only of one year seedlings but also of seedlings that had already withstood several summers.

59. It has been found that natural regeneration under the parent crop of Aleppo pine (Pinus halepensis var. brutia), which forms by far the greater part of the coniferous crop, is very slow. This is perhaps the more surprising since it is a most prolific producer of seed. It is, however, a strong light demander and it seems that to obtain good regeneration the cover crop must be opened more than may be prudent from a protective point of view. Experiments are being made to find the means of meeting this difficulty and it may be that the silvicultural system might have to be modified in order to hasten regeneration.

60. With Troodos pine (Pinus laricio) the position is quite different. Here again natural regeneration is very slow but the main difficulty is irregular and insufficient production of fertile seed. This species is a shade bearer and regenerates best under a moderate crown canopy, where in favourable sites it forms dense groups of regrowth. It is, however, unlike Aleppo pine, extremely difficult to establish on places that do not provide top or side shade and is, therefore, a very hard species to re-establish on fired areas once the crop has been cleared and the site has deteriorated in consequence.

61. The indigenous cedar (Cedrus brevifolia) is being extended in Paphos Forest by all means that can be given to assist its regeneration. In this case, as with Troodos pine, the chief obstacle is insufficient seed production. It is a light demander that cannot regenerate easily in competition with other species, so local silviculture is modified to favour cedar wherever that is required.

62. In the northern mountain forests Cypress (Cupressus sempervirens) is slow to establish on areas that have been stripped of their forest cover, and particularly is that so on southern aspects. But it is a prolific seed producer and being a fair shade bearer it regenerates well under the light shade cover of Aleppo pine crops.

63. With the exception of Plane (Platanus orientalis) and Alder (Alnus orientalis) which regenerate freely in the valley bottoms and moist places, other broad leafed species regenerate very slowly indeed.

(3) Artificial Regeneration.

64. For some years the Forest Department has been very actively engaged upon a large programme of reafforestation financed from the Colonial Development Fund. A great amount of productive work has already been done and it continued uninterrupted through 1949. Artificial regeneration is in two main forms in Cyprus. First, and perhaps most important, is the reafforestation of the protective forests on the hills, and second the establishment of lowland plantations of quick growing species to relieve the pressure on the main hill forests.

65. The reafforestation of the hill forests is mostly left to natural regeneration wherever there are sufficient parent trees left to provide seed enough to regenerate the hillsides, but many areas are so depleted of their forest crop from past fires, overgrazing and overexploitation, that artificial regeneration is necessary to re-establish the forest crop. On fired or grazed out areas, the surface is usually in a state of rapid soil erosion. Overgrazing reduces forest land to a condition as derelict as that resulting from fire, and the treatment required to reclaim such damage is precisely the same. The technique of reclaiming these fired and grazed out areas has been built up after long experience of trials based on successful results. The system of working consists of stabilizing the surface in such a way as to prevent all rain-water run off and soil erosion and simultaneously to reseed the area to a coniferous crop. The whole work is carried out strictly on the contour and proceeds from the top of the slope to the bottom. Stabilizing earth works vary in intensity according to the angle of slope, the vegetative cover, degree of erosion, volume of rainfall to be retained and so forth. It is therefore impossible to lay down any rules, for it must vary with the conditions existing at each locality. In most cases earth works entail the construction of gradoni or contour trenches together with gully plugging and contour strip cultivations which are sown broadcast with Aleppo pine seed. Provided reasonably good climatic conditions prevail such reclamation and reseeding works are outstandingly successful and represent the customary form of artificial reafforestation applied in the hill forests. Very seldom is planting used in the hill forests for it is subject to very heavy mortality during summer drought and the costs per unit of area are very much higher than reseeding.

66. It has constantly been the purpose of the Forest Department to provide the public with the maximum results in square miles at the minimum cost per unit of area. In spite of labour costs having risen more than 300% since this work was started about ten years ago the Department has been able so to improve and perfect its mode of working that costings have steadily decreased till to-day such reafforestation works, inclusive of all earth works, cost of seed and reseeding, etc., cost on the average £3 a donum or £9 an acre. Areas treated and reafforested by this process amounted to about 3,980 donums in 1949. Stone wall terracing and planting is too expensive to be practicable and so is only applied to very small areas requiring special treatment. By contrast the costs of such work may vary between £20 to £50 a donum (3 donums=1 acre).

67. The establishment of lowland plantations is divided into those that are established as lowland State Forests and those that are established as Village Fuel Areas. The latter are dealt with under a separate chapter. Lowland forest plantations are established mainly to supply fuel, to fix shifting sands, to drain malarial swamps or for a combination of these purposes. The main concentration of effort in this respect was at Ayia Erini, where extensive coastal dunes are being fixed and brought under a remunerative forest crop, and at the Fresh Water Lake near Famagusta where a saline swamp depression is being reclaimed to a forest crop. These works are accomplished by a combination of planting and direct sowing. The sand-dunes are being fixed with Acacia (Acacia cyanophylla) and Stone pine (Pinus pinea). The saline swamp is being afforested with the same species of Acacia and Eucalyptus (Eucalyptus gomphocephalon is mostly used for this purpose). Other lowland forest plantations are also being extended. The costs of this work have been considerably reduced since a technique of deep planting for Acacia and surface cultivation for all species has eliminated the need for watering during summer months, which formerly made this work extremely costly and liable to failure.

