



CYPRUS

REPORT
OF THE
FOREST ADMINISTRATION
FOR THE YEARS
1939—1945

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NICOSIA

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Giving references for Standard Annual Report Headings.

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CYPRUS

REPORT OF THE FOREST ADMINISTRATION FOR THE YEARS 1939-1945

FOREWORD.

The text of this report was written for the fifth Empire Forestry Conference in a report entitled "Empire Forests during the War". This text is almost unaltered but the forms from the original report have been omitted and forms conforming to standard annual report forms substituted for them. The forms supply all the detailed information that is available and, in conjunction with the text, give a complete picture of forest activities and development during the period.

INTRODUCTION.

The topography of Cyprus is dominated by two mountain ranges separated by a plain. The northern range is a long knife edge of precipitous limestone rising to about 3,300 ft. elevation and running parallel and close to the north coast. To the south is a broad agricultural plain, further to the south west is the southern range which forms the main massif of the Island and is composed mostly of igneous formations rising up to about 6,400 ft. elevation. The State Forests are mostly situated on the higher parts of these two mountain ranges. The central plain, most of the lowlands, and also a large part of the highland catchment areas have already been denuded of most of their natural vegetative ground cover as well as of trees and are consequently now in a rapid and advanced state of soil erosion.

2. The earliest records show that Cyprus was once thickly forested. Through the centuries the rate of deforestation has fluctuated with the density and prosperity of the population. The Turkish rule was marked by a long period of economic degrade and falling population, cultivated lands became largely derelict and fell an easy prey to accelerated soil erosion, while the remaining forests were a no man's land for all to destroy and despoil without control. Consequently they suffered heavily from wanton cutting, shifting cultivation, heavy grazing, and were ravaged by fires, which, when once alight, continued without hindrance till they burned out. At the time of the British occupation in 1878, visitors to Cyprus eloquently described the sorry plight of the forests, the evidence of wanton cutting and slashing, trunks lying rotting in chaotic confusion and the gaunt skeletons of fire wasted forests, through which roamed countless flocks of starveling goats.

3. The urgent need for organized forest management was at once recognized and the Forest Law of 1879 inaugurated a regime of modern forestry in Cyprus and set up a forest department—the first to be constituted in the Colonial Empire. The first main task was reservation and delimitation of the forests, which was completed under the Forest Delimitation Law of 1881 during the last decade of the 19th century. The application of forest control was extremely unpopular but forest protection was gradually enforced. Little afforestation could be attempted and forest exploitation was negligible till the urgency of the 1914-1918 war necessitated the Allied Forces in the Middle East being supplied with timber and woodfuel from Cyprus. Those war fellings were not made scientifically for there were few access roads and no trained forest staff available to be in charge of them. The post-war period saw an unprecedented wave of malicious firing by discontented shepherds who resented restrictions to their forest grazing activities. Large areas of fine forests were destroyed by malicious firing between 1918 to 1936. The period between the wars was also marked by active forest development which was fiercely resisted by the forest villages and by local politicians in its earlier years. But the application of scientific forestry through forest working plans drawn up by trained staff, the construction of a road and telephone system, and greatly improved forest protection backed by the 1939 Forest Law found the Department ready by 1939 to deal quickly and confidently with all the emergency duties which the 1939-1945 war period thrust upon the Forest Service.

CHAPTER I.

A DESCRIPTION OF THE PART PLAYED BY FORESTRY AND THE FOREST INDUSTRY IN THE ECONOMIC STRUCTURE OF THE COUNTRY IN THE FIVE PREWAR YEARS, 1934-1938.

AREA STATEMENT.

(i) Total area of forests	652 sq. miles
(ii) Total area of agricultural land	2,333 "
(iii) Total area of other land (ex-water)	587 "
(iv) Total land area (excluding water)	3,572 "
(v) Forest area as percentage of total land area	18%
(vi) Total population	450,000
(vii) Population per square mile	126

The State Forests are divided by law into Main and Minor State Forests. The Main State Forests as their name implies include all the important forest areas amounting to 530 square miles and are under the control of the Forest Department. The Minor State Forests comprise lowland scrub type of forests amounting to 92 square miles. These Minor State Forests are not under the control of the Forest Department but are managed by the District Administration. With few exceptions these forests have been wasted right out by overcutting and overgrazing though they are potentially well able to maintain a productive forest crop. The mountain forests, which cover about 31% of the total land area above the 1,000 foot contour, are mostly situated on steep to precipitous land, hence the need for providing efficient soil and water conservation on such lands.

FOREST COMPOSITION.

Cyprus high forests are almost entirely coniferous. Broad-leaved high forest only occurs as narrow riverine strips in the valley bottoms or small areas of lowland Eucalyptus plantations.

The main species are :—

Coniferous High Forest Species :

Aleppo Pine (*Pinus halepensis*).—This is the main commercial timber of the Island up to about 4,500 ft. elevation.

Troodos Pine (*Pinus laricio*).—This species replaces Aleppo Pine as the main commercial timber at elevations above 4,500 ft.

Cyprus Cedar (*Cedrus brevifolia*).—This species is strictly preserved and is not felled commercially.

Troodos Juniper (*Juniperus foetidissima*).—This species is preserved for regeneration and is not felled commercially.

Mediterranean Cypress (*Cupressus sempervirens*).—This species occurs mostly on the northern range and is felled only as round poles.

Stone Pine (*Pinus pinea*).—This species is mostly in the plantations and is not yet of exploitable age.

Broad-leaved High Forest Species :

Plane (*Platanus orientalis*)

Alder (*Alnus orientalis*)

Poplar (*Populus nigra*)

Walnut (*Juglans regia*)

Oak (*Quercus lusitanica*)

Eucalyptus (*Eucalyptus tereticornis*)

Eucalyptus (*Eucalyptus rostrata*)

Eucalyptus (*Eucalyptus gomphocephala*)

and other species.

Understory species which yield much valuable fuel and small articles are mainly :

Golden oak (*Quercus alnifolia*)

Holly oak (*Quercus coccifera*)

Arbutus (*Arbutus andrachne*)

Juniper (*Juniperus phoenicia*)

Acacia (*Acacia cyanophylla*)

Terebinth (*Pistacia terebinthus*)

Maple (*Acer obtusifolia*)

Carob (*Ceratonia siliqua*)

Olive (*Olea europea*)

and other species.

