

CYPRUS

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ANNUAL REPORT  
OF THE  
FOREST ADMINISTRATION  
IN CYPRUS

FOR THE YEAR

1938

BY

R. R. WATERER,  
*Conservator of Forests*

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PRINTED AT THE CYPRUS GOVERNMENT PRINTING OFFICE

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## I. INTRODUCTION.

CYPRUS, owing to its geographical situation, does not enjoy a regularly distributed rainfall. It is liable to torrential rains during a short rainy season and almost complete drought during a long dry season, whilst by far the greater part of the Island has been denuded of vegetation. As a result of these circumstances soil erosion is in a rapid and advanced state, and flood damage is of regular occurrence. It will, therefore, be readily understood that the primary object of management in all forest areas must be to preserve a permanent forest cover for protection against soil erosion and flood damage, and for the conservation and improvement of water supplies. The secondary object is to provide sustained yields of timber and fuel for local markets.

2. The forests of Cyprus also serve another purpose, which plays a very important part, and that is public amenity. Cyprus provides the only summer hill stations on British territory within the Near East, and increasing numbers of visitors come to Cyprus during the summer months in order to enjoy the climate and scenery of its hill stations. It is certainly fair to say that much of the attractiveness of these resorts is due to their being situated in or near the forest areas. There has also been a very noticeable increase in the numbers of summer tourists mainly of local origin, who visit the beautiful scenery of the larger hill forests, particularly Troödos and Paphos forests. This tourist traffic for the purposes of sight-seeing is a very important trend of local events and must be carefully fostered by the provision of good forest roads which will attract tourists. It is pleasing to record that Cypriots are becoming increasingly conscious of the economic and scenic values of their forests.

3. Throughout the year the greatest attention was again given to strengthening and consolidating cordial relations between the Forest Administration and the rural population. Recent years have made it abundantly clear that a successful forest policy in Cyprus must be one which co-operates very closely with the people and has the support of the villages in and surrounding the forests. The basis of forest policy was, therefore, to work the forests for the maximum benefit of the surrounding population, subject, of course, to due consideration being given to the protective purpose of the forests and to correct technical management. Fortunately there was a steady improvement in the relations of the Department with the people, which was registered unmistakably by the continued reduction of serious forest crime statistics and by the very low incidence of malicious forest fires. But even so it is a matter for regret that so much 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.

4. The public were given every encouragement to take an interest in, and fully realize the necessity for maintaining their forests. Similarly the need for maintaining and establishing private forests was continually urged. Only by the establishment of privately or communally owned trees or forests can the ever-increasing village fuel problem be solved. It was encouraging to note, however, that the current year probably saw the greatest advancement in private tree planting ever recorded in Cyprus. It is to be hoped that as education brings a wider knowledge within reach of the people, the economic, climatic and scenic advantages of a tree-covered Cyprus will be readily understood and will promote a determination, not only for maintaining and improving the existing forests and trees, but also for establishing some form of economic tree growth over those large and uneconomic areas of Cyprus which have been denuded in the past and are urgently in need of reclamation. In this respect it is interesting to record that there are fifteen village tree planting societies which indicate very clearly that village communities are beginning to realize the urgent need for tree planting and are taking the initiative to establish trees in their lands. Such societies have a most praiseworthy purpose and it is important to record that Government decided to recognize them by making provision for future small grants to assist in their maintenance and so to urge their cause forward. It is hoped that this will give encouragement to the existing societies and to other villages to follow their example and succeed in re-establishing tree growth over village lands that have long lain denuded and unproductive.

5. The Cyprus Forestry Association was again supported by a grant of £50 from departmental funds. This Association has, as its purpose, the duty of spreading a knowledge of forestry; the reasons, objects 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 matters, and so forms a most valuable link between the Forest Administration and the public. Hitherto it has not had the public support which it deserves in order to enable it to fulfil its praiseworthy objects to the best advantage, but that there is a need for such an organization is evidenced by the fact that local opinion is now becoming increasingly interested in forestry and tree planting.

6. It was decided that a forest film illustrating all the various aspects of forest work should be produced for propaganda purposes in Cyprus. In this way it is hoped to acquaint the people of the value and beauty afforded by the Island's forests and the need for their better protection, development and extension. This film is being produced in conjunction with the Cyprus Forestry Association as funds permit. Already more than 700 feet of 16 m.m. gauge film have been exposed.

7. The Cyprus moufflon, which now only occurs very rarely in Paphos and Troödos forests, is still decreasing. It is estimated that the total number of animals existing does not exceed twenty. Though this interesting local form of moufflon is in theory afforded complete protection by law, yet it is continually poached by persons who disregard the Game Law, and so it is in imminent danger of extermination. However, 1938 saw the whole of the Paphos forest area declared a permanent game reserve in which no unauthorized person may carry a gun. It is to be hoped that the enforcement of this order and of further measures of protection will shortly ensure that moufflon may live and multiply in their sanctuary without further molestation.

8. During 1938 the Imperial Forestry Institute laid down a scheme for the standardization of Statistical Forms for the Annual Reports of Colonial Forest Departments. In compliance with that scheme the statistical forms appearing as Appendices 1 to 9 of this Report have been prepared in the form required by the Imperial Forestry Institute. The statistical forms appearing as Appendices 10 to 14 of this Report give additional figures required for information within the Colony.

## II. CONSTITUTION.

### 1. FOREST AREA.

9. During the year there was a reduction of the forest area by 138.25 donums. The total forest area is now computed to be 1,203,539.75 donums or 397,847 acres, equal to 17.35% of the total area of the Colony.

10. The following figures in donums show the changes during the year :—

Forest area on 1st January, 1938	..	..	..	..	1,203,678.00
New lands acquired	..	..	..	..	31.50
Total	..	..	..	..	1,203,709.50
Area given up :—					
(a) Main Forests	..	..	..	..	169.75
(b) Minor Forests	..	..	..	..	—
					169.75
Forest area on 31st December, 1938	..	..	..	..	1,203,539.75

*Note.*—1 acre=3.025 donums.

11. Of the 621.64 square miles of State Forests, 535.64 square miles consist of Main State Forests and Plantations, while the remaining 86 square miles are Minor State Forests, which mostly consist of lowland areas supporting poor scrub growth used as fuel and grazing grounds. It is estimated that there are also approximately 23 square miles of private forests, woodlands and plantations, and 7 square miles of Monastic, Church and Evcaf forests (Evcaf forests are those belonging to Moslem religious bodies).

12. In compliance with the policy approved by the Secretary of State for the Colonies in 1937, the Minor State Forests are in the process of being handed over to the District Commissioners for future maintenance and management. By the end of the year the transfer of these areas was not complete, but it is expected that it will be completed early in 1939. Full details of this change will, therefore, be included in the 1939 Report.



## 2. FOREST BOUNDARIES.

13. Ever since the original delimitation of the forests, the forest boundaries have been most inadequately demarcated by boundary marks or cairns built of stone rubble and lime. These unfortunately are in most cases too far apart and are not durable, with the result that they need constant repair and are easily destroyed so that encroachments may proceed unnoticed ; while in many cases internal boundaries were not marked on the ground at all. With the drafting of the new forest law it became apparent that no effective control of the forest boundaries could be contemplated until an accurate re-delimitation of the forests had been carried out. Accordingly during 1938 additional expenditure was provided and a start was made by re-delimiting Troödos forest. This work was carried out by the Forest Surveyor working in conjunction with the Land Registration and Survey Department, and great care was taken to mark all internal and external boundaries accurately on the ground with cement concrete boundary marks built on solid foundations. Whenever possible the opportunity was taken to simplify the boundary by the inclusion or exclusion of land that would tend to straighten the line. Sufficient marks were placed in order to leave no doubt as to the exact position of the boundary line when viewed from any point along the line. Such work is of a permanent nature and when completed it will be possible to reduce the cost of maintenance of the forest boundaries, while at the same time avoiding the cost and time of constant enquiries and litigation, which in the past frequently led to the loss of forest lands and were everlasting under the old delimitation.

## 3. FOREST SURVEY.

14. A Forest Survey Section was maintained and was responsible for the maintenance of forest boundaries and all re-delimitation work, also for the survey, registration and record of all forest lands encroached upon, leased, acquired or conceded during the year. All plans and sunprints required in the Department were prepared in the draughtsman's office. The four Assistant Forest Surveyors were all stationed in the divisions throughout the year, where they were engaged with the working plan parties or re-delimitation parties, or with such divisional tasks as boundary maintenance, surveying encroachments or tracing new roads. The Forest Surveyor also spent the greater part of the year in the field with the re-delimitation party.

# III. PROTECTION.

## 1. PROTECTION FROM UNLAWFUL CUTTING.

15. In Cyprus damage caused by man is still the greatest problem of forest protection with which the Forest Administration is faced. The reasons for this are not far to seek. Prior to the British Occupation of Cyprus, there was no effective control over the forests. It was the custom of the country for the public to use the forests for any purpose that would yield personal gain. Such country customs are generally acquired through long usage and cannot be eradicated easily or quickly. Under these circumstances the difficulties and unpopularity of applying forest protection may readily be understood.

16. In the past the areas outside the forests were far more thickly covered with tree and bush-growth than is the case to-day, therefore, when forest protection was introduced in the forests the people tended to draw their requirements from the supplies outside the forests. So long as that state of affairs lasted it served as a great relief on the demands from the forests. But bearing in mind the comparatively slow average rate of forest growth in Cyprus and the ever-growing demands for forest produce from an increasing population, it was obvious that such a situation could not last long. The result has been that the private and vacant lands have been almost entirely stripped of forest and scrub growth. Now, therefore, the forests are forced to bear the full force of increasing demands for forest produce, which are mostly in the form of wood fuel.

17. In the main forests of the southern mountains the incidence of unlawful cutting is not increasing, but on the contrary in certain areas shows a continued decrease. The reasons for this improvement may be briefly explained as follows : These exploitable forests are mostly already under working plans, and the position has been greatly alleviated by working out sustained yields of timber and fuel for the requirements of the surrounding villages. The Department has been in a position to provide a large amount of employment in the southern forests on road, exploitation and other works, which greatly assisted in providing many villagers with a lawful occupation, who might otherwise have been tempted to resort to pilfering from the forests as a means of livelihood. The incidence of unlawful cutting bears a direct relation to the economic conditions of the rural population surrounding the forests, but fortunately 1938 was a year of good economic conditions in the villages and so

this was reflected by a tendency for unlawful cutting to decrease in those areas where protective control was maintained. Every effort was made to provide lawful means for the surrounding villages to obtain their requirements from the forests, for example the introduction of the ticket system for fuel sales referred to in paragraph 55 helped to reduce unlawful cutting. But lastly and most important of all, the improved position was chiefly due to a better understanding between the villagers and the Forest Administration and to the fact that the protective forest staff was more tactful and more efficient.

18. In the northern range forests and in the minor forest areas of the south-east the situation is entirely different and unlawful cutting is tending to increase. In those areas the problem of protection is still unsolved and is a matter of the greatest difficulty which causes the Forest Administration grave concern. The northern range forests, which are composed of many scattered blocks of forests, amount to some 180 square miles and are strung out in a narrow line, 100 miles long, while for about 56 miles they are bordered on the south by the central plain which is comparatively thickly populated and has practically no local sources of fuel or timber at all. The minor forests of the south-east comprise an area of about eight square miles and are situated on readily accessible lowlands on the southern side of the fuelless plain. It is easy to visualize, therefore, how extremely vulnerable these forests are. An additional and most serious complication is that the northern range is composed of a hard limestone well suited for the production of a high grade lime. Consequently in the past an extensive lime-burning industry has been established along the range, where both wood fuel and limestone could be easily obtained near at hand. The northern range is, therefore, now studded with numerous large lime kilns of a most primitive and uneconomical type which consume enormous quantities of wood fuel. These forests are, therefore, not only called upon to supply most of the domestic fuel and timber requirements of the central plain, but also to support an extensive lime-burning industry.