(4) Forest Nurseries.

68. From the above description of reafforestation works it will be seen that very little nursery work is required for the hill forests which are almost entirely regenerated by direct seeding. Small nurseries are, however, maintained at two of the Divisional Forest Stations, at Stavros and Platania. All the lowland nurseries, in which the main production of plants takes place, were under the Plains Division organization. During 1949 five lowland nurseries were maintained in which were raised a total of about 1,762,000 plants, including some 185,000 left over from 1948 ; of these 288,000 were disposed of to the public and 103,000 were used for Government plantations. Owing to the late rains in 1949, 1,371,000 were left in the nurseries for use early in 1950. During 1948 the outturn from the nurseries was about 1,320,000 plants of which 930,000 were supplied to the public. It is anticipated that well over a million plants will be needed for private tree planting during the 1949–50 season. The demand for nursery plants is a direct measure of the growth of the tree planting movement, which it is hoped will ultimately afford a relief to the pressure on the main hill forests. Each successive year the outturn of plants has been increased, and yet as surely each year has resulted in a shortage of plants. Plans are now in hand for a greatly increased production.

(5) Seed Collection.

69. Insufficient supply of seed, as in the case of nursery stock, may be a very real limitation on the scope of reafforestation works that can be undertaken. With some species, as for example Cedar and Troodos pine, the total natural production of seed is always inadequate to meet the requirements. With other species such as Aleppo pine, Cypress, Acacia and Eucalyptus the natural production is normally ample, but the seed collection organization may be inadequate to maintain sufficient supplies. This has tended to be so since some neighbouring countries have sought to obtain their seed requirements from Cyprus. 1949 was a good seed year and sufficient seed of all kinds was collected. About 17 tons of seed was collected of which about 4½ tons was exported.

VIII.—VILLAGE FUEL AREAS.

70. By the end of 1949 the village fuel areas numbered 90 and their total area amounted to some 17,418 donums (about 5,758 acres). During the year work was done in 76 village fuel areas and 3,940 donums were treated. 907 donums were sown with 374 okes of seed (1 oke=2.8 lbs.) and 1,466 donums planted with 125,480 plants. The total cost of these afforestation works was £3,717 or slightly less than £1 a donum. The village fuel area organization forms a separate Forest Division, known as the Plains Division, based on Nicosia and is steadily growing at the request of the villages. It has been financed from Colonial Development Funds, and its purpose is to relieve pressure for wood fuel from the hill forests. It is in fact an indirect way of reafforesting the hill forests, for by creating fuel plantations at the villages on the fueless plains, a very considerable burden is taken off the hill forests and thus a much needed rest period is provided in which the forests may recover. It is obvious, of course, that the total area of the village fuel plantations could not possibly yield sufficient quantities of fuel to maintain the villages they serve in fuel supplies. But they serve another, perhaps even more important, purpose : They demonstrate to the villages that derelict lands, which at present produce nothing, can easily be made productive and remunerative by planting tree crops. This example is a very real and important stimulus to villagers to plant trees on their own lands and has been widely followed. It is this private interest and development in tree planting that is slowly but surely changing the scenery of Cyprus from treelessness to tree crops. It is also, of course, the aggregate effect of tree crops in the village lands that is relieving the pressure on the forests, rather than the actual village fuel areas, themselves.

71. The creation and operation of the village fuel areas is based upon requests from the villages and upon the co-operation and willingness of the people to establish and maintain such plantations in their village lands. It is upon this foundation that the strength and success of the movement depends. The villages now realize that such plantations are a considerable asset, for in the first place the establishment charges are met by Government and they provide labour for the village. Thereafter the produce goes to the village at cheap rates and the money they pay for it, their money, goes into a village fund for public improvements in their own village. The ownership of these plantations is vested in the village so that the people feel they have a very real share in the success of the scheme. They are in fact communal forests, and the people respect them as their own property. They belong to the people and the people look after them through their own village organizations. The Forest staff are almost entirely relieved of what would otherwise be an impossible duty of providing protection for these plantations, and confine themselves to providing technical supervision and control. These are the reasons why these plantations although situated in the most vulnerable positions are yet safe from pilfering and destruction without any protective fencing or guards looking after them.

72. The lands on which these plantations have to be established are in most cases, by necessity, extremely poor and barren. They are generally vacant waste lands that are unsuitable for cultivation, and even for forest purposes would ordinarily be regarded as of low productivity. But even so, experience has shown that with the right species and technique, these lands can be made productive and in fact many astonishingly successful plantations have been established on most unpromising sites. A variety of techniques have been developed and employed by the Plains Division to establish these village fuel areas, some of which are quite contrary to generally accepted beliefs concerning local tree planting requirements. It is for such reasons that this work has proved to be so valuable as public demonstrations.

IX.—OIL CONVERSION.