Output.—During the five year period up to 1938, the forests produced about 47% of the annual total consumption of timber (1,720,000 c. ft.). The total outturn was consumed in Cyprus. No figures are available for the outturn from private or communal forests, but the totals in any case would have been negligible for not only are those forests small in area, but almost without exception they have been overfelled long before.

EMPLOYMENT AND CONSUMPTION.

Prior to 1932 forest exploitation was almost confined to salvaging timber from fired areas. This meant that regularly employed labour was very small in proportion to the area and volume of the forest crop. This caused many incendiary fires in order to create employment. But with the drawing up of working plans for the main productive areas, systematic yearly fellings were stepped up through the nineteen thirties till by 1938 fellings had reached the limit of possibility on a sustained yield basis. This created much more employment in the forest villages and fires decreased sharply accordingly. The more regular work there was available, the more contented the forest villages were and the easier forest protection became. This had one very far reaching effect, it was this, because there was alternative employment available in the forests the shepherds began in 1938 to accept such works as alternative forms of livelihood in place of forest shepherding. This gave the Forest Department the opportunity it had been waiting for, for many years. It enabled a start to be made on the eradication of the forest flocks for fair compensation and alternative employment. In the years just before the war all timber was sold standing by auction. This gave the forest village workers the maximum amount of employment in felling, logging, sawing, transporting, etc., and so kept them occupied and therefore contented and out of mischief so far as the forests were concerned. The subsequent war years were even better in that respect and that enabled forest development to race ahead without any further set backs in the areas of productive forest.

PREWAR FOREST POLICY AND MANAGEMENT.

The part played by the State Forests in the prewar period was very considerable, for though as briefly stated in the introduction above, the forests of Cyprus had been largely cleared and were in a very bad condition when taken over in 1878, yet after a period of partial protection for 60 years, they had made a remarkable recovery. This recovery is even more marked in recent years since forest grazing, and therefore firing, has to a large extent been excluded from most of the main production areas of the southern range. By 1938 the Cyprus forests were yielding about 47% of the total timber consumed in Cyprus. In addition they supplied the greater part of the domestic and industrial fuel for the whole of Cyprus. It was impossible to assess accurately how much wood-fuel the forests did supply for much of it went in the form of privileged free fuel collections and unlawful pilfering. It was, however, far more than the forests could stand, and in many areas where the full force of pressure for fuel fell on accessible areas, forest growth was receding very rapidly. Very little mineral fuel was used even for industry, and so one might fairly state that at that time the whole of Cyprus was based on a wood-fuel economy. The position is very different now, as will be explained later, for a compulsory conversion to oil-fuel has very largely already taken place. No timber or wood-fuel was allowed to be exported in prewar days for Cyprus could not produce sufficient for its own needs. As already stated the forests were on the whole improving rapidly wherever protection could be applied but they had other very important indirect uses, which, though impossible to assess in values,

were certainly much greater than the value of the produce they yielded. It is therefore as well here to set out the aims of Cyprus Forestry in order of the importance attached to them locally. Thus the real importance and value of the forests may be better understood. For many years the recognized fundamental aims of forest management in Cyprus have been :—

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

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

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

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

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

It will be seen from the above that the indirect values of the Cyprus forests are far greater than their direct values. It is sometimes difficult for those unfamiliar with the mid-eastern area to appreciate this position. In that area forests containing fully sized and stocked trees are extreme rarities which attract tourists from far and wide to witness so extraordinary a phenomenon, particularly is this so of the natural cedar forests (*Cedrus brevifolia*). Cyprus is fortunate in possessing comparatively extensive areas of forests which are unique in the Middle East, in that, being carefully protected under forest management they are rapidly returning to their former vegetative climax of fully stocked high forest. Many areas are in fact already in that category and the rate of restocking is now cumulative and ever increasingly more rapid as better protection and management are applied.

Cyprus forests have for long centuries been subjected to heavy grazing, particularly by goats. This coupled with the disastrous firing by the shepherds had reduced the stocking and quality of the forests very greatly, it also effectively prevented natural recovery and regeneration. Therefore it has for long been the constant unswerving policy of the Forest Department that all forest grazing must be systematically eradicated by whatever means presented themselves. It was not, however, till 1938 that circumstances enabled that matter to be tackled effectively. Wherever grazing has been eradicated there is no doubt that miraculous natural recovery and results have been achieved. Once grazing can be removed it is the aim of forest management to maintain the whole area under a selective system of felling and natural regeneration. This is the cheapest and best means of reproduction. In this way the hills would always be under a fully stocked forest crop to fulfil all the main purposes of management as set out above.

The areas under systematic forest working plans in 1938 amounted to some 359 square miles and the remaining areas will be put under similar control as fast as opportunity allows. With the above system of management the whole area of the forests is permanently under natural regeneration. The fired areas and other badly grazed out areas are assisted to regenerate by artificial means. In badly fired and eroded hills artificial reforestation usually necessitates some form of contour soil conservation and reseeded. Up to 1938 this work had not started on any large scale as grazing was still in complete control of nearly all areas up to that time. Goat grazing made reforestation quite impossible.

The 1914-18 war did not have much permanent effect upon the forests, except upon those areas that were accessible and so were felled, for in those days forestry had not reached a stage beyond partial protection of the main forest areas. The inaccessibility of the forests was their chief means of protection. When heavy war fellings had to be made the Forest Department was not in a position, and nor had it the trained staff, to execute the job required of it in a manner that was prudent for the future well being of the forests. The result was that a few accessible areas were clear felled, a mistake, no doubt necessitated by circumstances which has still to be corrected by reforestation of those bare areas. Because the Cyprus forests are some of the very few remaining tree covered areas in the Middle East, they have been called upon twice in one generation to fulfil a war-time emergency for timber and fuel supplies which the country could ill afford. But even so, in both cases the effects of war fellings have been much less disastrous than the fate meted out to their forests by the people of Cyprus by overcutting, overgrazing, and firing the forests in peace time. The war fellings can and are being repaired but that is of little avail till the Administration, with the whole hearted co-operation of the people, can put an end to the customary abuses of pilfering, grazing, and firing the forests. The policies and management for bringing that about are set out below.

CHAPTER II.

THE EFFECT OF THE 1939-1945 WAR ON THE DEMAND FOR, AND SUPPLY OF TIMBER AND FOREST PRODUCE.

A RECORD OF HOW THE DIFFERENT PHASES OF THE WAR AFFECTED TIMBER SUPPLIES.