19. So far as the lime industry is concerned this matter is being tackled separately, as is explained in paragraph 84. With regard to the domestic requirements of timber and fuel for the central plain, the Forest Administration is fully aware that sufficient supplies must be forthcoming, since domestic fuel in some form is a necessity of civilization. It is clear, however, that the pressure of unlawful cutting cannot be alleviated, as was done in the southern range, by working out extensive yearly yields, since the forests have already been so denuded that they are mostly not in a condition to maintain yearly yields at all. Similarly the economic condition of the villages has little effect on unlawful cutting in this area since even in a good economic year the pressure is extremely great.

20. In view of these circumstances it is obvious that the northern range forests must be regarded as belonging to a different category from those of the southern range. Their management must be directed towards maintaining a forest cover over the catchment area and yielding as much fuel as possible, but it is unlikely that they will ever become exploitable high forest, as is the case in the south. Their protection is, therefore, being conducted on the following lines. Firstly, to relieve them of the demands for the lime kilns, by some reorganization of the lime industry. Secondly, to improve protection by providing additional patrolling forest staff, which has been approved for 1939, and by close co-operation with the District Administration's Rural Constables, and with the Police. This has already been applied with success but can still be much improved. Thirdly, as a result of tightening up control and protection in the north and of opening up forest communications in the south, to force the plain to draw more of its timber and fuel requirements from the southern range which is better able to stand it. Fourthly, to encourage the plain villages to undertake tree planting and so relieve the pressure for wood fuel. This work is long overdue and has chiefly been prevented in the past by the obstruction and threats of the grazing minority, who are always opposed to tree planting on the grounds that it interferes with the free range of their flocks. The importance of tree planting on the plain cannot be overestimated since it is obvious that so long as the villages have no source of fuel of their own they will always be forced to resort to unlawful cutting in the northern range forests.

## 2. PROTECTION FROM GRAZING.

21. Grazing continued to be one of the chief retarding factors to reafforestation. Practically the whole of the Cyprus forests were heavily grazed over by goats and sheep either lawfully under permit or unlawfully. There were only very restricted areas which were in practice almost free from grazing. The main hill forests were subjected to heavy goat grazing while the forests situated at the lower elevations were subjected to heavy grazing by both goats and sheep. Owing to Cyprus being situated in a semi-arid climatic zone the forests cannot produce a profuse growth of succulent vegetation suitable for grazing, and moreover the steep slopes have already been very largely denuded of such vegetation as should normally be present. Under

such conditions it may readily be understood that heavy goat grazing causes enormous damage. Forest trees and regeneration are grazed off, valuable ground flora urgently needed to help arrest rapid erosion is consumed and prevented from establishing itself, eroding soil on steep slopes is kept shifting by continual trampling, fired areas urgently in need of regeneration are grazed, while forest roads have to be continually cleared of stones and debris dislodged by flocks on the slopes above.

22. In spite of the very adverse conditions described above, it is encouraging to be able to record that the general forest grazing situation greatly improved during the year. A very great advance towards the settlement of the forest grazing problem was made when Government concluded amicable agreements with Kykko, Makhera, Troödhitissa and Stavrovouni Monasteries, whereby their forest grazing privileges were relinquished for cash or land compensation. The conditions of these agreements are of such importance to forest administration that the main points are given briefly as follows :—

*Kykko*.—The Monastery agreed to relinquish its grazing privilege for 2,500 goats to graze in the forests ; to dispose of all its forest grazing goats and demolish all mandras (goatfolds) in the forests to the satisfaction of Government by the 31st December, 1939 ; to relinquish to Government all lands or grafted trees, or claims to same, within the forests ; to relinquish its privilege for free fuel and timber in respect of all the *metochia* (outlying farms) of the Monastery. This latter privilege will, however, continue in respect of the domestic needs of the main Monastery situated near Milikouri. The Government granted the Monastery monetary compensation of £10,100.

*Makhera*.—The Monastery agreed to relinquish its grazing privilege for 740 goats to graze in the forests, to dispose of all its forest grazing goats and demolish all mandras (goatfolds) in the forests to the satisfaction of Government by the 7th September, 1939 ; to relinquish to Government all lands and grafted trees or claims to same within the forests ; to relinquish its privilege for free timber absolutely and its privilege for free fuel in respect of all *metochia* (outlying farms) of the Monastery. The privilege for free fuel will, however, continue in respect of the domestic needs of the main Monastery buildings. The Government granted the Monastery monetary compensation of £2,500.

*Troödhitissa*.—The Monastery agreed to relinquish its grazing privilege for 100 goats to graze in the forests ; to dispose of all its forest grazing goats and demolish all mandras (goatfolds) in the forests to the satisfaction of Government by the 31st December, 1938 ; to relinquish absolutely any privileges for free fuel or timber or any lands and grafted trees or claims to same in the forests. The Government granted the Monastery monetary compensation of £300.

*Stavrovouni*.—This agreement was not drawn up as a forest agreement as was the case with the other three. It represented a comprehensive settlement of land disputes outside the forests, but was concluded on the condition that a clause be included whereby the Monastery relinquished its free privilege to graze 330 goats in the Stavrovouni forest. The basis of this agreement was land settlement other than forest land and Government did not grant any monetary compensation.

The purpose of concluding such agreements is to rid the main forests of the heavy damage caused by such permitted usages. Government is anxious to eradicate such privileges from the main forests, but it was thought that no advancement could be expected so long as the monasteries enjoyed such extensive forest privileges. As a result of these agreements being amicably concluded the monasteries are to be congratulated upon having set a most praiseworthy example to the public. From a technical forest point of view the conclusion of these agreements probably represents the soundest capital investment in forestry, which has ever been undertaken in Cyprus.

23. Forest grazing is one of the most vexed and difficult problems with which the forest administration is faced in Cyprus. But with the signing of the Monasteries' agreements the whole question was presented in a more hopeful position. The Monasteries were amongst the largest forest graziers in the Colony and when their flocks have been eradicated from the forests it is safe to say that a most important step towards forest protection will have been achieved. The knowledge that Government had concluded agreements with the Monasteries produced the most profound effect upon the numerous private forest graziers who are privileged to graze goats in the main forests. It was realized that the Government intended to pursue this policy further, and provision was made in the 1939 estimates to provide funds for paying cash compensation to certain village graziers in Paphos forest. It was made clear to the village graziers that they would receive perfectly fair treatment but that in certain areas they would be required to relinquish their grazing permits for cash compensation. The response to this action proved very satisfactory and a considerable number of grazing permit holders voluntarily approached Government and proposed to give up shepherding and dispose of their flocks in exchange for cash



compensation. Judging from this present attitude of many of the village graziers who have spent their whole lives as forest shepherds it seems certain that the main forests can be successfully freed from the scourge of goat grazing. But it is equally apparent that it must be a gradual process which will only succeed if brought about amicably as a result of giving the shepherds a fair deal. It is, however, most significant that even after an excellent forest grazing season such as the shepherds have enjoyed during 1938, many of the old type of die-hard shepherds should voluntarily wish to give up their lifelong profession. This would seem to indicate that forest grazing with all its risks of losses and meagre returns is not really worthwhile if any sound alternative is available. Hitherto Paphos forest has always been regarded as the real stronghold of forest grazing in Cyprus. But it seems now that the shepherds of that area have been the first to realize that cash compensation plus the probability of regular employment on forest works is really much more attractive than continuing their age-old but precarious profession.

24. It is the policy of the Forest Administration to rid the main hill forests of goat grazing, but it is fully realized that the forest grazing community, though it only represents a tiny minority, cannot be evicted from the forests quickly or harshly. The 1919 and 1924 fired areas still stand as reminders of the irreparable destruction caused by a handful of ignorant shepherds who at that time considered firing their forests as the best way of resisting attempts to bring forest grazing under control. The Forest Administration is also fully aware that there is still a large amount of forest grazing which is inevitable until the time is ripe for its eradication. It is, therefore, its policy to compel habitual forest shepherds, who are not free permit holders, to take out grazing permits on payment, since it is thought better to legalize the position for the present rather than have the flocks grazing unlawfully and thus be a continual source of friction and discontent.

25. Public opinion has recently been most enlightened and helpful towards the necessity for curtailing forest grazing. There is also a growing and determined strength of opinion in the villages that the grazing minority shall not continue to prevent tree planting and general progress by the majority who desire it. In this connection it is interesting to note that the progressive villages are steadily seeking protection from the ravages of unrestricted grazing over their properties by the application of the Goats Law of 1913 and the Village Tree Planting Law of 1930. The Goats Law of 1913 provides for the exclusion of goats from the village boundaries if a majority of the villagers by ballot desire the law to be applied to their village lands. The application of this law affects forest grazing very greatly when it is applied by villagers bordering the forests, because firstly large areas of forest are included in the village boundaries of such villages and, therefore, become closed to goat grazing by law; and secondly it removes much of the likelihood of flocks of goats grazing unlawfully in the forests, if the bordering villages do not possess goats. Up to the end of 1938, 143 villages had applied this Law, six of which had sought its application during 1938. The Village Tree Planting Law of 1930 provides for the exclusion of all grazing from certain agreed upon areas within the village boundaries. Such areas are then reserved for tree planting in one form or another, but usually for the purposes of horticulture. The application of this law also affects forestry, but mostly indirectly. For example, when applied by villages adjacent to the forests, it may act beneficially in keeping the flocks further away from the forests. But its great value from a forest point of view is in making tree planting possible by the villages, which ultimately provides them with fuel and timber for their own consumption and so relieves pressure on the forests for these necessities. Up to the end of 1938, 128 villages had applied this Law, twelve of which sought its application during 1938. The application of these laws by village communities indicates, in fact, that the more progressive villages are at last realizing the impossibility of continuing to allow unrestricted grazing over their lands by the shepherding minority and are now taking active steps to curtail grazing.

26. Appendix 10 gives details of the incidence of grazing during 1938 as compared to 1937.

### 3. PROTECTION FROM FIRE.

27. During the year 37 fires were reported, which burnt an area of 512 donums of forest land and an estimated total volume of 12,800 cubic feet of timber in the round; caused an estimated damage of £142 and cost £48. 3s. 8p. to extinguish. For comparison the corresponding figures in 1937 were 50 fires, which burnt 5,490 donums and an estimated total volume of 21,500 cubic feet; caused an estimated damage of £732, and cost £218. 2s. 5p. to extinguish. Of the 37 fires reported in 1938 only 4 were proved or thought to have been set maliciously or intentionally and one was caused by lightning; all others were either accidental or of unknown cause. Practically all fires were of small size and were located and extinguished quickly before they got out of control. It is gratifying to report that a steady decline in the number of forest fires is taking place and less damage was caused in 1938 than

in any other year for which records are available. This is believed to be the result of more efficient methods of fire detection and fire fighting and of the speedier access to forest areas provided by recent road development, combined with greatly increased co-operation on the part of the villagers and the public generally.

28. It is believed that the working of the forests under sustained yields and the consequent provision of regular employment for most of the contractors and forest workers has greatly contributed towards reducing the incidence of malicious fires. Also the policy adopted during the last few years of working fired areas departmentally and thus preventing private persons from reaping a profit from fired areas appears to have proved an effective deterrent to one form of deliberate fire which was of regular occurrence in the past.

29. Fire lookouts were manned through the summer, and the fire protection system functioned smoothly and efficiently as in the past few years. In the Southern Range mountains the fire guards were stationed on ten prominent summits connected on the forest telephone system. Their sole duty during the summer months was to keep a look out for fires and immediately upon spotting one to telephone the divisional headquarters giving the exact number of degrees of the direction of the fire read off from an alidade mounted on a correctly orientated dial. By taking two or more readings from widely separated fire stations the divisional headquarters were able to plot the intersecting bearings quickly, and thus accurately ascertain the exact position of the fire. In the Northern Range Division and in the Makhera range of Troödos Division, where there are no forest telephones, fire location had to be done by fire guards, without telephones, but this obsolete method is slow, inaccurate and unreliable. Appendix 11 gives details of fire protective works and fire incidence.