73. The oil conversion scheme aims at converting all industrial and commercial usage of wood fuel, together with a proportion of domestic usage, to oil or other mineral fuels. By these means only can the pressure for fuel from the forests be relieved sufficiently to allow time for reafforestation and the recovery of the growing stock to take place. The application of such a fuel conversion scheme would not normally be a duty to be undertaken by a forest service. Only necessity has compelled the Forest Department to do this duty ever since the general failure of wood fuel supplies occurred in 1943, and oil conversion had to be hastily applied. The fuel problem in Cyprus is such, that unless the increasing pressure on the remaining tree growth of the island can be relieved by the use of alternative fuels, then the forests must inevitably be wiped out. It must be appreciated also that the conversion from wood to mineral fuels, and the maintenance of adequate mineral fuel supplies is of necessity an essential part of forest policy. It is equally a problem for soil conservation policy, for the continual stripping of the hills of their tree growth and bush soil cover for fuel, has been and still is a main factor in causing soil erosion and land degradation. In such circumstances it is small wonder that the Forest Department had to undertake the unusual duties of oil conversion.

74. As a result of the closure in 1947 of the Haifa oil refinery, from which all supplies of oils for Cyprus formerly came, 1948 proved to be a year of acute shortage of oils in Cyprus. This created a desperate demand for wood fuel because most industry was forced back on to wood fuel after having been so successfully converted to oil. Similarly the prices of heavy oils, which in 1947 had been low enough to make the use of oil more economic than wood, had risen by 44% for gas oil and 56% for furnace oil. The failure of oil supplies coupled with heavy increases in prices was a staggering blow to the forests, especially after the success of the first four years of oil conversion between 1943 and 1947. This was the position at the beginning of 1949. However, early in 1949 supplies of oils again became available in sufficient quantities to meet demand and remained in good supply throughout the year. This relief came at an opportune time for if the consumption of wood fuel had continued at the rate of demand during 1948 irreparable damage would have been done to the forests and tree growth of the island. During 1949 the difficulty was to force industry back on to oil fuel in the face of the uneconomically high prices of oils. This proved a very difficult task for it was not surprising that belief in oil had been badly shaken by its sudden failure and increase in price. Fortunately, some slight reductions in the price of oils did take place during 1949 but they were indeed small compared with the recent increases. Till the end of the year the position remained unchanged in that the economics of prices favoured the use of wood fuel in many cases. This made it extremely difficult for the oil conversion organization to regain the lost ground but by the end of the year the position had mostly been retrieved.

75. The estimated consumption of wood fuel was 70,000 tons in 1946; this figure was reduced to 53,400 tons in 1947 owing to the success of oil conversion in the first nine months of 1947. In 1948 this figure had increased again to 75,000 tons. In 1949 it was 58,000 tons. These figures reflect the immediate effect that the shortage of oils had on the forests and tree growth of the island. Fortunately, by the end of 1949 there were indications that oil supplies would continue to be plentiful and possibly cheaper during 1950.

76. At the end of 1948 the whole of the Fuel and Charcoal Control organization, which included oil conversion, was transferred from the Forest Department to the Supplies Department. Provision was, however, made for the Forest Department to retain control of policy concerning fuel and oil conversion. This was a necessary provision because shortage of fuel is inevitably one of the main forest problems. If the two policies were not in one control it might easily happen that changes in fuel policy could conflict with forest policy.

X.—GAME PRESERVATION.

77. The preservation of game is a subject in which many forest services take an active interest, and in Cyprus it imposes duties on the Forest Service. In Cyprus the only remaining wild animal of any size is the moufflon or wild sheep (ovis ophion) which was formerly numerous in all the mountainous areas, but now it is only found in Paphos Forest. Ten to fifteen years ago this interesting animal was within extreme danger of extermination when in 1938 Paphos Forest, an area of 232 square miles, was declared a permanent game reserve for the special purpose of affording a sanctuary for moufflon. The Forest staff also provided the strictest possible protection for moufflon, and picked Forest Guards were allotted this special duty. As a result of these measures this little known insular species has been saved from extermination and is now noticeably on the increase. Specimens are kept in paddocks at Stavros Forest Station in Paphos Forest in order that the public may see what their wild sheep is like, for very few have ever seen it in the wild state.

78. In 1947 an attempt was made to re-introduce pheasants to Cyprus by the importation of eggs. Unfortunately, this attempt was a total failure, so in 1948 a second attempt was made. This time both eggs and mature birds were imported and some success from both was attained. By the end of 1948 thirty pheasants had reached maturity in the pens at Stavros Forest Station. In January, 1949, fifteen mature pheasants were released at Stavros. This left fifteen stock birds in the pens for egg production. The freed birds so far as is known did not rear any broods, and though they stayed in the forest for some months, later they appear to have been attracted by stuble fields and strayed far outside the safety of the forest. By the end of the year it is doubtful if more than two of the fifteen released birds were alive. The stock birds laid well, but the percentage of eggs hatched off was poor and the number of chicks reared was only seventeen. The mortality of the chicks was extremely heavy and unaccountable. However, in spite of this discouraging result the experiment will be continued in the hope of being able to acclimatise the birds and get them to rear broods in the wild state.