Fortunately the Forest Department correctly diagnosed the sequence of events leading up to the declaration of war in 1939. After the Munich discussions in 1938 the Department worked hard to prepare itself for the inevitable emergency of war. With the record of the 1914-1918 war as a guide it was easy to foresee what would happen if we were not prepared. One thing the Department was determined upon, was not again to be caught in the hopeless position of being suddenly called upon to supply large quantities of timber without the necessary road system to allow fellings being spread over sufficiently wide areas so that they could be made in conformity with sound silviculture. A rush road construction plan was therefore applied a year before war was declared. By that time most of the main productive areas had been tapped and fellings could be sufficiently spread to meet the first wave of demand. With that flying start, and thereafter by driving roads ahead of the fellings it was just possible to deal with the emergency and at the same time to employ sound silviculture, and thus to preserve both the productive and recovery power of the forests for the future.

From the past experience of the 1914-18 war it was obvious what would happen in case of war. The Island would again be cut off from its usual sources of imported timber supplies, it would not only have to become self supporting in forest products, but also would have to supply rush orders for export to the Middle East Forces. The fact that Cyprus was an island and contained about the only accessible stocks of standing timber in the eastern Mediterranean area made this inevitable, and so it proved.

When war started in 1939 stocks of converted timber in Cyprus were about normal. The forests were in full production and the Forest Department was ready and prepared to meet the emergency that was about to take place. For some time after the declaration of war with Germany additional imports of timber were received from the Balkan states, but when Italy entered the war in June, 1940, all further hope of imports became impossible. From then till spring 1945 Cyprus was to become a timber exporting country as well as having to maintain its essential requirements from its own forest resources.

Prior to the outbreak of war all sales were made as coups of standing timber and all extraction and utilization was done by private enterprise, the Government saw-mills being leased to contractors working out the coups. Immediately war broke out it was necessary for the Forest Department to be in control of all Cyprus timber. No more timber was sold and the Department undertook all fellings, logging, utilization, and supplying of timber for the duration of the war.

Before the war there was a house building boom and this continued for some time after war started for costs of construction were then low and the demand for houses was even then great. This consumed a quantity of timber from existing stocks in the towns, but fortunately it was allowed to continue for some time, as the need for houses and stores was yet to become acute. The mines, the biggest consumers of timber in Cyprus, very fortunately had fairly good stocks of timber in hand when war started and shortly afterwards most of the mining companies more or less closed down for the duration owing to lack of shipping. This, when viewed from a timber supply and forest preservation point of view, was a providential circumstance which saved the situation, for it would have been utterly impossible for Cyprus forests to supply the mines at their full rate of consumption as well as the Middle East Forces and other essential services, without doing irreparable damage to the forests for many generations ahead.

As the war advanced local consumption of timber, except for most urgent purposes, was reduced to the barest minimum. In the early part of the war the demand was for military supplies of timber for export to the Middle East Forces. These urgent demands started in 1939 but it was some time before supplies were ready for shipping. Exports started as from January, 1940, and continued at maximum pressure throughout 1940, 1941, and 1942. In 1940 air raids started and thereafter a new rush order for timber for constructing air raid shelters and for covering A.R.P. trenches had to be supplied. In the summer of 1941 the Island was garrisoned with considerable fighting forces and extensive defence plans were hastily undertaken. This created a new and additional rush demand for timber of all sizes and for large quantities of wood-fuel. These urgent demands continued throughout 1942 and into 1943 during which years they increased as the garrison was increased.

Fortunately no wood-fuel was allowed to be exported for the country was entirely dependent upon wood-fuel for all industry, commercial purposes, and domestic use, as well as for military purposes within the Island. Exports of timber continued at maximum rate of production in answer to urgent demands from G.H.Q. till in 1943 the position became so acute that the last remaining stocks of imported timber and privately owned Cyprus grown timber had to be requisitioned for export in a last effort to fulfil orders. Thereafter it became impossible to meet the demands from Cyprus resources and other means had to be found.

However, other pressure for Cyprus forest products had to be met. In 1941 the mid-eastern match industry was threatened with closure unless some source of match timber could be found. Accordingly, at the request of the Middle East Supply Centre, Cyprus was required to supply match timber first to Palestine and then to Egypt. This demand cleared the country of practically all poplar of exploitable size and also much alder and pine. Cyprus supplies just enabled the match industry to keep producing. At the same time there was urgent demand for pine bark for tanning purposes in the mainland countries owing to a break down in the usual sources of supply of those materials. Sufficient supplies had to be met from Cyprus forests.

In the spring of 1944 there was an urgent demand from the Naval Authorities for 200 heavy schooner masts of 70 ft. length. This order was perhaps the most difficult to supply for this class of timber is an extreme rarity in Middle Eastern forests, and could only be selected from the best *Pinus laricio* crops growing above 5,000 ft. elevation. To find these trees taxed the forests to the limit, as also the ingenuity of the forest staff to get the stems out and down to a port with only lorry transport available. Such masts could only be obtained from 8 ft. to 9 ft. girth trees, and, being fresh, they were very heavy. A number of lorry chassis buckled with such loads, even after reinforcing, and many rock faces at the zigzag corners of the tortuous winding mountain roads had to be blasted out wide enough to allow these masts to swing round the corners.

It may be seen from the above that the Cyprus forests were called upon to supply yields far beyond their capacity and in January, 1943, representations had to be made to the Secretary of State for the Colonies that the pressure must be shifted from Cyprus at once if the Island was to be saved from irreparable damage to its forest resources. This appeal was fortunately heeded and the load was shifted to other sources of supply just in time.

In 1942 the timber position was so bad that a special Timber Control organization had to be set up under the Conservator and provided with ample powers to control, and requisition if necessary, all timber supplies in the Island. From 1943 the export of timber ceased and the Military Authorities also made arrangements to import timber to Cyprus from their stocks on the mainland which by this time had been relieved of the danger of enemy invasion.

Similarly the wood-fuel position deteriorated rapidly, till in 1943, a Fuel and Charcoal Control organization had to be set up as a branch of the Forest Department to deal with the essential fuel supplies of the Island. In the winter of 1942-43 owing to short supplies of wood-fuel for civil needs and the lack of transport to bring it into the towns, the Government were faced with a failure of wood-fuel supplies with which to bake bread. So serious was this position that at the height of the war it was necessary to arrange for a conversion of the Island's fuel from wood to oil. This task also fell upon the Forest Department and the forest staff had to study this new duty and technique of oil firing and apply it to industry, commerce, and domestic uses. This duty was placed under the charge of the Fuel and Charcoal Control branch.