#### 4. PROTECTION FROM ENCROACHMENTS.

30. Encroachment of cultivations into the forests is very prevalent. The reasons for so many encroachments are firstly, that the boundary marks of the forests are inadequate. They are frequently placed in positions which are very far apart with several steep valleys between them, so that there are frequently many positions on the line between two boundary marks from which neither boundary mark may be visible. Also the boundary marks themselves are not durable, being constructed only of stone rubble and lime mortar, so that they are often in a partly fallen condition in which they cannot be easily seen. Secondly, owing to the increasing population more and more land is broken up for cultivation. This of course is inevitable, but whereas formerly the forests were mostly surrounded by uncultivated land, now, in many areas, the cultivations are right up to the forest boundary line. This of course enormously increases the likelihood of encroachments occurring. Thirdly, many encroachments are deliberate with the purpose of claiming the ownership of the land in due course. Unfortunately for many years this practice has been tolerated with the result that large areas of forest lands have had to be conceded to private ownership. It is hoped, however, that the new Forest Law now being drafted will effectively put an end to such practices. Appendix 5 shows that 258 cases of land encroachment were dealt with in 1938 compared with 239 in 1937, but these figures do not show the true position, since many small encroachments are amicably settled divisionally without necessarily being recorded on prosecution forms and, therefore, would not appear on Appendix 5.

#### 5. PROTECTION FROM WIND AND SNOW.

31. During 1938 the forests were not subjected to any severe damage from wind, but during the early months of the year there were heavy snow falls which caused considerable damage, particularly in Troödos forest. Most of the damage occurred in the dense pole crops and thickets of close grown regeneration, which tended to collapse under the weight of snow. Aleppo pine (*Pinus halepensis*) appears to be much more susceptible to snow-break than is Troödos pine (*Pinus laricio*) even though it grows at lower elevations than Troödos pine. This would seem to be owing to its form of growth not being so well adapted to withstanding the weight of snow.

#### 6. PROTECTION FROM INSECTS, FUNGI AND BIRDS.

32. The insects which cause most damage in Cyprus forests are the processionary moth (*Thaumetopoea wilkinsoni*, Tams.) and various wood and bark borers. The processionary moth caterpillars defoliate conifers, particularly *Pinus halepensis* and produce the nests which are such a common sight hanging on the branches of pine trees in Cyprus. During the spring there was a heavy attack by processionary moth caterpillars, and in some areas particularly in the Northern Range and at the lower elevations considerable areas of trees were almost completely defoliated. Fortunately, however, few of the defoliated trees actually die though their increment is curtailed. At present no satisfactory remedy for this pest has been found which is practicable for application over large areas at reasonable cost. Damage from wood and bark borers was not noticeably severe on living trees during 1938. Their activities

have, to some extent, been curtailed in recent years, owing to the systematic clearance of old and defective trees and the reduction of fired areas available for them to work and breed in. No direct expenditure was incurred in combating insect pests.

33. Very considerable damage is caused to mature standing pine timber by a fungus which attacks the heart wood of living trees and causes the destruction of the timber between the annual rings. It is usually more prevalent in over-mature trees and is sometimes so severe in local areas as to affect the calculated yields of squared timber to be expected from exploitation works. Trees which are badly infected with this fungus are of use only as fuel. The systematic felling and clearance of over-mature and defective trees and also trees bearing fire or resin-tapping scars from Turkish times, which form a good harbourage for fungi, is tending to reduce the prevalence of fungus pests. No direct expenditure was incurred in combating fungus pests.

34. Considerable damage was noticed in the newly-sown areas by birds eating either the seeds or the cotyledons of pines. During the autumn months partridges and wood pigeons are fond of eating pine seed, and at that time of year it is common to find that the crop contents of these birds contains a high proportion of pine seed. They will also graze pine cotyledons off when green food is scarce. But though these indigenous birds may do considerable damage in certain areas, it is thought that the chief damage is done by migratory finches which usually visit Cyprus in very large numbers during autumn and winter. Loss from bird damage in the sown areas is a considerable factor to be reckoned with.

#### 7. PROTECTION OF PRIVATE FORESTS.

35. As in the previous year, only two woodland estates of a total area of 14,458 donums were under the protection of the Forest Department during 1938. Fees for the protection of these properties, under Forest Law No. 12 of 1889, amounted to £10. 6s. 6p. Owing to the necessity for concentrating as many of the forest staff as possible for work in the main forests, it was found necessary to keep the number of private properties under the protection of the Forest Department down to the minimum.

#### 8. FOREST OFFENCES.

36. An analysis of forest offences settled during the year is given at Appendix 12 (A) and (B) and a summary is given on Appendix 5. It will be seen from these Appendices that the total number of forest offences is reduced from 5,011 in 1937 to 4,978 in 1938. This reduction is only slight, but it is interesting to note that 54% of the total cases were reported from the Northern Range Division and the Nicosia and Larnaca lowland forests. This clearly shows that the greatest pressure is on those areas which have already been very largely denuded and are, therefore, least able to stand it. This perhaps is only to be expected since those forests are the nearest and most readily accessible areas to the Mesaoria plain and the south-eastern fuelless parts of the Colony. But it clearly illustrates the need not merely for tightening up control in those areas, but more particularly the urgency for establishing fuel supplies for the villages in the plains and south-east. It is also of interest to note that 749 cases out of the total, or 15%, were warned departmentally without any further action being taken. Warnings are given in the case of first offenders or petty offences with the objects of showing leniency when it is due, and more particularly in order to assist the Courts to recognize habitual offenders.

### IV. MANAGEMENT.

#### 1. FOREST POLICY.

37. The policy of the Department was to make the maximum use of the forests to comply with the requirements of the people, so far as that was compatible with sound and efficient technical forest control. Unfortunately the forests of Cyprus are not extensive enough nor productive enough to supply anything like the whole of the demands made on them, but whenever possible those demands were met. In order to fulfil this policy the Department concentrated its full strength in the main hill forests in order to maintain, protect and work those areas to the fullest extent allowed by the funds and means available. This left most of the minor forest areas unprotected and uncontrolled, except in so far as the District Commissioners were able to arrange for these areas to be patrolled and protected by Rural Constables. As a result it is regretted that very severe damage occurred to many of the minor forests, but this, unfortunately, could not be avoided, since the available forest staff was inadequate to afford protection to all areas. It was, therefore, thought best to concentrate upon effective control and working of the more important hill forests.



## 2. WORKING PLANS.

38. The field work was continued in Paphos main forest under the general supervision of the Assistant Conservator of Forests in charge of Paphos Division. Three field parties were out and a total of 2,560 temporary sample plots were laid out. The enumeration of the Ayios Merkourios, Yialia and Livadhi felling series of the Western Range of Paphos forest was completed. All field work in connection with the whole of Paphos forest is, therefore, completed, and it now remains to complete the drafting of the actual working plan reports for those felling series, which have been mapped and enumerated since 1936. These felling series, however, although lacking written plans, are being worked systematically on the basis of the stock maps and compartment registers. Appendix 3 gives details of the areas of forests now under working plans.

## 3. ROADS.

39. The opening up of the main forest areas by the construction of roads forms an important part of the development and control of the forests. Road construction was executed either by direct expenditure, when funds were available, or by making the construction of a certain length of road a condition to the sale of a coupe of standing timber. The latter method could of course only be employed in areas which contained exploitable timber.

40. During 1938 a heavy programme of road construction was undertaken. The first work to be undertaken was to reopen the Ayia-Kannaviou and Limnitis roads in Paphos forests which had been closed ever since they were destroyed by floods in 1936. The Ayia-Kannaviou road was retraced and reconstructed on a much improved trace situated as far as was possible above the level of possible future flood damage. Three new bridges were constructed on this stretch of road at Daphni, Asprokremmos and Pahnoudi. The Limnitis road was reopened but was not retraced, this being a work which could not be undertaken with the funds available.

41. The Kykko-Pedhoulas road was opened to traffic in September. This road is eleven miles long and has been under construction for several years, it is still far from complete, though opened to traffic, and work will be continued in future years. The opening of this road completes the central main route through Paphos forest from Troödos to Kykko and Stavros and then on to either Polis or Ktima; it is an essential line of forest communication and also one of the finest scenic roads of the Colony. The most interesting feature of this road construction was the erection of a permanent trestle bridge of creosoted baulks spanning Troullia cliff crevice, 73 feet wide and 50 feet deep. Advice was sought from the Public Works Department, but it represents the most ambitious piece of bridge construction yet attempted by the Forest Department. Owing to difficulties encountered during the construction of this road through the private properties of Pedhoulas villagers, it was found necessary to hand over that part of it to the Commissioner. Accordingly, shortly after the road was opened to traffic the eastern part from Pedhoulas village up to Troullia bridge was handed over to the Commissioner for completion and future maintenance.

42. Considerable progress was made on the following roads in Paphos forest which are under construction by purchasers of standing timber coupes as a condition of sale, but which remained uncompleted at the end of the year:—

<i>Name of Road</i>	<i>Length of Section</i>			
Paleokhorio section of the Cedar road	..	..	..	2,900 yards.
Upper Ayia road (final section)	..	..	..	6,160 "
Stavros-Vroisha (final section)	..	..	..	8,800 "
Mavrosykies-Tsakistra road	..	..	..	2,000 "
Total—about 11½ miles.				

43. In the Northern Range Division work was continued on the construction of the Halevka-Apadhi road and about three miles were constructed. This road will ultimately connect Halevka with Kharcha and Ayios Amvrosios villages and will provide a useful link for both the Forest and District Administrations besides being a very fine scenic road.

44. In Troödos Division the Lythrodhonda-Prophitis Elias road was constructed, the total distance being about four and a half miles. This forms a useful access road into the eastern part of Makhara forest which was hitherto untapped by road. The greater part of the cost of this work was advanced privately by a property owner requiring road access. The Nikitari-Asinou road was completed up to Asinou church, a distance of about two and a quarter miles. This road was constructed by purchasers of standing timber as a condition of sale. It provides access into Block II of Adelphi forest, which is a productive area of forest, as well as to Asinou, the site of a Byzantine church to which there was previously no means of access by

road. Work was also started on the Xyliatos-Lagoudhara road to tap Block IV of Adelphi forest and the Madhari road to tap the hardwood coppice areas of Block III of Adelphi forest. Work on these two roads will continue as circumstances allow. In Troödos forest £540 was spent in constructing well-graded permanent bridle paths for access purposes in areas where full width roads are not yet necessary. Appendix 4 shows details of road construction and road maintenance works.

#### 4. BUILDINGS.

45. For some years the need for properly built living quarters and patrol stations in the forests has seriously affected the efficient working and control of the forests. But during 1938 a programme of forest building construction was started, which, when completed will enable the main forests to be properly controlled by a staff that will be mostly independent of village living quarters. The new buildings are constructed in various standardized designs and either replace old structures which are unfit for further use or are erected at strategic positions where no forest buildings previously existed. During the year new buildings were erected as follows: New Assistant Conservator of Forests quarters were provided at Halevka. A comprehensive forest station including rest house, Forester's and Forest Guard's living quarters to serve the requirements for the Western Range of Paphos forest was erected at Yialia. A rest house and patrol station to serve the staff of both Paphos and Troödos Divisions was erected at Xerargaka. Combined patrol stations and rest houses were erected at Livadhi and Peravasa in Paphos Division and at Platres in Troödos Division. At Vroisha sawmill a mill foreman's quarters and a shed to cover the whole of the machinery were erected. In addition to the above new buildings certain others were improved as follows: The Assistant Conservator of Forests quarters at Platania were reconstructed and enlarged, an upper storey was constructed on the divisional office at Stavros, Panayia bridge station was reconstructed and enlarged. Some of the works mentioned above were not completed by the end of the year, but provision was made for their completion in 1939. During the year £1,934. 6s. 5p. was spent on new building works, £526. 0s. 2p. on maintenance of existing buildings and £136. 5s. 6p. on maintenance of station equipment.