79. In general, the stock of game has diminished seriously in recent years. Indigenous game birds have been shot out by too many guns coupled with several bad breeding seasons. The 1947–48 shooting season recorded the lowest head of game ever known, till by the end of the season the last remaining breeding stock had been shot out from wide areas. Those who shoot for sport in Cyprus are few compared with those who kill game commercially. So serious had this position become that in many areas the forests were the only places where a remnant of the breeding stock of Red Legged Partridge (Chukar) and Francolin (Black Partridge) could find cover enough to escape extermination. In these circumstances it appeared that one more such season would wipe out the last game from the island, and so all shooting was stopped during the 1948–49 season except in certain local marsh land areas where migratory wild fowl could be shot. The results from this measure were very encouraging and go to prove that it is mainly the pressure of overshooting that has caused the reduction of game. By the autumn of 1949 game had made a remarkable recovery and in many areas a fair stock of game was to be seen. The effects of restoring a full four months shooting season commencing on October 1st for 1949–50 were unfortunate. By the end of the first month many accessible areas were already stripped of game. By the end of the year practically all accessible areas had been shot out as badly or worse than they had been two years before. These deplorable conditions were aggravated by the almost complete failure of the south-bound migration of wild fowl. Particularly did the absence of woodcock affect partridges adversely, for normally a plentiful migration of woodcock provides a much needed relief to partridge during the winter months. The 1949–50 shooting season has shown once again that the head of game is hopelessly inadequate for the excessive numbers of guns in Cyprus. If any game is to be preserved at all, drastic measures must be applied to reduce the amount of shooting. The results from the innovation that every game licence holder must produce six head of either crows or magpies to qualify for his next season's licence seem to have been very satisfactory and should reduce these enemies of game considerably.

XI.—FINANCIAL.

80. The total departmental expenditure and revenue for 1948 and 1949 is shown as follows for comparison:

	1948	*1949*
	£	£
Current Expenditure	101,762 ..	92,095
Revenue	40,153 ..	32,023
Deficit balance	61,609 ..	60,072
Capital Expenditure (Advanced under Colonial Development Funds, Development Fund or Loan Funds)	73,593 ..	88,862

Appendix No. 8 shows details of the financial statement. The apparent deficit balance needs some explanation for the true position is not disclosed by references to figures alone. As was explained more fully under the heading of "Timber Yields" above, the forests must still be managed on a very restricted yield as a result of excess fellings during the war period. Also only about one-fifth of the total forest area is at present productive. This point needs to be accentuated for the position will be very different when the greater part of the forest area has been nursed back to a productive state. Furthermore, the forests have to stand the continual drain of very extensive free permitted usages. They also provide much employment and serve the primary purposes of water catchment, protection and amenity in the hills. These extensive indirect values cannot be expressed in terms of revenue to appear on the credit side of the forest balance sheet. The maintenance and improvement of the forests offer a thoroughly sound long-term investment that will pay handsome dividends in the future, both in direct and indirect returns. Even within the short period of a single generation the forests have twice been called upon to contribute heavily during the emergency of world wars. The rate of recovery and building up of the growing stock is now very rapid, so the forests will in future be in a better position than ever before to serve the country well in times of emergency.

XII.—ADMINISTRATION.

(1) Forest Staff.

81. The total strength of staff of the Forest Department as on 31st December, 1948, and 31st December, 1949, is set out below for comparison.

Permanent :	*1948*	*1949*
Conservator	1	1
Senior Assistant Conservator of Forests	1	1
Assistant Conservators of Forests	5	5
Forest Assistants	1	2
Forest Rangers	7	8
Foresters	19	18
Forest Guards	124	124
Head Linesman	—	1
Telephone Linesmen	4	4
General Clerical Staff	9*	6
Accounting Officer	1	1
Temporary .		
Fuel and Charcoal Controller	1	—
Temporary Forest Surveyor	1	1
Forest Officers Prosecutions	4	3
Temporary Assistant Forest Surveyors	3	3
Temporary Forest Guards	17	7
Temporary Forest Foremen	75	69
Temporary Telephone Linesmen	4	4
Telephone Operators	12	13
Temporary Clerical Staff	29*	8
Drivers and Mechanics	12	12
Others	14*	2
Total	344	293

* Include Fuel and Charcoal Control Staff.

(2) Forest Organization.

82. The Forest Department Headquarters are at Nicosia. The forests are divided into four Divisions, three of which are territorial and one non-territorial as follows : Paphos Division based on Stavros forest station, Troodos Division based on Platania forest station, Northern Range Division based on Halevga forest station and Plains Division based on Nicosia Head Office. This latter Division is responsible for some lowland forests, all the Village Fuel Areas and the organization for the encouragement of private tree planting all over Cyprus. In addition the following technical branches operate under separate control in all four forest divisions but are based on Nicosia : Working Plans Section, Survey Section, Telephone and Mechanical Section.

83. Every possible effort was made to keep the Headquarters staff down to the minimum and the executive field staff at maximum strengths. The Senior A.C.F., Mr. Chapman, was absent on secondment serving in Iraq. This officer is still on the Department's strength.

(3) Training Cyprus Staff.