CHAPTER III.

MANNER OF MEETING DEFICIENCIES AND INCREASED DEMANDS DURING THE WAR.

ORGANIZATION OF SUPPLIES.

Supplies of timber and fuel were organized under two separate branches of control under the Conservator of Forests.

The Timber Control Section was set up in 1942. This work was very greatly assisted by the voluntary and honorary services of two well-known leading private business men who had long experience in the timber trade and in general commerce. They were enrolled as Timber Control Officers within the framework of Defence Regulations which were drafted to provide for the absolute control of timber. It is difficult to praise sufficiently the valuable work rendered by these two gentlemen, for, their contacts with the numerous local timber merchants, their unique knowledge of the whereabouts of stocks of timber, their expert knowledge in calculating and allocating stocks of timber for essential purposes, proved to be of the highest value to the already hard pressed forest staff. Under the Timber Control regulations no private trees could be felled or transported without permit, no timber could be sold or used without permit, and all stocks had to be regularly declared by those holding them. By these means the Timber Control Section was able so to control timber supplies and timber prices that all essential needs were met and prices were kept down to a rate which never exceeded about one-quarter to one-third of the rates ruling in neighbouring countries on the mainland. Black marketing in timber was therefore reduced to the minimum for the Timber Control held or controlled practically all stocks of timber in Cyprus.

In much the same way a Fuel and Charcoal Control organization was set up as a branch of the Forest Department in 1943. This section applied an almost exactly similar mode of control to all wood-fuel supplies. It had ample powers to allocate supplies where they were most essential and withheld supplies from all unnecessary forms of usage. Fuel and charcoal depots were opened in all main centres, charcoal became a rationed commodity and wood-fuel was only distributed on a very restricted basis. At the same time this Section, working in conjunction with the Controller of Supplies, became responsible for oil-fuel supplies and their consumption, and was charged with the duty of converting Cyprus from wood-fuel to oil-fuel. The oil-fuel conversion scheme was undoubtedly long overdue when viewed as a measure to save the Cyprus forests from destruction, but ultimately circumstances necessitated that it had to be initiated at the height of the war when conditions and supplies of both oil-fuel and oil burning appliances were most difficult to obtain. In other respects, however, it is certain that such an extreme measure could never have been applied in peace time till the forests had been irreparably destroyed, owing to the storm of protest it would have raised from all classes of the community. Oil conversion affected every citizen and was very unpopular to start with, but the stress of war emergency backed by ample Defence Regulations enabled it to be accomplished smoothly till a stage has now been reached when the population are most grateful for the change over and there is no fear of any large scale return to wood-fuel consumption. The effects of oil conversion have had such far reaching effects upon forest policy and forest management that a brief report upon that subject is appended at the end of this Report.

DEVELOPMENT OF RESOURCES.

The necessity of the war period forced Cyprus to develop its forest resources of main products to the extreme limit. There may still be some minor products that might be developed further, but they are of negligible importance.

ECONOMY IN USE, RESTRICTIONS, REVISION OF SPECIFICATIONS, ETC.

Cyprus was one of those territories which required no urging to economise in its use of forest products during the war years. Inadequate supplies soon produces economy. In Cyprus there was little need to revise specifications or to apply restrictions to effect economy. The entire tree was utilized. Timber of any quality was in urgent demand and was serviceable for some use or other. Slab wood, and there was not much slab left by the time a Cypriot sawyer had taken out the timber, was in urgent demand for trench lagging in A.R.P. and Defence works, or as fuel. Sawdust was in demand to fire brick and tile kilns. Branchwood and small thinnings, if straight, were needed for trench and earth work defences or A.R.P. works, and any balance as fuel. Stumps were uprooted as fuel and small lop and top brush wood branches with their twigs and leaves were readily collected as village domestic fuel. Bark was in demand for tanning or as fuel. It may assuredly be said that Cyprus was not one of those countries which wasted any timber which it had available.

WORKING THE FORESTS NOT PREVIOUSLY EXPLOITABLE.

Even before the war the Cyprus forests had a ready market locally for most of their products. But at that time there was so much cheap and good quality imported timber available, that the prices for low grade timber were very low and it was often difficult to dispose of. There was however a keen demand for all classes of wood-fuel. This meant that a proportion of low grade logs were never converted but went into the fuel market. The war changed that as explained above and provided a complete utilization of all fellings of whatever quality. The pressure for timber and fuel was so great that all exploitable areas were tapped to the limit of their capacity till urgent representations had to be made to the Secretary of State for the Colonies to relieve Cyprus of the drain on its forest resources and to authorize the conversion of the country from wood to oil-fuel.

USE OF NEW TIMBERS AND MINOR PRODUCTS, ETC.

Before the war the species that were difficult to market as timber, were mostly Plane, Alder and Poplar, though all species were of course marketable as fuel. During the war the supplies of imported Beech were rapidly exhausted and Plane was then used for practically all purposes for which Beech was previously used. This change has probably come to stay for Plane timber is still eagerly bought and used in Cyprus to-day and is probably equal to Beech in many respects and better for some purposes. Alder was much despised before the war, but was much sought after during the war for plywood, as match splints, and for match boxes. It was also used for furniture, and as short length scantlings, and boarding. Some of these markets will be retained. Poplar supplies were almost entirely used up for match splints and village house maintenance during the war years.

Two small minor industries for making plywood and wood distillation were set up during the war, but both were very crude and probably cannot continue for long in competition with imported products.

During the shortage of timber, cement and steel were used to start with as timber substitutes, but being themselves imported products they were speedily exhausted and could not be replaced. It then became necessary to adjust architecture to suit the existing conditions. Both civil and military building designs were then adjusted to consume only the minimum quantities of timber and then only in short lengths. Stone floors, stone or brick walls, stone masonry arches, and the Belfast truss were all employed extensively to relieve the pressure and to replace the usual type of wooden hutment building commonly used for temporary buildings.

CHAPTER IV.

MAN POWER.

USE OF FOREST SERVICE PERSONNEL.

One Assistant Conservator of Forests joined the Forces immediately war was declared. A second Assistant Conservator of Forests was mobilized in the summer of 1941 and stayed on duty with the Forces. Both these Assistant Conservators were absent till their release in spring 1944, by which time the main emergency had passed.