#### 5. TELEPHONES.

46. The forest telephone system was maintained for the purpose of fire detection and general control. This system consists of a fairly complete telephone service over Paphos, Troödos and Adelphi forests, but nowhere else in the Colony. A very great improvement in the general efficiency and usefulness of the forest telephone system was brought about as from 1st October, when the Cable and Wireless and Forest telephone systems were connected at Platania forest station. This enabled the Department to scrap the long length of line between Nicosia and Panayia bridge station, which was constantly in disrepair. This improvement also greatly reduced the length of the forest trunk lines which was formerly a great defect on our single line system. From the time of the connection of the two systems at Platania it has been possible to speak direct between all points on both systems, which is an enormous improvement in general communications. Details of the telephone works executed during the year are shown on Appendix 11.

#### 6. WATER SUPPLIES.

47. The forests were again called upon to supply water for use outside the forests. The public were allowed to tap 3 springs free of charge. 15 other springs, 13 water channels and 9 wells, one of which had an air-motor, were leased for rents amounting to £11. The sum of £197. 9s. 1p. was spent on the improvement of water supplies required for departmental purposes.

#### 7. LAND LEASES.

48. Since the former policy of leasing low-land scrub forest areas for cultivation for a five-year period did not prove a success, many applications for such leases were refused. Also many leases which expired were not renewed. The number of new leases entered into were mostly confined to leasing encroachments which had previously occurred and were cases which it was thought undesirable to take before a Court with a view to eviction. During the year 715 separate leases covering a total area of 5,838 donums were in force. The total rent collected from leases of land was £340. 1s. 5p.

49. A scheme for the formation of co-operative land leasing societies is under consideration for application to certain of the minor forests which contain good agricultural land. Under this scheme land would be leased to members of the societies under certain conditions that would ensure tree planting, soil erosion control and security of tenure for the tenants. It is thought that such an arrangement would make certain of the minor forests more productive than is the case at present, while at the same time bestowing upon the villagers a sufficient interest for them to protect, maintain, and improve the productivity of the leased areas.

## V. EXPLOITATION.

## 1. TIMBER MARKETS.

50. The total yield of Cyprus timber is consumed within the Colony, and in addition a large quantity of timber has to be imported to supply the demand. In view of this position the export of Cyprus timber is prohibited. Throughout the year there was a very keen demand for local timber and although the prices of imported timber fluctuated somewhat, yet the demands and prices for local timber tended to improve throughout the year. There was very keen competition at sales of standing timber. The best quality local timber was mostly absorbed by the building trades of Nicosia and other expanding residential quarters; but the mining companies represent the largest market for local timber. More than half the total yield of local timber was consumed in the mines, their requirements included practically the whole output of round timber and a large proportion of the sawn timber, particularly of the lower grades. The villages also consumed considerable quantities of timber. The commercial timber of Cyprus is mostly Aleppo pine (*Pinus halepensis*), and to a much less extent, Troödos pine (*Pinus laricio*) both of which yield good constructional timbers. The best quality timber from these species is an excellent heavy resinous timber of the pitch pine type, and the local timber merchants are now well aware of the value of this timber as compared to the usual types of light white imported softwoods.

## 2. TIMBER YIELDS.

51. The total output of local timber from the State forests increased from 869,128 cubic feet\* in 1937 to 903,793 cubic feet,\* total stem volume over bark, in 1938. The forests are carefully worked on a sustained yield basis, but though the above figures show an increase of some 34,665 cubic feet, it must be recognized that yields cannot possibly be increased to keep pace with ever increasing demands. It is true that the forests are not yet yielding maximum production, but they cannot yield a very much higher total than the present figure. Exploitation works were mostly confined to those areas of main forests which were under working plan organization, *i.e.* Paphos, Troödos, Adelphi and Makhera forests. Such exploitation works as were undertaken in those parts of the main forests which were not under working plans were confined to scattered improvement fellings to meet local demands. Exploitation works in the minor forests were negligible.

## 3. TIMBER IMPORTS.

52. In spite of increased yields from the State forests, Cyprus is becoming increasingly a timber importing country. In 1936 timber importations were 696,393 cubic feet squared volume, in 1937 999,172 cubic feet, and in 1938 1,191,978 cubic feet. These figures show a very rapid increase in the consumption of timber in Cyprus and there appears to be every indication that imports must continue to increase as the building and mining trades expand, unless suitable substitutes for timber are more generally employed than at present.

53. Import duties on timber are as follows:—

Description	Unit	Rate of Import Duty.			
		Preferential Tariff		General Tariff	
(a) Planks, boards, logs, beams and rafters of mahogany, walnut, oak, teak and beech	per c. foot	..	p. 4	..	p. 6
(b) Other planks, boards, logs, beams and rafters .. .. .	per c. foot	..	2½	..	3½
(c) Plywood .. .. .	<i>ad valorem</i>	..	20%	..	30%
(d) Other, not otherwise specified .. .. .	<i>ad valorem</i>	..	20%	..	30%

Exemption from import duty on mines timbers is allowed on all round timber, not exceeding 12 inches diameter, for use underground; and on a quantity of sawn timber for use underground not exceeding 90% of the quantity imported for use underground in the mines of the importer during the previous year. These exemptions are in force for one-year periods, at the end of which the position is reviewed and may, if necessary, be revised to suit the requirements of the local timber trade. So long as the price of imported mines timber, free of duty, is more than that of similar classes of local timber, such exemptions do not adversely affect the local timber trade.

\* These figures include the yields of small pieces required by the plough, cart and chairwood industry (*vide* paragraph 59), but exclude the volume of woodfuel extracted from the forests.



#### 4. WOOD FUEL.

54. At present practically all the fuel requirements of the Colony are supplied by wood fuel. But owing to the lime burning industry and the growing demands of an increasing population the wood fuel resources of the Colony have been very seriously depleted. It is clearly recognized that the rate of wood fuel consumption is now higher than the Colony's rate of production and so, inevitably, the wood fuel producing areas are being steadily cleared and are receding to the more inaccessible highlands. In view of this position the export of wood fuel and charcoal has been prohibited, the importation of coal is exempted from import duty, and special efforts are being made to conserve the Colony's wood fuel resources.

55. There was a very keen demand for fuel of all classes and the greatly improved forest road communications enabled fuel to be put on the market at economical rates from areas which hitherto could never be economically tapped on account of their inaccessibility. 8,445 tons of fuel were sold from the State forests for a revenue of £739. 8s. 1p. In addition it is estimated that a further 2,715 tons of fuel were put on the market from the branchwood of trees sold as standing timber; the value of this fuel is not shown separately, but is included in the revenue from standing timber. It is also estimated that approximately 30,000 tons of fuel were removed from the State forests under permits and by free right or privilege holders. 4,292 fuel permits were issued for £70. 4s. 2p. in 1938 as compared to 401 permits for £32. 13s. in 1937. This increase is explained by the adoption of the ticket system for fuel sales. As far as possible readily accessible cheap supplies of fuel were provided for the domestic needs of the villages surrounding the forests. The ticket system of fuel sales was introduced experimentally during the latter half of the year in certain areas. The basis of this system is to supply books of tickets to forest staff, village mukhtars, and others for sale to villagers needing small quantities of fuel for sale or domestic needs. The tickets are valid for one day only and cost two piastres each, for one donkey load of fuel. The possessor of a ticket could then cut certain stated classes of fuel from certain stated areas of forest and need only produce his valid ticket to the forest staff as evidence of lawful possession. Generally speaking this system worked very well and was welcomed by the villagers as a much needed facility. In this and other ways the rural population was encouraged to get their fuel requirements from the forests by the lawful means provided for them and give up the time honoured practice of theft and its consequent friction with the forest administration.

#### 5. CHARCOAL.

56. There is a considerable charcoal burning industry in Cyprus, but the greater part of this product comes from the private lands and vacant scrub lands which are not under the control of the Forest Administration. There is a ready demand for good quality charcoal as it is a popular fuel for cooking and heating purposes. The Colony is self-supporting in charcoal; none is imported, nor is it allowed to be exported. Charcoal burning is mostly an occupation carried on by the poor, and so it is usually intensified during hard times when much unlawful charcoal burning takes place in the forests. But 1938 was not a year of serious unemployment and so there was little need to resort to charcoal burning as a last means of livelihood. The industry as at present carried on is not organized and so the demand is not properly supplied; for example the old type of earth kilns are customary and so the quality of the charcoal is usually poor, also supplies are very irregular, consequently large and sudden fluctuations in prices are common. During 1938 a start was made to reorganize charcoal burning on an economical basis. Four iron charcoal kilns of about 1½ tons charcoal capacity were acquired by the Forest Department and leased out to charcoal burners in the Paphos forest area who learned how to operate them and took up this innovation with enthusiasm. These kilns produce better quality charcoal both quicker and cheaper than the old type of earth kilns, and the local merchants already offer higher rates for charcoal from the new kilns. It is hoped to organize an economical charcoal burning industry with portable iron kilns in the hardwood coppice areas of the southern mountain forests, which have hitherto been too steep and inaccessible for earth kiln charcoal burning to operate there.

57. It is the custom in Cyprus to uproot certain hardwood species and burn the stumps to charcoal. This custom has no doubt arisen owing to there being insufficient suitable material growing above soil level for the needs of the charcoal burners in many areas. Nevertheless it is an extremely imprudent and harmful custom, since certain species which yield the best quality fuel are gradually being exterminated from certain areas, while at the same time it encourages soil erosion. It was, therefore, found necessary to stop this practice in the forests, and so during the year the uprooting of any stumps or plants for charcoal burning or fuel purposes from the forests was prohibited.

58. The yield of charcoal from the forests is at present comparatively small owing to the fact that the greater part of the industry is carried on outside the forests. During 1938, 581 tons of charcoal were extracted from the State forests for £104. 3s. 7p. revenue as compared to 908 tons for £316. 4s. 4p. in 1937.

#### 6. PLOUGHWOOD, CARTWOOD AND CHAIRWOOD.

59. Wooden ploughs, cartwheels and other parts of carts and agricultural implements are locally made from dwarf oak (*Quercus alnifolia*), while village chairs are mostly made from arbutus (*Arbutus andrachne*). The production of such articles are local industries which require supplies of small sized timber of particular natural shapes. This material is contained in the hardwood coppice coupes which are sold by auction. The purchasers usually select out suitable stems before the remainder is worked for fuel. Recent sales of coppice have readily supplied the demand and flooded the limited market for this class of timber. 8,289 cubic feet of timber for these purposes was extracted from the State forests in 1938.

#### 7. TROUGH MAKING.

60. Trough making is a highly specialized local industry which is followed by only one village in the Colony—Moutoullas. These craftsmen fashion one piece wooden troughs of various sizes from pine logs. These troughs serve as general household articles in the villages, and have been used from time immemorial. In spite of the numerous cheap modern metal substitutes available the demand for local wooden troughs does not appear to decrease. The trough making industry is a wasteful one since most of the tree is lost as chippings in the forest, but to offset this the purchase price paid for individual trees suitable for this trade is invariably considerably higher than the value of the tree for ordinary timber conversion purposes. For this reason the trough makers are always welcome at sales of standing trees.

#### 8. WILD FRUIT TREES.

61. The forests contain many wild olive, carob and hawthorn trees. Some of the poorer forest areas contain such quantities of these species that they form an important part of the crop or soil cover. There is a constant demand for healthy stocks of these species from the forests for transplantation and subsequent grafting in private properties for horticultural purposes. 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, while needless to say, any forest trees which grow near enough to cast shade upon grafted trees are ringed by the owners or claimants. In view of these difficulties experience dictated the necessity of excluding these species from the main forests, as far as possible. Previously a charge was made for grafting stocks from the forests but in view of the urgent need for encouraging the villagers to take up tree planting, the charge was removed as from the 10th January, 1938, and from that date all issues of grafting stocks were made free of charge. During the year 41,593 grafting stocks were issued from the forests as compared with 17,409 issued in 1937. These figures show that village tree planting is increasing very rapidly, and record a very satisfactory response to the policy of issuing free grafting stocks.

#### 9. MINOR FOREST PRODUCE.

62. The sales under this item of exploitation decreased from £593. 4s. 6p. in 1937 to £277. 6s. 4p. in 1938. The chief reason for this decrease was reduced revenue from sales of fruit, owing to a poorer crop of carob beams, which realized £446. 4s. 4p. in 1937, against £135. 12s. 2p. in 1938. Royalties from organum oil yielded the next largest item of £115. 3s. 7p. from 23.03 cwt. of oil. Appendix 7 shows the outturn of minor forest produce from the State forests during the year.