84. Forest Ranger D. Couppis, the officer in charge of the Telephone and Mechanical Section, completed a two years scholarship training in Forest Engineering in Britain and resumed his duties in Cyprus during March, 1949. Forest Rangers Tsiacouris and Middleton completed their two-year scholarship training in Britain at the Forestry Commission's Forest School at Lynford Hall in Norfolk. They returned in the autumn and broke their journey in Italy on their way back to study Italian land use and forestry. Foresters Michaelides and Omer were absent during the whole year on a two-year scholarship course of training at the Forestry Commission's Forest School at Lynford Hall in Norfolk. Forest Assistants Mr. Michaelides and Mr. Jacovides visited Italy in the autumn to study Italian methods of land use and forestry. Assistant Conservator of Forests, Mr.Davidson, returned in the spring from a course of post-graduate study at the Imperial Forestry Institute at Oxford. Forest Foreman Polycarpou was absent for the whole year on a scholarship training for the Forestry Degree course at Aberdeen University. Forest Foreman Seraphim was selected for a scholarship training for the Forestry Degree course at one of the Scottish Universities; he left Cyprus in October, 1949, for preparatory study at Edinburgh.

(4) Forest School.

85. During 1949 the Public Works Department began building the Forest School at Prodhromos. By the end of the year about half the main block had been erected when winter weather stopped construction. It is expected that this work will be completed in time for the school to open in autumn 1951. This school is estimated to cost £35,700 and is being provided from Colonial Development Funds. When completed it will have accommodation for 36 students and special provision will be made for training overseas students. Training courses for both Forest Guard and Forester ranks will be provided.

(5) Acknowledgment.

86. I take this opportunity to express my thanks and appreciation to all members of the staff for their hard work, co-operation and loyal service.

R. R. Waterer,
Conservator of Forests.

16*th March*, 1950.

APPENDIX 1.

AREA IN SQUARE MILES OF FOREST LAND ON 31ST DECEMBER, 1949.

Category of Forest Land	Total area of unit	State Forests				Private Forests	Total Forest Land	Percent. of whole area of Cyprus	
		Production reserves	Protection reserves	Unreserved	Total State Forests			Forest reserves	Total Forest Land
Main State Forests	531.48	—	531.48	—	531.48	—	531.48	14.88	14.88
Minor State Forests	91.91	—	91.91	—	91.91	—	91.91	2.58	2.58
Private Forests ..	30.00	—	—	—	—	30.00	30.00	—	0.84
Total ..	653.39	—	623.39	—	623.39	30.00	653.39	17.46	18.30

APPENDIX 2.

STATEMENT IN SQUARE MILES OF PROGRESS IN FOREST RESERVATION AND DEMARCATION DURING THE YEAR ENDED 31ST DECEMBER, 1949.

Category of Forest Reserve	Reserves Constituted and Demarcated			On 31st December	
	On 1st January, 1949	Added during the year	Excluded during the year		
Main State Forests	531.12	0.36*	—	531.48	*Land purchases in and adjoining Main Forests.
Minor State Forests	91.91	—	—	91.91	
Total ..	623.03	0.36	—	623.39	

APPENDIX 3.

STATEMENT IN SQUARE MILES OF PROGRESS MADE IN WORKING PLANS DURING THE YEAR ENDED 31ST DECEMBER, 1949.

Territorial Unit	Area under Working Plans				Area not under Working Plans on 31st Dec., 1949	Total Area	Area for which plans were revised during the year
	On 1st January, 1949	Added during the year	Excluded during the year	On 31st December, 1949			
Main State Forests (Intensive)	434.98	0.24	22.24	412.98	118.50	531.48	—
Minor State Forests ..	—	—	—	—	91.91	91.91	—
Total	434.98	0.24	22.24	412.98	210.41	623.39	—

Note.—The area of 22.24 square miles excluded during 1949 represents an area of forest for which there is a draft Working Plan that is not yet approved and was erroneously included in the 1947 and 1948 Reports.

APPENDIX 4.

RECORD IN MILES OF FOREST COMMUNICATIONS FOR THE YEAR ENDED 31ST DECEMBER, 1949.

Category of Forest Land	Forest Roads		
	Added	Abandoned	Total at the end of the year
Main State Forests	22.71	—	377.52
Minor State Forests	—	—	14.00
Total	22.71	—	391.52

APPENDIX 5.

SUMMARY OF FOREST OFFENCES FOR THE YEAR ENDED 31ST DECEMBER, 1949.

Category of offence	Cases taken to Court							Total		Cases dealt with departmentally		Offenders unknown	Total all offences		Confiscated property sold or released		Compensation for damage
	Imprisnt. without option of fine	Fined		Cautioned and Disch.	Acquitted or withdrawn	Bound over	Whipped										
	Cases	Cases	Fine	Cases	Cases	Cases	Cases	Cases	Pers.	Cases	Amount	Cases	Cases	Pers.	Cases	Amount	Amount
			£ s. p.								£ s. p.					£ s. p.	£ s. p.
Damage to forest by fire ..	—	7	9 16 0	—	1	1	—	9	9	2	– 2 0	—	11	11	—	– – –	2 0 0
Unauthorized possession of forest produce	30	371	525 4 0	37	57	12	—	507	533	1,621	875 19 0	—	2,128	2,216	83	56 3 6	199 5 4
Unauthorized fellings ..	5	109	266 16 5	3	13	6	—	136	143	385	209 13 3	—	521	572	3	8 18 0	159 14 8
Unauthorized grazing	5	702	1,252 18 6	27	57	34	—	825	911	1,100	1,099 2 0	—	1,925	2,215	9	18 16 0	318 4 2
Land encroachments	—	93	126 16 0	7	1	5	—	106	107	3	1 0 0	—	109	110	—	—	11 9 0
Miscellaneous	1	16	15 9 0	—	—	1	—	18	20	53	23 1 0	—	71	73	—	—	2 6 0
Total	41	1,298	2,197 0 2	74	129	59	—	1,601	1,723	3,164	2,208 17 3	—	4,765	5,197	95	83 17 6	692 19 5

APPENDIX 6.