In 1940 the Cyprus Volunteer Force was raised at a time when the Island appeared to be in danger of invasion and trained troops were not available for service in Cyprus. The Conservator, all remaining Assistant Conservators and a large proportion of Forest Department staff joined this force to the total number of 88; "C" Company of the Cyprus Volunteer Force was known as the "Forest Company" for into it were drafted the Forest personnel, together with some other volunteers from the hill villages all of whom were connected with forest works. This Company was trained primarily for service in the mountains which they knew so well. In the early days the C.V.F. was rather like the "Home Guards" in Britain in that they continued to carry on their civil duty but did their military training in the evenings, over the week-ends, or at any time when it could be fitted in. This training period continued uninterrupted till May, 1941, by which time Greece and Crete had fallen, and Syria was in enemy control. It was evident that Cyprus was in imminent danger of invasion at that time and so the C.V.F. was mobilized to their allotted defence positions. "C" Company were posted at Troodos Military Camp, which happened to be in Troodos forest, a fortunate coincidence. However, the situation rapidly became a most difficult one from the point of view of maintaining necessary timber supplies, for only a skeleton of the Forest Staff remained and attend to that duty. The position was now reversed, for most of the Forest Staff military service was their immediate duty, but because the company was stationed in the forests and had access to the Forest Department's forest telephone system, the Conservator and his staff were able to attend to urgent forest problems in the evenings and at times when no military training or exercises were in progress. This allowed the Conservator to retain some measure of control over the most urgent forest works and kept the production of urgent supplies going to some extent. However, by the end of the summer the expected attack on Cyprus had not materialized and with few exceptions forest personnel had to be released and placed on the C.V.F. Reserve in order to allow urgent timber and fuel supplies to be resumed and maintained.

In 1942 the Conservator was required by the Chief Engineer at G.H.Q. to visit Syria and Lebanon and make a survey of the possible timber resources of that territory and report upon how they might be utilized for Military purposes. The Military already had a Forestry Section of the Royal Engineers operating in Syria, but there were many technical matters upon which advice was required. As a result of this visit two well qualified Forest Guards from the Cyprus Forest Service served with the Royal Engineers in Syria and Lebanon from May, 1942, to August, 1945. These Forest Guards were in charge of the sealing, felling and logging operations of the Royal Engineers Forestry Section. In addition a number of skilled Cypriot sawyers and axemen were sent to Syria as a gang of expert lumbermen to work under the Cypriot Forest Guards in order to hasten the work, and step up the efficiency of the unit. This combination was very successful both in doing the job and in training Syrian labour how to do it.

The Forest Department maintains its own forest telephone system for fire spotting and control of forest works. This system forms a fairly complete net work over the southern range and to a less extent on the northern range and connects most of the highest summits with the telephone as forest fire look out stations. During the war the forest telephone system proved to be a very valuable link in the Island's communications. It was incorporated into the Coast Watcher Defence Service and the main forest fire look out stations on the high summits were manned in summer and winter continuously between June, 1940, and November, 1944. These men lived a hard and isolated life on the mountain tops but were able to give much valuable information in spotting enemy planes and other forms of enemy activities.

In 1942 a defence programme for Cyprus was applied which entailed the construction of long lengths of tactical roads and the construction of numerous road block points which required excavations ready for charging. The Forest Staff were accustomed to road construction jobs and to the use of explosives and so were called upon to assist the Military Authorities in constructing their rush defence works. In all about 165 miles of roads costing approximately £54,500 were constructed in a period of about 3½ months. Much of these roads had to be constructed through broken hill land with much rock cutting. The tracing and aligning of these roads and the control and foremanship of the labour employed, required much detailed and overtime work for the forest staff employed on them in addition to their other duties.

It so happened that the outbreak of war almost exactly coincided with the Secretary of State's approval for the grant of £210,000 for forest development under the Colonial Development and Welfare Act. This meant that the Forest Department was at the same time faced with a large programme of reafforestation and also with all the war-time emergency exploitation and defence works. These works coming at the same time, undoubtedly put a very heavy strain on Forest Service personnel. However it is to their credit that both tasks were accomplished and the reafforestation plan is now well advanced and working smoothly and has been kept well up to schedule since it was first applied.

LABOUR SUPPLY, ETC.

Forest labour must not be confused with general labour for a large proportion of forest labour is skilled labour which is normally employed only on forest works. At the start of the war period there was a surplus of labour in the forest villages, this applied from the time that the mines stopped work till military works started up in a big way and absorbed labour from all over Cyprus. But on the average forest works were not impeded through lack of labour. The forest villages which ordinarily supply the skilled labour dealt with the increased forest activities remarkably well and at no time was there a hold up in supplies for reasons of labour. Since all transport of forest produce in Cyprus is dependent upon roads and lorry transport, the problem became one of lorries and particularly of tyres and spare parts as the chief limiting factors on rate of outturn. As forest works became more urgent the capacity of the mills also became a limiting factor as well as transport. For a time this was overcome by running the mills for a continuous 24 hours in three shifts, but later that had to be reduced to a double shift of sixteen hours. During one period of air raids the mills were not allowed to work after dark and nor could transport run on the roads at night because both those measures infringed the black out regulations. This was a serious limitation, but it was lifted later when the urgency of the position was realized. Incidentally it says much for the maintenance staff of the mills that never once did a hold up occur owing to a failure of the machinery which could not immediately be repaired with makeshift spare parts. This perhaps is all the more remarkable when it is realized that the mills were mostly purchased as secondhand machinery during the 1914-18 war and had been in use ever since. Efforts were made to obtain additional modern mills to increase production but it was impossible and so the old machinery had to do the whole job.

Only once did labour fail and that was during the summer of 1942 when the Forest Department was constructing roads for the Military Authorities. On that occasion a large labour gang of about a thousand men downed tools and struck work for higher wages. The work was not interrupted for more than a day as other labour was brought in from a distant area. The labour concerned was not regular forest labour. At that time there were so many urgent works on hand that a shortage of labour was created and some ill advised persons persuaded the men to strike in order to exploit the position. They failed in their object.

CHAPTER V.

WORK OF FORESTRY CORPS AND COMPANIES AND SPECIAL LOGGING UNITS.

In Cyprus no working units of this sort operated since the whole matter was controlled and operated by the Forest Department. In Syria, however, as mentioned above, there was a Royal Engineers Forestry Section at work and forest staff and skilled forest labour was sent from Cyprus to assist the Royal Engineers in that task.

CHAPTER VI.