#### 10. AGENCY OF EXPLOITATION.

63. With the exception of timber worked out from fired areas, all exploitation during the year was in the hands of private persons. All forest produce was sold by auction, tender, or fixed prices. The latter method was only employed for certain materials which it was found inconvenient to sell by auction or tender, but fixed price sales are being reduced in favour of the other two means of sale. All timber and coppice, except that extracted from burnt areas, was sold standing or in the forests. Most exploitation works were carried out under contracts with the purchasers in which the Forest Department retained sufficient control over the methods of exploitation to safeguard the future crop, though all work was done by the contractors.

64. An important development of timber exploitation was the decision of the Cyprus Mines Corporation to discontinue purchasing their local supplies through village timber contractors, but to purchase their requirements direct from the Forest

Department as coupes of standing timber and sub-contract out the working of the coupes to village timber workers. This change meant that the Cyprus Mines Corporation directly purchased a large proportion of the standing timber offered for sale and that more timber was removed from the forests in the form of round logs direct to the Company's own sawmill at Xeros. Thus the need for Forest Department sawmills was still further reduced. Also since the Forest Department was dealing very largely with a single large purchaser, it tended to facilitate the general control of logging operations and the collection of revenue. But, however, considerable difficulty was again experienced from the local practice of extracting logs by rolling them down the steep slopes over any regeneration which happened to be in the way. At present there is strong opposition to employ modern log skidding, but a strict policy was adopted with those contractors who caused avoidable damage by rolling logs and it appears that the position is tending to improve.

#### 11. EXPLOITATION OF BURNT AREAS.

65. Experience has proved that all burnt areas must be worked departmentally by direct labour. This is necessary to obviate the possibility of burnt areas being a source of profit and thus promoting deliberate fires for that purpose. As soon as a fire occurs the Department, therefore, salvages any timber it may require from the burnt trees and converts the remainder into rough log and brushwood terraces to hold up erosion till the area can be reafforested. During 1938 £149. 14s. 4p. was spent in working burnt areas compared to £349. 14s. 1p. in 1937.

#### 12. UTILIZATION.

66. A Utilization Section was maintained which dealt with all the usual matters relating to utilization and also was directly in control of all sawmills, telephones, machinery, reorganization of the lime-burning industry and so forth. It is not proposed to deal with all the details of this Section's work under this heading, since they are dealt with under the appropriate headings of this Report. The demand for forest products is so keen in Cyprus that there is comparatively little waste and all parts of the tree which cannot be economically used as timber can readily be sold as fuel. Efforts were, therefore, mostly directed towards obtaining a higher proportion of serviceable timber from the whole tree. The increasing practice of transporting round logs from the forests to private mills outside the forests is to be encouraged since it ensures complete utilization of the log. All timber conversion waste products such as slabwood, sawdust and bark are readily saleable at mills situated in the towns or commercial centres. All slabwood from the Government mills was utilized and all fuel from tops and branches was worked out by the purchasers of coupes. The old and wasteful method of handsawing in the forests is gradually decreasing and it is now only employed in the inaccessible areas which cannot conveniently be reached by extraction roads.

#### 13. SAWMILLS.

67. At the commencement of the year the Department had seven rack circular saw benches. Two of these were leased to private timber merchants and were in use at Nicosia and Prodhromos. The latter was subsequently moved from Prodhromos to Paphos town during the year and re-erected there. The Department retained one incomplete bench in store at Nicosia and had four complete sawmills in Paphos forest as mentioned below.

68. The Limnitis sawmill which had been idle since 1936 was sold by public auction on 4th April, 1938, and fetched £154. The reasons for disposing of this mill were that the steam engine power unit had previously been condemned as unsafe for further use, the area surrounding the mill had been worked out, and the proximity of the Limnitis valley to the privately owned mill at Xeros precluded the Limnitis mill from working economically. The Vroisha mill, which had recently been relaid, was in excellent working condition and was leased for part of the year to purchasers of standing coupes in the Fleyia valley. The Ayia mill was leased for part of the year to purchasers of standing coupes in the Ayia valley. The Moumouros mill was leased for a short time, but since the area accessible to this mill has been worked out it was decided that it should be moved to another site, probably near Kambos village, where it could be kept regularly employed. The work of moving this mill will be commenced in 1939. The rent collected from sawmill leases during 1938 was £79. 12s. 8p.

#### 14. TIMBER GRADING.

69. The system of timber grading for mines timbers which was introduced during the previous year at the request of the Cyprus Mines Corporation was discontinued during the summer, again at the request of the Company. The reason for stopping timber grading by Forest Department timber graders was because the Company were of the opinion that the work had by then been learned by their own storekeepers, who would be competent to do such work, and in fact they preferred that this work should be done by members of their own staff.

## VI. SILVICULTURE.

### 1. SILVICULTURAL SYSTEMS.

70. Since the forests of Cyprus must serve the primary purpose of maintaining a permanent forest cover for protection against rapid water run off and soil erosion, therefore, the silvicultural systems of management must not allow clear fellings, or excessive fellings. In the main hill forests there are two main types of crop which may be broadly described as coniferous high forest and hardwood coppice forest. These two types may be found either separate or mixed together according to altitude and locality. The coniferous high forest is worked on the selection system or modifications of it; these fellings might more correctly be described as selective improvement fellings with the object of removing mature or defective trees while at the same time promoting the growth of natural regeneration and thus building up the growing stock to a state of normality. The hardwood coppice forest forms a dense and most effective soil cover which is also worked selectively according to the diameter of the stems. All stems of five inches diameter or over being felled from the compartments being worked. This has been found to work very satisfactorily and leaves a sufficient cover to hold up erosion even on steep slopes. In the lowland plantations, however, where protection against soil erosion is not of such great importance, it is the practice to clear fell compartments of acacia and eucalyptus. This method 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. CLIMATE.

71. 1938 was a remarkably good climatic year for forestry. The highest rainfall recorded from the forest areas was 57.65 inches at Trikoukkia on the edge of Troödos forest, while the lowest was 15.15 inches at Kophinou near Stavrovouni forest. Not only was there a good total fall of rain over the year, but it was unusually well distributed and in the high level main forests of the southern range rain fell during every month of the year. Even at times when rain did not fall it was generally a humid summer with good dew-fall. There were also plentiful falls of snow which lay thickly on the southern mountains throughout the spring and did not finally melt till the first days of June. There were no excessive rains or winds which caused undue damage to the forests.

### 3. NATURAL REGENERATION.

72. Owing to the selective system of working the forests, by far the most important means of restocking the forests is by natural regeneration. Generally speaking the indigenous forest species regenerate themselves remarkably well up to the age of a few months, in fact till the summer months take toll of the seedlings. Year after year a most promising flush of natural seedlings is to be seen at the beginning of the summer, but by October all but a few have succumbed to excessive soil and air temperatures if not to actual drought. It is usually only a small percentage of the autumn germinated seedlings which survive. Spring germinated seedlings seldom survive, no doubt owing to lack of root development before the summer drought is upon them. For natural regeneration to succeed well, it is, therefore, essential to have adequate early autumn rains to establish autumn germination. Both 1937 and 1938 were similar in that there were good autumn rains, and as a result it has been noted that a promising proportion of the 1937 seedlings have stood the 1938 summer; it is to be hoped that the same will be true of the seedlings germinated in autumn 1938. Natural regeneration is noticeably stimulated immediately after an area has been felled over and the surface soil cut up by felling and logging operations. But on fired areas or on areas which have otherwise been unduly denuded of forest cover, restocking by natural regeneration is extremely slow, especially is this so should the aspect be a southern one fully exposed to the maximum sun temperatures. Owing to the type of selective forest found in Cyprus it is broadly speaking true to say that the whole of the forest area is continually under the process of natural regeneration.

### 4. ARTIFICIAL REGENERATION.

73. Artificial regeneration is necessarily limited by the funds available for that purpose, but in 1938 the sum of £1,100 was available under the "Silviculture" sub-head as compared to £700 in 1937. Such reforestation works as were undertaken fell broadly into one of three headings as follows: First the reclamation of fired areas, second the reforestation of Stavrovouni forest, and third the afforestation of certain lowland areas by planting. Each of these works may now be dealt with separately.

74. Fired areas, if not taken in hand immediately after the fire, degenerate very rapidly, especially is this so on steep slopes having a southern aspect. Under such conditions chronic soil erosion takes control and the area may even become a sliding scree or erode down to bare rock. Efforts were, therefore, directed towards reclaiming some fired areas in Paphos, Troödos and Adelphi forests. The



areas dealt with were roughly terraced with burnt logs, brushwood or stone according to which material was readily available. The terraces were then sown with pine seed. The success of this work varied very greatly according to the angle of slope, aspect of the locality, or state of erosion. In some areas it was highly successful, but in others it produced poor results. Those areas which failed will be treated in future years till success is attained.

75. The reforestation of Stavrovouni forest was commenced in 1937. This forest is an extensive area which has been almost entirely denuded of forest trees, though it is potentially an excellent Aleppo pine area. Fortunately, however, though it has lain unproductive for many years, it has a very fair ground covering of low bush which has largely protected it from degenerating into a rapid state of erosion. The method of restocking employed on this area was to broadcast pine seed on cleared contour strips about ten feet wide. Approximately 600 donums of land were seeded up in this way and £227 was expended on this work. The results, as always in Cyprus, were variable, but on the whole it was thought that the success achieved was satisfactory and fully justified the comparatively low expenditure.

76. The afforestation of certain lowland areas by planting was undertaken as follows: Polis marsh, which is a small malarial swamp near Polis town, was completely planted up with eucalyptus. Approximately 45 donums of land were planted up with eight thousand plants at a cost of £68. At Athalassa plantation, near Nicosia, planting was continued and approximately 135 donums of acacia coppice were underplanted with nineteen thousand plants for conversion to high forest at a cost of £52. At the fresh water lake marsh, near Famagusta, which is an extensive malarial swamp, planting with eucalyptus was continued. Approximately 335 donums were planted up with sixty thousand plants at a cost of £121. As a general rule, planting is only employed for establishing plantations at the lower elevations. In the main hill forests restocking by sowing seed is nearly always employed. Seeding is very much cheaper than planting and in the hills usually gives better results.

#### 5. NURSERY WORK AND SEED COLLECTION.

77. Seven nurseries were maintained during the year at a total cost of £226. 6s. 4p. Approximately ninety-nine thousand plants were raised which were used for Government plantation works or sold to private persons. 2,132 okes (2.67 tons) of forest tree seeds were collected at a cost of £45. 11s. 4p. Sales of surplus seed and nursery stock realized £24. 2s. 2p.

#### 6. CULTURAL OPERATIONS.

78. Cultural operations are not extensively done, firstly because they are not so necessary in the type of natural regenerated selection forests found in Cyprus, and secondly owing to cost. Thinning is generally not done as an intermediate felling, but as part of the major fellings, when the exploitable areas are felled over every ten years. It is the usual custom to mark all trees which need to be removed from a compartment, both as thinnings or mature trees in one operation. The whole coupe of marked timber is then auctioned and the purchaser fells and clears all marked trees. In this way thinnings are carried out without cost to Government. In some cases, however, Government undertakes direct cultural operations when the yield would not prove sufficiently attractive to contractors. It has also been found that the damage resulting from heavily crowned mature trees falling in dense regeneration is so heavy that it pays Government to lop off the side branches and crown before the contractor fells such trees. It is, therefore, becoming a custom to employ crown pruning when felling in heavily regenerated areas. The sum of £61. 6s. 4p. was spent in cultural operations during the year.