OUTTURN IN SOLID CUBIC FEET (WHOLE STEM VOLUME OVERBARK) OF TIMBER AND FUEL FOR THE YEAR ENDED 31ST DECEMBER, 1949.

Territorial Unit	Logs (sold standing)	Sawn (Royalty Sales & departmental) Timber	Other hewn wood (Ploughwood, etc.)	Firewood	Charcoal (c.ft. of timber equivalent)	Total volume equivalent in round timber	Total value
Main and Minor State Forests	261,117	200,321	13,177	1,245,865	70,830	1,791,310	£34,326

APPENDIX 7.

OUTTURN OF MINOR FOREST PRODUCE, 1949.

Territorial Unit	Origanum Oil		Canes		Fodder, hay, grass, vetch and leaves		Miscellaneous (stones and earth)		Miscellaneous (fruit and seeds)		Miscellaneous (pine cones)		Miscellaneous (other material)		Miscellaneous (olive trees and nursery stock)		Saw dust		Pine bark	
	Tons	Value	Pieces	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value	No.	Value	Lorries	Value	Tons	Value
Cyprus	1	£163	1,000	£1	44	£19	1,890	£38	111	£839	14	£9	—	—	61,931	£1	14	£9	188	£41

APPENDIX 8.

COMPARATIVE FINANCIAL STATEMENT FOR THE 10 YEARS ENDED 31ST DECEMBER, 1949.

Year	Forest Revenue	Forest Expenditure	Surplus	Deficit	Expenditure under C.D.F.	Expenditure under L. S. Account	Expenditure under Development	Grand Total of Expenditure
	£	£	£	£	£	£	£	£
1940	56,123	61,099	—	4,976	—	—	—	61,099
1941	56,881	47,291	9,590	—	16,672	—	—	63,963
1942	74,864	87,283	—	12,419	24,677	—	—	111,960
1943	181,031	140,519	40,512	—	19,635	—	—	160,154
1944	127,774	144,498	—	16,724	21,621	—	—	166,119
1945	100,467	100,330	137	—	33,285	—	—	133,615
1946	81,866	79,016	2,850	—	47,219	—	—	126,235
1947	42,748	86,943	—	44,195	48,205	18,095	5,880	159,123
1948	40,153	101,762	—	61,609	32,435	32,800	8,358	175,355
1949	32,023	92,095	—	60,072	24,312	—	64,550	180,957
Total	793,930	940,836	53,089	199,995	268,061	50,895	78,788	1,338,580

APPENDIX 9.

STRENGTH OF FOREST STAFF ON 31ST DECEMBER, 1949.

Territorial Unit	Senior Staff			Subordinate Field Staff								Clerical Staff	Technical subordinate	Permament labour force
	Colonial Forest Service	Others	Total	Forest Rangers	Foresters	Forest Guards	Temp. Forest Guards	Forest Foremen	Prosecuting Officers	Messengers	Total			
Cyprus	7	3	10	8	18	124	7	69	3	2	231	15	37	59

APPENDIX 10.

STATEMENT OF THE INCIDENCE OF FOREST GRAZING IN MAIN STATE FORESTS.

(*a*) GRAZING PERMITS ISSUED.

	Free		On payment		Total	
	1948	1949	1948	1949	1948	1949
1. Number of Permits ..	92	60	133	100	225	160
2. Number of Animals:—						
(*a*) Goats	3,965	3,530	2,088	1,149	6,053	4,679
(*b*) Sheep	1,235	822	1,912	1,867	3,147	2,689
(*c*) Other Animals ..	243	222	345	307	588	529
(*d*) Total No. of Animals	5,443	4,574	4,345	3,323	9,788	7,897
3. Fees Collected			£84. 17. 8	£61. 10. 3		

(*b*) GRAZING STATISTICS.

	1948	*1949*
1. Area of Main State Forests grazed over lawfully, in square miles ..	86.04 ..	72.19
2. Area of Main State Forests closed to grazing, in square miles	445.08 ..	459.29
3. Total number of goats in the island counted for taxation	186,534 ..	166,945
4. Number of goats allowed to graze in the Main State Forests	6,053 ..	4,679
5. Number of goats allowed to graze in the Main State Forests, expressed as percentage of total number of goats	3.24% ..	2.80%
6. Total number of sheep in the island counted for taxation	291,346 ..	304,180
7. Number of sheep allowed to graze in the Main State Forests	3,147 ..	2,689
8. Number of sheep allowed to graze in the Main State Forests, expressed as percentage of total number of sheep	1.08% ..	0.88%

Note.—Since accurate figures for the Minor State Forests are not available they have not been included.