IMMEDIATE EFFECT OF THE WAR ON FOREST CONDITIONS.

ON FOREST MANAGEMENT, PROTECTION AND EXPLOITATION OWING TO SCARCITY OF LABOUR.

The war has had no effect in changing the objects of forest management as set out in Chapter I, Prewar Policies and Management. The excess war fellings have largely removed the old age classes, but sound silviculture was always maintained as the most important governing factor overriding all other circumstances. Since Cyprus forests are selection forests it will be seen, therefore, that their power of recovery and future production has not been impaired at all as a result of war fellings. In fact, it is true to say that once having withstood and dispersed the impact of war-time excess exploitation the position of forestry and the future of the forests has never been better in Cyprus than it is to-day.

Forest protection has been immensely simplified as a result of the war period. Shortage of labour has kept the forest villages employed at good wages and there has been little incentive or need to fall back on forest thieving as the old time form of unemployment relief. Village employment has been ample and labour rates and village produce rates were good. The villager has therefore earned good money and his standard of life has gone up very greatly. This is very satisfactory from a forest point of view for it undoubtedly has given the forests a much needed period of relief from pilfering and firing. It is also certain that the war-time timber and fuel control organizations put a very close restriction on tree felling around the forests and this has tightened up protection considerably.

An ill effect from the over exploitation of the war years must now be overcome for it is extremely difficult to keep the skilled tree feller and lumberman type of forest worker employed with a drastically curtailed exploitation programme. However, the extensive reforestation works now in hand to a large extent offset this difficulty and in most cases work can be provided for those who really need it, so it is to be hoped that the forest villages will be kept employed and contented by such means.

FOREST FINANCE.

The war-time activities put up both forest expenditure and revenue very greatly indeed. Another important result of the war is that the purchasing power or exchange value of money was greatly reduced. This of course puts revenues up on paper but it also has meant that the volume of work executed for a given amount of expenditure has been very much less than was expected. This is very clearly illustrated with the Colonial Development Funds for road making and reforestation. The original grant of £210,000 was estimated to do work calculated on 1939 rates. The results have of course fallen far short of the estimated road lengths and areas to be dealt with, for labour rates are now roughly three times the 1939 figures, and most of such expenditure goes in daily wages.

The spending and control of such greatly increased expenditure has been a heavy duty on the staff and a considerable increase in forest foremen and clerical and accounting staff has been inevitable. By now, however, the Forest Department has built up a lot of experience in these matters and a close technical and financial control is provided which ensures full value for the expenditure incurred.

In order to make comparisons easier yearly figures of expenditure and revenue are given below for the war period showing Colonial Development expenditure separately from current expenditure.

		<i>Expenditure</i>						<i>Total</i>	<i>Revenue</i>	
		£						£		£
1938	Current	28,120	..	..	..	..	..	28,120	..	13,074
1939	„	35,229	..	..	..	..	..	35,229	..	12,134
1940	„	61,099	..	..	..	..	..	61,099	..	56,123
1941	„	63,963	}	..	..	..	..	80,636	..	56,881
	Col. Dev.	16,673								
1942	Current	111,960	}	..	..	..	..	137,637. 10s.	..	74,864
	Col. Dev.	25,677. 10s.								
1943	Current	160,153	}	..	..	..	..	181,522. 4s. 5p.	..	181,031
	Col. Dev.	21,369. 4s. 5p.								
1944	Current	166,119	}	..	..	..	..	192,722. 2s. 6p.	..	127,774
	Col. Dev.	26,603. 2s. 6p.								
1945	Current	133,615	}	..	..	..	..	166,900. 2s. 2p.	..	100,467
	Col. Dev.	33,285. 2s. 2p.								
1946	Current	81,341	}	..	..	..	..	128,392	..	81,866
	Col. Dev.	47,051								

DIRECT DAMAGE TO FORESTS BY MILITARY OPERATIONS.

Cyprus was extremely fortunate in not being fought over. Such damage as did occur to the forests and plantations was negligible in the total and was caused either by accidental fires or by having plantations occupied by military units for cover purposes. In the case of accidental forest fires, there were a few of those, as was only to be expected, caused by the carelessness of military units when on exercises in the forest areas. The damage was slight. It may be said here that one of the constant fears of both the Military Authorities and the Forest Department was that the enemy would drop incendiaries from the air on our forest areas to create nuisance and diversion. This would have been extremely easy to accomplish and quite impossible to prevent. Once the forests were alight in many different places it would have been extremely difficult to extinguish such fires and certainly it would not have been done before enormous permanent damage had occurred. It was for this reason that the Forest Company "C" Coy of C.V.F. was specially trained as a forest fire fighting force. At this it was extremely efficient, composed, as it was, almost entirely of experienced forest fire fighters. Fortunately such an emergency never arose.

A number of plantations suffered some damage owing to having units stationed in them, but here again the total damage was negligible compared with what might have resulted had the area been fought over.

CHAPTER VII.

EFFECTS OF WAR-TIME DEVELOPMENT ON THE FUTURE TREND OF FOREST POLICY, MANAGEMENT AND WOOD UTILIZATION.

EFFECT OF WAR-TIME EXPLOITATION ON FOREST CAPITAL AND FUTURE INCREMENT.

War-time exploitation was only carried out extensively in those productive forests which are under forest working plans. So that all excess fellings are carefully recorded and calculated as advance fellings from the normal sustained future yearly yields. It will take some years to make up the deficits by reduced yields to offset the overcut but it is expected that by about 1952, if all goes well, the forests will have been restored to their normal rate of production. By then both the capital growing stock and increments should have been restored. For the next five years therefore the Cyprus forests must be managed on a very much reduced yield basis. During that period Cyprus must rely mostly upon imported timber supplies till its forests can again take up their prewar position in regard to yields. No permanent damage has been caused to the forests by excess war fellings.

EXTENT TO WHICH WAR DEVELOPMENTS ARE LIKELY TO BE PERMANENT.

The war-time road programme tapped all remaining inaccessible productive areas of any size. This will be a permanent development for all the forests are selection forests and so the war-time roads will fulfil a lasting purpose in tapping those areas in future in regular rotation. All roads of a permanent nature are very carefully aligned and are maintained in good repair for future use. There are still some roads that are required to complete the forest road programme but they will be constructed as opportunity occurs. Those roads are not yet essential for exploitation purposes, for they are to pass through areas which are not yet in full production, but which are being carefully protected to grow into the productive class.