### VII. RESEARCH.

#### 1. RESIN TAPPING.

79. The resin tapping experiments on *Pinus halepensis* continued for the second year at Halevka in the Northern Range Division. The 1938 yield averaged 13.5 ounces per tree, which represents a 68% higher yield than that obtained in 1937. Previously the yields were thought to be disappointing so the 1938 increase came as a welcome surprise considering the trees tapped were all small trees of less than 50 years old, the majority of which were less than 30 inches girth. It was thought that the increased yields chiefly resulted from better tapping and supervision and that yields may yet be improved as those doing the work become more skilful. The sample of resin forwarded to the Imperial Institute in 1937 for analysis was reported on very favourably. It appears, therefore, that the development of a small resin tapping industry in Cyprus would be justified. However, as a preliminary, arrangements have been made to carry out a full sized field experiment during 1939, and a sufficient number of mature trees will be tapped in the Stavros valley of Paphos forest under practical commercial conditions. In the meantime all aspects of the possible development of this industry are being investigated.

## 2. SILVICULTURAL RESEARCH.

80. Silvicultural research was again centred upon the problem of getting a satisfactory survival of pine seedlings safely through the hot summer drought. Sowing experiments were continued in Stavrovouni forest for the purpose of finding the most successful method of sowing *Pinus halepensis* seed in order to overcome the effects of excessive soil and air temperatures. The results tended to show that contour strips, of about 10 feet wide, cleared of all scrub growth to allow of free air circulation and broadcast with seed gave the best success. But when employing this method it was found important to retain all scrub growth on the intervening strips and to collect all bushes cleared from the seeded strips for making rough brushwood terraces below the seeded strips and in the gullies in order to arrest soil erosion. An experiment at Kornos plantation to ascertain the effect of surface soil cultivation in place of watering upon one and two-year pine seedlings planted out from pots, gave negative results. At Stavros tests to ascertain whether soil inoculation improved pine seedling viability on soils that had been heavily burned, gave negative results. It would appear, therefore, that the heat generated by forest fires does not seriously affect the fertility of the soil. At Stavros successful trial planting of *Robinia pseudoacacia* was done with three-year-old nursery stock cut down to wands of six feet high and heavily root pruned. Transplanted in the autumn of 1936 on dry hillsides a sufficient proportion took root and are developing well. The object of using such tall plants was to reduce goat grazing damage.

## 3. TIMBER PRESERVATION.

81. For the first time in Cyprus very successful creosoting of bridging timbers was carried out by the hot and cold open tank process at Moumouroos sawmill in Paphos forest. The preservation mixture used was 60 per cent. fuel oil (mazut) and 40 per cent. creosote. The timber treated was *Pinus halepensis* which had previously been air seasoned. It was found that very good absorption was obtained throughout sapwood, but penetration into the heartwood was only slight. This preservation was carried out by treating the timber at a temperature of about 110° centigrade and then allowing it to soak and cool for about 18 hours. Tests were carried out on bridging baulks 12'×12"×12" and it was found that the absorption was comparatively low about 2 lbs. per cubic foot. This was mainly owing to these timbers being mostly heartwood and of a large size, but after careful examination it was considered that the outer part of the timber was sufficiently impregnated and that the timber was well preserved. Tests on smaller sized timbers of 8'×6"×3" of mixed heart and sapwood showed absorption as high as 25 lbs. per cubic foot.

## 4. TIMBER STRENGTHS.

82. The increasing demands of the mining companies for pit props and the lack of knowledge as to the relative value of Cyprus props when compared to imported Roumanian props led to strength tests being carried out on Cyprus props. A sample consignment of 120 seven feet pit props representing average first and second grade props, according to Cyprus grading rules, of both *Pinus halepensis* and *Pinus laricio* was sent to the Forest Products Research Laboratory at Princes Risborough for compression tests to destruction. The results of this test proved most satisfactory and it has been ascertained that graded Cyprus pit props are of excellent quality and well suited for mining requirements underground. The tests revealed further that Cyprus *Pinus laricio* props have similar strength values to Corsican pine props grown in the British Isles. Also that the *Pinus halepensis* props were approximately 28 per cent. stronger than those of *Pinus laricio*. It is hoped to carry out further strength tests on various classes of commercial Cyprus timbers as soon as possible. This important work is long overdue, for though Cyprus timber is used for all constructional purposes, yet there are no figures available to enable architects and engineers to make accurate calculations as to the loads which local timber should safely carry.

## 5. VOLUME TABLES.

83. Standard volume tables for *Pinus halepensis* have now been prepared and drawn up in draft form. Volume estimates based on the new tables are now being tested against the actual output from felled coupes.

## 6. LIME BURNING.

84. Lime burning is not normally a subject upon which a Forest Administration needs to carry out research, but in Cyprus there is an extensive lime-burning industry which at present consumes only wood fuel. It is becoming increasingly apparent that the demands for wood fuel are greater than the supplies available in Cyprus. It is also apparent that the lime burning industry consumes enormous quantities of wood fuel in large primitive kilns which are most uneconomic and wasteful in their consumption of fuel. With a view to relieving the Colony of this huge drain on its wood fuel resources, a thorough investigation was made of this problem throughout the year and much helpful information was obtained.

## VIII. FINANCIAL.

85. The total departmental expenditure and revenue for 1938 as compared to 1937 is shown as follows :—

			1937			1938		
			£	s.	p.	£	s.	p.
Expenditure	..	..	23,384	2	5	28,120	7	2
Revenue	..	..	13,735	15	1	13,073	10	4
Deficit balance	..	..	£9,648	7	4	£15,046	16	7

In addition to the above figures shown under the Forest heads certain other expenditure and revenue incurred under or collected from forest works was entered under other heads of 1938 Estimates, the total of which were as follows :—

			1937			1938		
			£	s.	p.	£	s.	p.
Expenditure	..	..	148	17	4	8,615	19	2
Revenue	..	..	643	4	4	860	5	1

All details of expenditure and revenue are shown on Appendices 8, 13 and 14.

86. The original estimate of revenue for 1938 was £8,500, but owing to satisfactory demands and prices for local timber, particularly in the mining and building trades, the actual amount collected was £13,073. 10s. 4p. It will be noticed that whereas the revenue collected in 1937 and 1938 is approximately the same, yet the expenditure is considerably increased during 1938, consequently the deficit balance shown on the total figures is very adversely affected. The increased expenditure, as may be seen on Appendix 14, is mostly in the nature of necessary non-recurrent capital expenditure which may not be immediately or directly revenue earning, as for example the construction of new roads, paths and buildings, reforestation, delimitation of boundaries, compensation for the removal of forest grazing flocks, and so on. However, bearing in mind the type of forests found in Cyprus, it is clear that the Department is unlikely to become self-supporting in the near future. But it must not be forgotten that there are still productive areas of Paphos forest, which hitherto have not been worked owing to their inaccessibility. When those areas are worked to full capacity, the yearly revenues may be expected to increase somewhat. Also the capital growing stocks of the forest crop are gradually being built up to a state of normality, which is necessarily a very slow process under Cyprus conditions. Further it must be fully appreciated that, though the direct financial result of the year shows a deficit, yet 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 protection and amenity of the main catchment areas. These extensive indirect values resulting from the forests cannot be expressed in terms of revenue to appear on the credit side of the forests balance sheet, but it is clear that they must far outweigh the apparent deficit.

## IX. ADMINISTRATION.

## 1. SENIOR STAFF.

87. The senior staff consisted of :—

MR. R. R. WATERER, <i>Conservator of Forests.</i>				
MR. B. J. REILLY, <i>Assistant Conservator of Forests, 1st Grade.</i>				
MR. F. S. DANKS	do.	do.	do.	do.
MR. G. W. CHAPMAN	do.	do.	do.	do.
MR. D. F. DAVIDSON	do.	do.	do.	do.
MR. I. SIDKI	do.	do.	do.	2nd Grade.
MR. T. A. COUPPIS	do.	do.	do.	do.
MR. P. A. C. DOUGLAS, <i>Forest Surveyor.</i>				

88. Mr. B. J. Reilly retired from the Colonial Service as from 13th January, 1938.

89. Mr. F. S. Danks was on leave from 9th April, 1938, to 12th October, 1938. During his leave he represented the Government of Cyprus at the Fourth International Conference on Timber Utilization held at Brussels between 15th and 17th September, 1938.

90. Mr. D. F. Davidson arrived in Cyprus on 27th October, 1938, to take up his first appointment in the Colonial Service.

91. During the year there were three territorial forest divisions, *i.e.* Paphos, Troödos and Northern Range Divisions. The Nicosia and Larnaca lowland forest areas were managed as a separate unit from the Headquarters Office. At the end of the year Mr. Chapman was in charge of Paphos Division stationed at Stavros, Mr. Couppis of Troödos Division stationed at Platania, and Mr. Sidki of Northern Range Division stationed at Halevka. The working plans parties were working in Paphos Division under the charge of Mr. Chapman in addition to his divisional duties. The Utilization Section was under the charge of Mr. Danks and the Survey Section under the charge of Mr. Douglas. Mr. Davidson was temporarily attached to the Headquarters Office.

## 2. SUBORDINATE FIELD STAFF.

92. The numbers and ranks of the established subordinate field staff were 4 Forest Rangers, 9 Foresters and 74 Forest Guards. This section of the staff are uniformed. There were no alterations in their numbers during the year. On the 1st January, 1938, the regrading scheme for the established subordinate forest staff came into force. This provided for simplified titles, higher scales of salary, and longer scales of increment. This welcome change eradicated many complications which had been sources of dissatisfaction. During the year the Secretary of State for the Colonies approved of the appointment of five additional posts of Forester as from 1st January, 1939.

93. The numbers of the unestablished subordinate staff were reduced by four, but during the year approval was received to increase the unestablished staff by twenty-two additional Forest Apprentices for patrolling and protective purposes, particularly along the Northern Range where the forests are very vulnerable to theft.

## 3. GENERAL CLERICAL STAFF.

94. Eight members of the General Clerical Staff were attached to the Department as in the previous year and no change was made in their numbers. Appendix 9 shows the strength of Forest staff on 31st December, 1938.

## 4. CONTROL OF FOREST WORKS.

95. Practically all forest staff was concentrated in the main hill forests, but again the shortage of staff was much felt this year. The Department was faced with a very heavy programme of works which it was difficult to execute within the year. The control of works was most difficult during the summer months when only one Assistant Conservator of Forests, 1st Grade, was available and the executive staff were insufficient to supervise constructional and exploitation works as well as attend to general protective maintenance, fire-fighting, and so forth. The result was that many works had to be limited according to the staff available to supervise and control them and not according to the prescriptions of the working plans as should have been the case. Fortunately there will be some increase in the executive staff next year which should help to alleviate the position.

## 5. ACKNOWLEDGMENT.

96. I wish to take this opportunity to express my sincere thanks and appreciation to all members of the forest and clerical staff for their assistance, co-operation, and loyal service.

17th May, 1939.

R. R. WATERER,  
*Conservator of Forests.*



## APPENDIX 1.

[Standard Form I.]

## AREA IN SQUARE MILES OF FOREST LAND ON 31ST DECEMBER, 1938.

Category of forest land	Total area of unit	State Forest				Private forest	Total forest land	Per cent. of whole area of Cyprus	
		Production reserves	Protection reserves	Unreserved	Total State forest			Forest reserves	Total forest land
Main State Forest	535.64	—	535.64	—	535.64	—	535.64	14.95	14.95
Minor State Forest	86	—	86	—	86	—	86	2.40	2.40
Private Forest	30 *	—	—	—	—	30 *	30	—	0.84
	appr.					appr.	appr.		
Total ..	651.64	—	621.64	—	621.64	30 *	651.64	17.35	18.19
						appr.			

\* No accurate figures are available.

## APPENDIX 2.

[Standard Form II.]

## STATEMENT IN SQUARE MILES OF PROGRESS IN FOREST RESERVATION AND DEMARCATION DURING THE YEAR ENDED 31ST DECEMBER, 1938.

*Reserves constituted and demarcated*

Category of forest reserve		On 1st January, 1938		Added during the year		Excluded during the year		On 31st December, 1938	
Main State Forests	..	535.74	..	0.02	..	0.12	..	535.64	
Minor State Forests	..	86	..	—	..	—	..	86	
Total	..	621.74	..	0.02	..	0.12	..	621.64	

## APPENDIX 3.

[Standard Form III.]