APPENDIX 11.

STATEMENT OF FIRE PROTECTIVE WORKS AND FIRE INCIDENCE FOR THE YEAR 1949.

(*a*) FIRE TRACES.

1. Fire traces existing on 1st January, 1949	68 miles
2. New fire traces opened during the year	2 ,,
3. Existing fire traces cleaned during the year	16 ,,

Note.—The figure of 68 miles of fire traces represents a reduction from the figure given in the 1948 Report and is explainable by a reclassification of fire traces, whereby only main fire traces are now included.

(*b*) TELEPHONES.

	Length miles	*No. of instruments*	*No. of switch boards*
1. Existing telephone lines and instruments on 1.1.49	474 m. 77 yds.	99	6
2. Alterations (296 m. 113 yds. and 1 switch board and 22 instruments additions, and 118 m. 245 yds. and 2 instruments obsolescent)	177 m. 1,628 yds.	20	1
Total	651 m. 1,705 yds.	119	7

(*c*) FIRE DETECTION.

1. Fire watchers	44
2. Fire watchers' huts on 31.12.49	13
3. Huts repaired during the year	3

(*d*) FIRE INCIDENCE.

Year	*No. of fires*	*Area burned sq. miles*	*Assessed damage* *	*Cost of extinction*			*Cause*		
1949 ..	50 ..	0.82 ..	£5,799 ..	£2,574 ..	16	Malicious,	34	Carelessness.	

* The figure does not include— cost of reclamation; cost of deterioration of site; cost of compound interest on capital value at the time of the fire.

APPENDIX 12.

(A) ANALYSIS OF FOREST OFFENCES TAKEN UP BY THE FOREST DEPARTMENT FOR THE YEAR ENDED 31ST DECEMBER, 1949.

Category	Cases taken to Court.									
	Imprisonment without option of fine Cases	Fined			Cautioned	Bound Over	Acquitted or Withdrawn	Whipped	Total Court cases	
		Cases	Fine	Damages compensation	Cases	Cases	Cases	Cases	Cases	Persons
			£ s. p.	£ s. p.						
Damage to forest by fire	—	7	9 16 0	2 0 0	—	1	1	—	9	9
Unauthorized possession of forest produce	30	371	525 4 0	199 5 4	37	12	57	—	507	533
Unauthorized fellings	5	109	266 16 5	159 14 8	3	6	13	—	136	143
Unauthorized grazing	5	702	1,252 18 6	318 4 2	27	34	57	—	825	911
Land encroachments	—	93	126 16 0	11 9 0	7	5	1	—	106	107
Miscellaneous	1	16	15 9 0	2 6 0	—	1	—	—	18	20
Total	41	1,298	2,197 0 2	692 19 5	74	59	129	—	1,601	1,723

(B) ANALYSIS OF FOREST OFFENCES TAKEN UP BY THE FOREST DEPARTMENT FOR THE YEAR ENDED 31ST DECEMBER, 1949.

Category	Cases dealt with departmentally								Confiscated property sold or released		Cases pending from previous year	Cases outstanding at the end of the year
	Total No. dealt with departmentally		Compounded		Warned cases	Cancelled cases	Offenders unknown (undetected)					
	Cases	Persons	Cases	Amount			Cases	Estimated loss	Cases	Amount		
				£ s. p.				£		£ s. p.	No.	No.
Damage to forest by fire	2	2	1	– 2 0	1	—	—	—	—	—	3	—
Unauthorized possession of forest produce	1,621	1,683	1,517	875 19 0	87	17	—	—	83	56 3 6	293	319
Unauthorized fellings	385	429	367	209 13 3	13	5	—	—	3	8 18 0	50	70
Unauthorized grazing	1,100	1,304	1,027	1,099 2 0	35	38	—	—	9	18 16 0	454	247
Land encroachments	3	3	2	1 0 0	1	—	—	—	—	—	19	30
Miscellaneous	53	53	46	23 1 0	7	—	—	—	—	—	9	12
Total	3,164	3,474	2,960	2,208 17 3	144	60	—	—	95	83 17 6	828	678

APPENDIX 13.

STATEMENT OF FOREST REVENUE COLLECTED IN 1948 AND 1949.

Item of Revenue	1948	1949
	£ s. p.	£ s. p.
Permit Fees :		
Fuel Permits	501 6 3	488 13 3
Charcoal Permits	24 4 0	20 12 5
Grazing Permits	84 17 8	61 10 3
Lime Permits	66 6 5	22 4 0
Bricks and Tiles Permits	3 0 0	24 0 0
Gypsum Permits	70 0 0	1 0 0
Total Permit Fees	749 14 7	618 0 2
Sales of Timber, etc. :		
Sale of Standing Trees	14,827 10 8	15,856 1 1
Sale of Timber	10,026 8 0	10,403 11 5
Sale of Fuel	8,732 5 2	2,787 0 7
Sale of Charcoal	3,065 6 6	22 2 2
Sale of Seeds and Nursery Stock	412 3 2	636 16 0
Sale of Minor Forest Produce	1,072 18 0	358 19 7
Sale of Confiscations	160 4 2	110 17 4
Total Sales	38,296 16 2	30,175 8 8
Other Revenue :		
Rents of lands, water, etc.	248 15 6	410 7 4
Rents of Sawmills	187 9 5	127 1 4
Rents of Tractors	40 12 5	—
Other Revenue	190 4 2	180 3 4
Impounding Fees	118 12 3	90 10 6
Telephone Charges	284 16 6	375 17 5
Protection Fees	36 7 1	45 10 1
Total	1,106 18 1	1,229 10 6
GRAND TOTAL	40,153 9 1	32,022 19 7

APPENDIX 14.