The marketing of low grade material such as thinnings was fairly easy before the war and it is probable that, though the war-time demand will slacken, yet, it is fairly certain that there will be no difficulty in marketing all classes of timber in Cyprus in the future. It may fairly be said therefore that this development should be permanent.

In Cyprus all timbers have their uses and markets and the increased use of Plane, Alder and Poplar timber during the war is fairly certain to continue for the uses and values of local timbers have perhaps for the first time, now been demonstrated by necessity. The pressure for fuel will consume any logs of insufficient quality for timber for many years to come.

Cyprus is perhaps peculiar in that it does not need to search for new uses for its timbers, indeed the reverse is true. The Forest Department is busily engaged in searching for means of conserving tree growth and in providing substitutes for the use of timber or wood-fuel. Hence the efforts being made to convert the country from wood-fuel to oil-fuel and the encouragement given to use steel and concrete and other substitutes for timber. The position briefly is that only about 20% to 25% of the total forest area is productive, the balance is in various stages of being protected and nursed back to productivity. The build up of the capital growing stock is rapid in those areas where all grazing is excluded and complete protection can be afforded. It will, however, be many years before the yields are likely to be not readily marketable, if in fact that state is over reached, for with a rapidly increasing population it may be expected that by the time the total forest area is fully productive the local demand will absorb the total output.

EFFECTS OF WAR-TIME DEVELOPMENTS ON SILVICULTURE, AND PROTECTION.

The war has had no effect upon the silvicultural system to be employed. Cyprus forests are all selection forests for it is essential to maintain a protective crop on the hills in such a climate. The selection system appears to fulfil the general requirements better than any other and no change is contemplated. The war period has, however, had certain results which have changed the general position of forestry for the better in Cyprus. As mentioned above the greater part of the forests are in the unproductive stage of being nursed back to productivity and the whole area is under natural regeneration. Forest grazing retards or may prevent altogether the process of recovery, particularly when the flocks happen to be goats, as is nearly always the case in the forests of Cyprus. During the war period, with the aid of Colonial Development Funds from which to pay compensation to forest goatherds and with ample employment to provide alternative modes of livelihood, it was possible to eradicate forest grazing from most of the main productive forests of the southern range mountains. To have freed those forests from the crippling curse of unrestricted goat grazing is an achievement which cannot easily be assessed. It is without doubt the most far reaching development that has ever been attained so far in any Cyprus forests. Not only has it removed the flocks, which did untold damage, but it has removed the goatherds who did even more damage than their flocks, for it was they who lit or caused most of the disastrous forest fires that have burned the heart out of Cyprus forests for generations. The areas freed from grazing are now regenerating rapidly, and this, together with extensive artificial reafforestation under Colonial Development Funds is causing a very rapid recovery of the wasted out and unproductive areas of the southern range. The effects of this build up of capital growing stock and improvement of the forest cover and site factors are cumulative. It is correct to say that the whole process of recovery has been greatly speeded up as a result of war conditions and in fact this recovery probably would not have taken place for years had it not been for those peculiar circumstances.

In the northern range forests a different set of problems exist, and it has not yet been possible to rid those areas of goat grazing as was done in the southern range. The main reason for this failure is because the whole of those forests are, broadly speaking, unproductive. They have been wasted and degraded by excessive pressure for fuel and grazing, and in consequence it was not possible during the war period to offer the goatherds attractive employment near their villages on forest exploitation works as an alternative mode of livelihood. The forests of that range must therefore continue to suffer excessive goat grazing till such time as the economies of grazing can be replaced with a more attractive form of livelihood to those who practise it. But even so the war period has also been very beneficial to the northern range forests. The campaign for compulsory conversion to oil-fuel, which was made necessary by war conditions, and which in fact no peace-time Administration would ever have dared to apply, is already affording great relief to the forests. This applies particularly to the northern range where the main lime burning industry of the Island is situated. The pressure for fuel for the lime kilns was so great that the range was being rapidly cleared of all forest growth and even of low bush soil cover for that purpose. The treeless plains villages below also sought their domestic fuel from this range with disastrous effects on the forests. Now, the position is very different, for already all lime kilns must burn oil-fuel by law and it is easy to enforce that law. In addition the domestic fuel needs of the treeless plains villages below are mostly met by oil already. This relief of the pressure for wood-fuel from the forests is without doubt the greatest achievement ever attained so far towards the reforestation of the northern range.

Additional relief is also being provided by the establishment of numerous village fuel areas under Colonial Development Funds for the villages of the treeless plains. This work is very popular and successful. At the same time a great propaganda drive is being made for tree planting in private lands. This is also popular for the economies of trees in the form of timber, fuel, or fruit tree crops are so attractive, with the high prices ruling at present, that the villagers are indulging in tree planting at an ever increased rate. This will have, and is already having, a very great effect upon relieving the pressure for fuel on the forests. This wave of tree planting was also born during the war period owing to shortages and high prices for tree products. It will be seen therefore that war-time influences and circumstances are now coming to the aid of the forests in a manner which could not have been foreseen.

At present no artificial reforestation is possible in the northern range forests owing to the presence of excessive grazing but the Forest Department is ready to start that work immediately grazing can be eradicated. It is hoped that the removal of this greatest and final obstacle to forestry may not be much longer delayed. It will be seen from the above that the speed and technique of reforestation silviculture has therefore been very greatly stimulated as a result of the peculiar circumstances which operated during the war period.

CHAPTER VIII.

LESSONS TO BE LEARNT FROM WAR-TIME EXPERIENCE AND THEIR APPLICATION TO FUTURE POLICY.

ROLE OF FORESTRY AND THE FOREST SERVICES IN WAR-TIME.

Within a generation two world wars have swept closely past Cyprus, on both occasions the forests were spared the devastation of being used as battlefields. Nevertheless because Cyprus is one of the last remaining areas in the eastern Mediterranean where tree growth survives, therefore very heavy demands were made on its forest resources. It is interesting to note, too, that on both occasions a very similar set of circumstances surrounded Cyprus in war-time, and almost exactly the same demands were made on its forests on each occasion. It appears therefore that because Cyprus is mostly surrounded by territories which have very inadequate forests, but is itself readily accessible to its neighbours, it is inevitable that it should be called upon to supply forest products during times of war when the normal sources of supply are cut off. It also is obvious that the Middle East is an area in which sudden emergencies are always liable to arise. With such surroundings it therefore is prudent for Cyprus to be ever watchful that its forests are kept in good repair. Fortunately, during the last war, it was possible to withstand the force of the demands made on the Cyprus forests without doing those forests any lasting harm. This was only possible because the fellings were widely spread and prudent silviculture was maintained throughout the emergency. Past experience has shown that in the event of another world conflict it is almost certain that the Middle East would again be cut off from its usual sources of imported timber and forest products. Cyprus would therefore again have to become self supporting and probably would have to export forest products as on previous occasions. The only ways in which future emergencies can be prudently prepared for are to build up the capital growing stock to full productivity and to construct and maintain a complete road and telephone communication system so that all productive areas are readily accessible at all times. As the forest crops thicken up and mature they will be increasingly better able to fulfil possible emergencies.