## STATEMENT IN SQUARE MILES OF PROGRESS MADE IN WORKING PLANS DURING THE YEAR ENDED 31ST DECEMBER, 1938.

Territorial Unit	Area under plans				Area not under plans on 31st Dec., 1938	Total area	Area for which plans were revised during the year
	On 1st January, 1938	Added during the year	Excluded during the year	On 31st December, 1938			
Main State Forests (intensive) ..	305.5	53.6	—	359.1	176.54	535.64	—
Minor State Forests ..	—	—	—	—	86	86	—
Total ..	305.5	53.6	—	359.1	262.54	621.64	—

## APPENDIX 4.

[Standard Form IV.]

## RECORD IN MILES OF FOREST COMMUNICATIONS FOR THE YEAR ENDED 31.12.1938.

Category of forest land	P.W.D. and village roads			Other roads (Forest roads)			Forest paths (bridle and inspection paths)		
	Added	Abandoned	Total at the end of the year	Added	Abandoned	Total at the end of the year	Added	Abandoned	Total at the end of the year
Main State Forests	3	—	116.45	12.62	—	142.47	28.03	—	475.43
Minor State Forests	—	—	68.87	—	—	14	—	—	121.63
Total ..	3	—	185.32	12.62	—	156.47	28.03	—	597.06

In addition to the information given on the standard form above the following information is given for local purposes :—

## COST OF CONSTRUCTION, MAINTENANCE AND REPAIRS OF FOREST ROADS AND BRIDGES.

	Sub-head No.	£	s.	p.
1. Maintenance of roads and bridges .. ..	22	1,099	9	8
2. Construction of roads .. ..	36	2,188	0	0
3. Special Expenditure for repairs of storm and flood damages to roads and bridges	37	997	0	1
4. Bridle paths .. ..	23	539	18	7
5. Other paths (expenditure incurred from sub-head " Fire Protection ") .. ..	12	138	12	0
Total .. ..		£4,963	0	7*

\* 8.12 miles of forest road and 3 bridges were constructed by buyers of coupes as conditions of sale. The value of timber given in exchange, estimated at £565, is not included in this figure.

APPENDIX 5.

[Standard Form V.]

SUMMARY OF FOREST OFFENCES FOR THE YEAR ENDED 31ST DECEMBER, 1938.

Category of offence	Cases taken to Court														
	Imprisonment without option of fine	Fined		Cautioned and discharged	Acquitted										
						Cases	Cases	£ s. p.	Cases	Cases	Cases	£ s. p.	Cases	£	Cases
Damage to forest by fire	1	3	— 5 0	1	—	7	3 19 0	—	—	12	16	—	—	3	27 7 6
Unauthorized possession of forest produce ..	1	603	133 11 2	20	17	1,583	265 8 0	—	—	2,224	2,330	105	25 8 2	603	84 2 8
Unauthorized fellings ..	—	330	103 13 0	7	8	840	147 17 1	—	—	1,285	1,514	17	4 7 0	330	66 7 8
Unauthorized grazing..	2	288	109 4 0	13	5	805	139 1 3	—	—	1,113	1,474	2	1 2 2	288	16 15 6
Land encroachments ..	—	49	38 4 0	10	4	195	101 18 0	—	—	258	337	—	—	49	25 10 3
Miscellaneous .. ..	—	14	18 1 0	1	1	70	9 2 8	—	—	86	136	—	—	14	14 2 5
Total .. ..	4	1,287	402 18 2	52	35	3,500	667 6 3	—	—	4,978	5,807	124	30 17 4	1,287	234 7 0

APPENDIX 6.

[Standard Form VII.]

**OUTTURN IN SOLID CUBIC FEET (WHOLE STEM VOLUME OVERBARK) OF TIMBER AND  
FUEL FOR THE YEAR ENDED 31ST DECEMBER, 1938.**

Territorial Unit	Logs (sold standing)	Sawn (Royalty sales & Departmental timber)	Other hewn wood (plough-wood, etc.)	Round wood (pit props, volikia, etc.)	Firewood	Charcoal (cubic feet of timber equivalent)	Total volume equivalent in round timber	Total value £
Main and Minor State Forests ..	823,221	10,605	8,289	61,678	(a) 1,646,400	(b) 116,264	2,666,457	(c) 15,730

*Notes.*

(a) *Firewood*.—This figure includes firewood sold from the forests and also the estimated quantities removed under permits and free privileges reckoned at 40 cubic feet to the ton.

(b) *Charcoal*.—Reckoned at 200 cubic feet to the ton.

(c) *Total value*.—In addition to the cash actually received road works to the value of £565 and enumerated on Appendix 4 were executed as conditions of sales and are included in this figure. Value of fuel collected under privilege reckoned at 20 piastres a ton.

APPENDIX 7.

[Standard Form VIII.]

**OUTTURN OF MINOR FOREST PRODUCE.**

Territorial Unit	Canes		Fodder, hay, grass, vetch and leaves		Tans and Dyes (sumac)		Vegetable oils (origanum)		Miscellaneous (stone)		Miscellaneous (fruit & seeds)		Miscellaneous (thyme & pine cones)	
	Pieces	Value £	Tons	Value £	Tons	Value £	Tons	Value £	Tons	Value £	Tons	Value £	Tons	Value £
Cyprus	3,050	1	21.46	10	10.11	16	1.15	115	*3,624	issued free	43.78	149	5.35	1

\* Estimated figures.

APPENDIX 8.

[Standard Form XII.]

**COMPARATIVE FINANCIAL STATEMENT FOR THE 10 YEARS ENDED  
31ST DECEMBER, 1938.**

Year	Revenue £	Expenditure £	Deficit £
1929 ..	13,451	39,043	25,592
1930 ..	12,346	40,660	28,314
1931 ..	11,117	34,514	23,397
1932 ..	9,778	33,622	23,844
1933 ..	11,089	28,462	17,373
1934 ..	14,511	24,635	10,124
1935 ..	11,509	21,493	9,984
1936 ..	9,521	23,463	13,942
1937 ..	13,736	23,384	9,648
1938 ..	13,074	28,120	15,046

APPENDIX 9.

[Standard Form XIII.]

**STRENGTH OF FOREST STAFF ON 31ST DECEMBER, 1938.**

Territorial Unit	Senior Staff			Subordinate Field Staff					Clerical Staff	Technical subordinates	Permanent labour force
	Colonial Forest Service	Others	Total	Forest Rangers	Foresters	Forest Guards	Others (Forest Apprentices)	Total			
Cyprus ..	4	3	7	4	9	74	29	116	8	11	51

APPENDIX 10.

## STATEMENT OF THE INCIDENCE OF FOREST GRAZING.

(A) *Grazing Permits issued.*

		<i>Free</i>		<i>On payment</i>		<i>Total</i>	
		1937	1938	1937	1938	1937	1938
1. Number of permits	..	397	288	109	175	506	463
2. Number of animals :—							
(a) Goats	.. ..	17,653	16,704	2,741	4,319	20,394	21,023
(b) Sheep	.. ..	5,975	3,282	46	375	6,021	3,657
(c) Other animals	.. ..	622	551	5	73	627	624
(d) Total number of animals	.. ..	24,250	20,537	2,792	4,767	27,042	25,304
3. Fees collected :		£67. 12s. 5p. in 1937 ; £115. 13s. 6p. in 1938.					

(B) *Grazing Statistics.*

1. Area grazed over lawfully in square miles	.. ..	267.96
2. Area theoretically closed to grazing in square miles	.. ..	353.68
3. Total number of goats in the Island counted for taxation in March, 1938		171,712
4. Number of goats allowed to graze in the State Forests..	.. ..	21,023
5. Number of goats allowed to graze in the forests, expressed as percentage of total number of goats ..	.. ..	12.24%
6. Total number of sheep in the Island counted for taxation in March, 1938		283,299
7. Number of sheep allowed to graze in State Forests	.. ..	3,657
8. Number of sheep allowed to graze in the forests, expressed as percentage of total number of sheep ..	.. ..	1.29%

APPENDIX 11.

## STATEMENT OF FIRE PROTECTIVE WORKS AND FIRE INCIDENCE.

(A) *Fire Traces.*

1. Fire traces existing on 1st January, 1938 : Length 166.72 miles.
2. No new fire traces were opened during the year.
3. Existing fire traces cleaned during the year: Length 27.42 miles. Cost £53. 5s. 7p.

(B) *Telephones.*

1. Existing telephone lines and instruments on 1st January, 1938 : Length 260 miles. No. of instruments 60. No. of switch boards 5.	
2. Alterations : Length of the telephone lines reduced by 17 miles (3 miles additions; 20 miles obsolescence). No alterations were made to the number of instruments and switch boards.	
3. Details of expenditure under sub-head "Telephones" :	£
(a) Installation fee for Nicosia-Platania line .. ..	168
(b) Rental paid for " " " (3 months) .. ..	42
(c) Wages of Telephone Operators, Linesmen and payment to Village Operators .. ..	373
(d) Maintenance of telephones and telephone lines .. ..	63
(e) Indent for telephone materials .. ..	72
Total .. ..	£718

(C) *Fire Detection.*

1. Fire watchers : No. 48. Wages £525. 6s. 7p.
2. Fire watchers' huts existing on 1st January, 1938 : No. 12.
3. No new huts were built during the year.
4. Huts repaired during the year : No. 6. Cost £17. 13s. 1p.

(D) *Fire Incidence.*

<i>Year</i>	<i>No. of fires</i>	<i>Area burnt, square miles</i>	<i>Assessed damage</i>	<i>Cost of extinction</i>	<i>Cause</i>
			£ s. p.	£ s. p.	
1937	50	2.84	732 1 2	218 2 5	30 unknown
					13 accidental
					7 malicious
					50 Total
1938	37	0.26	141 12 5	48 3 8	5 unknown
					27 accidental
					4 malicious
					1 lightning
					37 Total



# APPENDIX 12.

## (A) ANALYSIS OF FOREST OFFENCES TAKEN UP BY THE FOREST DEPARTMENT FOR THE YEAR ENDED 31ST DECEMBER, 1938.

Category	Cases taken to Court											
	Imprison- ment without option of fine, cases	Convicted						Cautioned and discharged, cases	Acquitted, cases	Total Court cases		
		Cases	Fined			Damages compensation	Cases			Persons		
			£	s.	p.						£	s.
Damage to forest by fire .. .. .	1	3	—	5	0	27	7	6	1	—	5	5
Unauthorized possession of forest produce .. .. .	1	603	133	11	2	84	2	8	20	17	641	564
Unauthorized fellings .. .. .	—	330	103	13	0	66	7	8	7	8	445	465
Unauthorized grazing .. .. .	2	288	109	4	0	16	15	6	13	5	308	419
Land encroachments .. .. .	—	49	38	4	0	25	10	3	10	4	63	112
Miscellaneous .. .. .	—	14	18	1	0	14	2	5	1	1	16	46
Total .. .. .	4	1,287	402	18	2	234	7	0	52	35	1,478	1,611

N.B.—For cases dealt with departmentally, etc., vide Appendix 12 (B).

## (B) ANALYSIS OF FOREST OFFENCES TAKEN UP BY THE FOREST DEPARTMENT FOR THE YEAR ENDED 31ST DECEMBER, 1938.

Category	Cases dealt with departmentally									Confiscated property sold or released		Cases pending from previous year No.	Cases out- standing at the end of the year No.
	Total No. dealt with departmentally		Compounded		Warned Cases	Cancelled Cases	Offenders unknown (undetected)						
	Cases	Persons	Cases	Amount £   s.   p.			Cases	Estimated loss £	Cases	Amount £   s.   p.			
Damage to forest by fire .. ..	7	11	5	3   19   0	—	2	—	—	—	—	—	—	
Unauthorized possession of forest produce .. .. .	1,583	1,766	1,202	265   8   0	359	22	—	—	105	25   8   2	271	268	
Unauthorized fellings .. .. .	840	1,049	636	147   17   1	183	21	—	—	17	4   7   0	208	142	
Unauthorized grazing .. .. .	805	1,055	562	139   1   3	193	50	—	—	2	1   2   2	198	124	
Land encroachments .. .. .	195	225	177	101   18   0	8	10	—	—	—	—	46	45	
Miscellaneous .. .. .	70	90	63	9   2   8	6	1	—	—	—	—	14	28	
Total .. .. .	3,500	4,196	2,645	667   6   3	749	106	—	—	124	30   17   4	737	607	

N.B.—For cases taken to Court, vide Appendix 12 (A).