STATEMENT OF EXPENDITURE FROM FOREST DEPARTMENT VOTES DURING 1948 AND 1949.

Sub-head	1948	1949
	£ s. p.	£ s. p.
Personal Emoluments	47,835 13 2	42,404 18 6
Travelling	5,292 14 2	4,678 6 6
Maintenance and Operation of Motor Transport	4,913 1 7	4,900 12 3
Maintenance of Plant, Machinery and Animals	1,733 16 4	1,629 19 5
Maintenance of Roads and Bridges	11,153 14 8	11,117 14 7
Maintenance and Equipment of Buildings	1,957 1 3	3,496 15 8
Fire Protection	5,071 3 6	3,877 13 0
Fire Fighting	1,701 17 0	2,513 4 5
Telephones	2,727 19 6	2,750 8 3
Salvage of Burnt Trees	1,595 11 0	1,581 10 4
Silviculture	892 0 3	843 11 3
Delimitation, Forest Survey & Working Plans	2,083 11 4	1,747 16 6
Tools	381 10 0	512 19 2
Water Supplies	467 7 5	375 14 7
Plantations, Government House Grounds	132 14 7	139 7 1
Rent	644 10 0	676 10 0
Rewards	7 0 0	—
Leave Pay to Regular Wages Employees	211 10 1	210 19 7
Uniforms	1,915 6 0	2,001 16 4
Library	45 2 1	34 0 7
Refunds	872 12 5	– 11 1
Lighting, Heating and Electric Power	299 2 1	268 7 2
Forestry Exhibitions	120 19 1	148 18 1
Incidentals	158 6 6	189 14 5
Extraction and Supply of Timber, etc.	6,199 0 2	4,194 18 0
Special Expenditure :—		
Oil Conversion Experiments	53 2 6	121 7 5
Purchase of Motor Vehicles	4,803 11 7	2,850 1 7
Total	103,270 0 6	93,267 18 6
Less : Sales of Timber and Fuel to other Government Departments	1,507 18 2	1,173 8 4
Total	101,762 2 4	92,094 10 2

APPENDIX 14.—*contd.*

STATEMENT OF EXPENDITURE FROM FOREST DEPARTMENT VOTES DURING THE YEARS 1948, 1949 UNDER DEVELOPMENT.

Head No. as in Estimates	Sub-head	1948	1949
	Colonial Development and Welfare Grants :	£ s. p.	£ s. p.
43	Mountain Forests	23,134 4 0	8,795 8 5
,,	Village Fuel Reserves	5,977 13 5	—
,,	Removal of Dhimmata Forest Settlement ..	3,322 13 5	4,769 6 2
,,	Forest School	—	10,748 0 0
	Total	32,434 11 1	24,312 14 7
	Colony's Development Expenditure :		
,,	Reclamation and Reafforestation	—	10,761 17 7
,,	Lowland Forests	5,252 10 7	9,471 0 7
,,	Village Fuel Reserves	4,203 13 4	8,036 17 2
,,	Forest Nurseries	6,768 18 6	1,694 9 0
,,	Forest Roads	11,061 17 4	18,705 8 3
,,	Forest Telephone System	5,027 3 6	7,589 15 2
,,	Forest Buildings	8,843 17 6	4,462 7 8
,,	Forest School	—	3,828 1 1
	Total	41,158 1 6	64,549 17 3
	Grand Total	73,592 12 7	88,862 12 1

EXPENDITURE INCURRED BY FOREST DEPARTMENT FROM OTHER VOTES.

19	Compensation for injuries to Government Employees	23 10 3	35 7 2
,,	Preservation of Moufflon	89 9 0	33 4 7
,,	Introduction of Game birds	43 10 4	35 15 6
2	Maintenance & Improvement of Village Roads	114 9 7	49 19 6
3	Agricultural Shows	—	15 0 0
41	Soil Conservation	410 6 1	71 14 5
47	Improvement of main Village Roads	—	46 6 4
51	Nicosia Airport	—	99 6 6
4B	Improvement and Protection of Agriculture ..	49 13 6	—
5B	Maintenance of Ancient Monuments	35 11 3	—
28	Road for development of Government land ..	1,274 17 6	—
	Total	2,041 8 3	386 15 0

drawn in the Land Registration and Survey Department of Cyprus,
«PRINTED BY THE CYPRUS LITHOGRAPHIC WORKS, 1950»

Cyprus, Government Railway

District Boundaries

Magnetic Variation 1938 1° 15′ E
Annual increase about 3′