## APPENDIX 13.

## STATEMENT OF FOREST REVENUE COLLECTED IN 1937 AND 1938.

<i>Item of Revenue</i>					1937			1938		
<i>Permit Fees :—</i>					£	s.	p.	£	s.	p.
1. Fuel permits	..	..	..	..	32	13	0	70	4	2
2. Charcoal permits	..	..	..	..	41	5	0	45	19	0
3. Grazing permits	..	..	..	..	67	12	5	115	13	6
Total Permit Fees	..	..	..	..	£141	10	5	£231	16	8
<i>Sales of Timber, etc. :—</i>										
4. Sale of timber	..	..	..	..	149	17	7	832	6	2
5. Sale of standing trees	..	..	..	..	11,049	2	7	10,215	16	0
6. Sale of fuel	..	..	..	..	584	19	8	739	8	1
7. Sale of charcoal	..	..	..	..	274	19	4	58	4	7
8. Sale of bark	..	..	..	..	—	3	3	—		
9. Sale of stone and earth	..	..	..	..	19	6	6	—		
10. Sale of seeds and nursery stock	..	..	..	..	34	12	7	24	2	2
11. Sale of fruits, minor forest produce, etc.	..	..	..	..	593	4	6	277	6	4
12. Sale of confiscations	..	..	..	..	33	9	2	31	18	4
Total Sales	..	..	..	..	£12,739	16	5	£12,179	2	2
<i>Other Revenue :—</i>										
13. Rent of land, water, etc.	..	..	..	..	537	10	1	372	7	8
14. Rent of sawmills	..	..	..	..	98	7	8	79	12	8
15. Other revenue	..	..	..	..	133	9	0	72	15	8
16. Telephone charges	..	..	..	..	15	0	2	9	3	5
17. Protection fees	..	..	..	..	10	6	6	10	6	6
18. Grading fees	..	..	..	..	59	14	1	118	4	4
Total Other Revenue	..	..	..	..	£854	8	0	£662	11	3
Grand Total	..	..	..	..	*£13,735	15	1	*£13,073	10	4

\* In addition £664. 11s. 7p. were collected in 1938 from compounded offences and credited in the Colony's accounts under Head 3, "Fines and Forfeitures," compared with £528. 9s. 6p. collected in 1937.

Also £195. 13s. 3p. were collected in 1938 from sales of old machinery, etc., and credited under Head 9, "Sale of Stores," compared with £114. 14s. 7p. collected in 1937.

Note.—The Cyprus currency is in pounds, shillings and piasres. £1 Cyprus = £1 Sterling in value, and 180 piasres or 20 shillings = £1.

## APPENDIX 14.

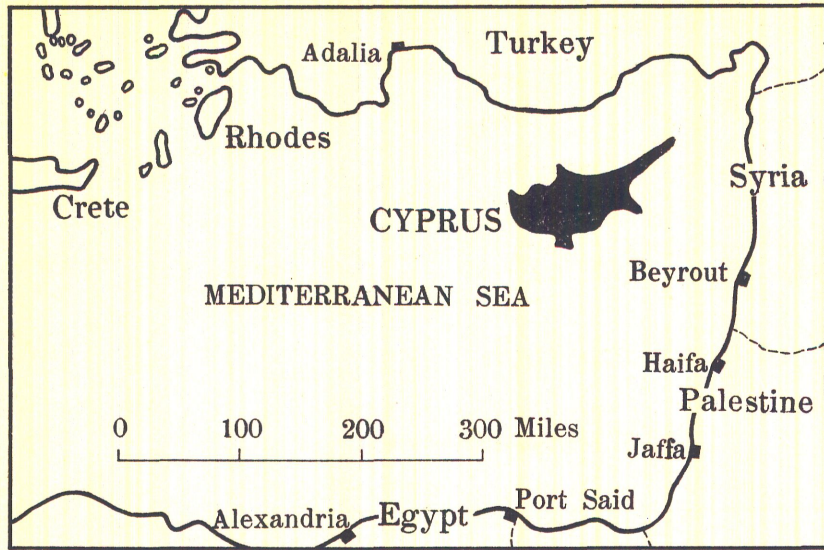
## STATEMENT OF EXPENDITURE FROM FOREST DEPARTMENT VOTES DURING 1937 &amp; 1938.

<i>Subhead</i>					1937			1938		
Personal Emoluments	..	..	..	..	£10,574	18	8	£11,170	14	2
Library	..	..	..	..	8	14	7	9	8	0
Fire Protection	..	..	..	..	797	17	6	797	0	5
Telephones	..	..	..	..	592	1	5	717	13	6
Fire Fighting	..	..	..	..	218	2	5	48	3	8
Forest Protection	..	..	..	..	99	7	1	—		
Silviculture	..	..	..	..	635	11	2	1,096	18	3
Transport of Material and Confiscations	..	..	..	..	38	11	8	39	16	6
Salvage of Burnt Trees	..	..	..	..	349	14	1	149	14	4
Supervision of Tree Felling & Mensuration Work	..	..	..	..	570	2	0	594	7	6
Unestablished Staff	..	..	..	..	1,299	13	3	1,299	19	0
Maintenance of Plant, Machinery and Animals	..	..	..	..	861	14	0	933	12	3
Tools	..	..	..	..	88	5	1	44	19	4
Maintenance of Roads and Bridges	..	..	..	..	985	19	2	1,099	9	8
Bridle Paths	..	..	..	..	—			539	18	7
Maintenance and Equipment of Buildings	..	..	..	..	691	17	7	662	5	8
Delimitation, Forest Survey and Working Plans	..	..	..	..	792	6	1	1,244	5	7
Water Supplies	..	..	..	..	98	3	5	197	9	1
Uniforms	..	..	..	..	377	3	2	348	2	5
Travelling	..	..	..	..	1,298	4	6	1,299	16	4
Rent	..	..	..	..	13	8	4	65	6	0
Lighting, Heating and Electric Power	..	..	..	..	99	16	1	98	12	7
Contributions	..	..	..	..	336	10	0	336	11	8
Utilization Section	..	..	..	..	90	19	8	149	6	5
Incidentals	..	..	..	..	39	17	0	39	10	2
Allowance to Graders	..	..	..	..	12	9	5	14	0	0
Rewards	..	..	..	..	—			3	16	4
<i>Special Expenditure :—</i>										
New Buildings	..	..	..	..	289	3	5	1,934	6	5
Construction of Roads	..	..	..	..	824	16	5	2,188	0	0
Flood and Storm Damages	..	..	..	..	1,298	12	6	997	0	1
Total	..	..	..	..	£23,384	2	5	£28,120	7	2

## EXPENDITURE INCURRED BY FOREST DEPARTMENT FROM OTHER VOTES.

<i>Head No. as in 1938 Estimates</i>					<i>Subhead</i>					1937				1938			
—					—					£	s.	p.	£	s.	p.		
3B...	Maintenance of Government House	Grounds	..	..	..	..	13	11	2	..	60	0	0				
6B ..	Village and Other Roads and Minor Works	..	..	..	..	10	0	0	..	60	0	0					
24 ..	Suspense Account Unallocated Stores					—			..	28	19	2					
29 ..	Grants : Charitable	..	..	..		—			..	40	0	0					
29 ..	Advertising	..	..			25	10	0	..	27	0	0					
29 ..	Coronation Celebrations	..				99	16	2	..	—							
29 ..	Compensation for Goats	..				—			..	8,400	0	0					
Total .. .. .							£148	17	4	..	£8,615	19	2				
Total Expenditure from Forest Votes							£23,384	2	5	..	£28,120	7	2				
Grand Total .. .. .							£23,533	0	0	..	£36,736	6	4				





CYPRUS

FOREST MAP

Scale : 8 miles to one inch

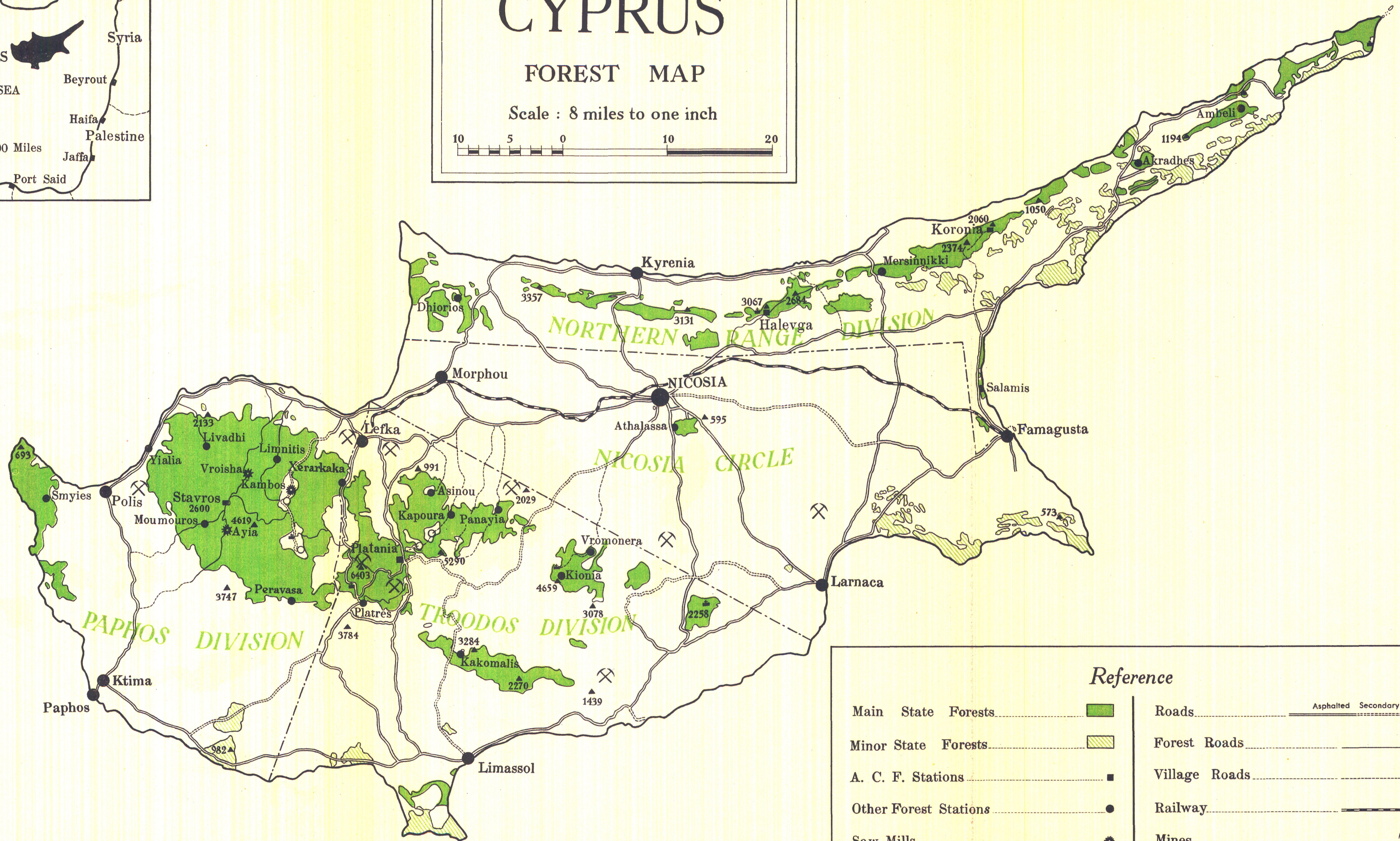
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Reference

Main State Forests		Roads	Asphalted  Secondary
Minor State Forests		Forest Roads	
A. C. F. Stations		Village Roads	
Other Forest Stations		Railway	
Saw Mills		Mines	
Villages within Forests		Monasteries	
Forest Division Boundary		Heights in feet	573