With regard to forest personnel, the recent war showed that their ordinary forest training and duty fits them particularly for certain forms of war duty. They know the inaccessible areas intimately and are fit and used to a rigorous life. They are just as much at home in the wild and inaccessible mountain lands of other territories as when in their own country. Should an emergency arise therefore these men will again be ready to deal with it either in Cyprus or anywhere else where their duties may be most urgently required.

ROLE OF TRADE ORGANIZATIONS IN WAR-TIME.

During the war trade organizations greatly assisted the forest service in supplying the war-time needs from the forests. For example, two private saw milling installations worked hard for a long period of the war in supplying urgent demands for timber. Similarly the transport companies played an important part. Also as mentioned in Chapter III above, very great assistance was rendered by leaders of timber trade organizations who were enrolled as Timber Control Officers. There were many other examples also. It may be said that the various trade organizations connected with forestry did assist greatly, and can be relied upon to do so again should any such emergency arise in the future. It is the policy of the Forest Department to sell its yields as far as possible as standing timber, and so to develop private enterprise to the fullest extent to handle all fellings, logging, transport, milling, grading, and marketing of the forest crop. It will be seen therefore that trade organizations may be expected to play an ever increasingly important position in any future emergencies that might arise.

NECESSITY FOR ADEQUATE RESERVES OF FOREST PRODUCE.

As regards the immediate post-war period, it has already been explained above that Cyprus has cut out the greater part of its yearly yields for some years ahead as advanced fellings. It is therefore clear that the forests cannot supply the needs of the immediate post-war years. Cyprus must therefore now rely upon imports of timber more than ever before for the next few years till the deficit overcut can be made good so that the forests can again produce their normal yearly sustained yields. Cyprus made these sacrifices in timber at the height of the war when other sources of supply were cut off from the Middle East Forces. It is imperative, therefore, that Cyprus should now receive its post-war imported requirements in timber as a share of the limited world supplies available during this critical period till the forests can resume normal production. It cannot yet be foreseen what the post-war consumption of timber would be if there were ample supplies available. The estimated figure of consumption for 1947 is 28,000 tons but it is extremely unlikely that a sufficient quantity of imported timber can be obtained to allow of that figure being consumed. There is no doubt that there is a very great demand for timber in Cyprus to-day, for the country has been virtually without timber for ordinary civil uses for some years and there is a very great need and demand for house construction and maintenance which cannot yet be met. It also must be remembered that Cyprus forests could not supply even half of the demand before the war so for many years Cyprus is bound to have an adverse timber budget. However, it is encouraging to record that the build up of forest capital growing stock is now taking place rapidly in many areas, so that the productive areas are continually increasing. At the same time extensive areas of bare lands are being reforested and so are being brought back into the rotation as fully stocked young age crops for the future. By these means the future growing stock is continually being built up and production will gradually increase till the whole area of forest land is brought back to a state of productivity. That will of course take many years but the period required is largely dependent upon the degree of protection which can be applied to the wasted out areas. With the forests in full production, improved means of economizing the use of timber, the urban areas and industry on mineral fuel, and the rural areas self supporting in wood-fuel, it may well be possible for Cyprus to become self supporting in timber. Future effort must therefore be directed towards restoring the productivity of the forests to its former level in order to provide sufficient future timber supplies as well as the other objects of management set out in Chapter I, Policy and Management.

MEASURES TO REMEDY ANY DEFICIENCIES REVEALED IN AFFORESTATION, IMPROVED FOREST MANAGEMENT OR MARKETING.

As is shown from the above, the main problem of Cyprus forest management in the immediate future, is to apply complete protection so that the wasted out forests may be regenerated by both natural and artificial means. This is an extremely difficult task in present circumstances, and will continue to be so till there is an overall land use plan and long term land use policy for the whole area of Cyprus. At present the forests are the only land areas being prudently controlled under long term management and reclamation plans. Because there is no general land use control the forests have to withstand the full impact of the abuses which are created by and centred upon the derelict lands outside the forests, over which the Forest Service has no control. As land degrades through misuse, cultivation gives way to uncontrolled grazing, the pressure for fuel and animal fodder consumes tree growth and soil cover alike, till erosion takes full control and so lands are degraded down to derelict grazing deserts. It is this class of land which mostly surrounds the forests and creates the main problems of forest protection. Hungry and uncontrolled flocks of goats do not stop their voracious depredations at the boundaries of the forests any more than do cold and fuelless villagers. These are basic problems which cannot be solved by increasing the forest protective staff. The only possible means of relief is to remove the basic causes of this pressure on the forests. For example, control the reasons that create derelict lands such as bad farming and consequent erosion; reclaim the derelict lands so that the shepherds may have a more remunerative and alternative mode of livelihood; grazing may then be prohibited or controlled; provide alternative fuel so that the villagers are not obliged to strip the hills bare. These are matters which have to be tackled outside the forests and illustrate the forms of remedy required to-day in Cyprus in order to allow the forests to recover to a fully productive state.

Forest management and marketing are both sound, it is reforestation that is required. Much has been done in recent years to reforest the denuded areas but this can only be applied to areas that have first been afforded complete protection from the abuses mentioned above. Wherever possible the Forest Department has eradicated forest grazing by compensating out forest graziers and providing them with alternative employment. Areas so freed of grazing are being reforested by both natural and artificial means, but large areas of potentially productive forest are still held in the strangling grip of uncontrolled grazing. It is imperative therefore that the forest grazing problem must be eradicated for ever before progress in reforestation can be greatly hastened. Where it persists forest grazing is still the main obstacle to forest reclamation, as also it is still the main cause of forest fires in the productive areas.

With regard to relieving the pressure on the forests for fuel, this is another major problem confronting forestry in Cyprus. In this case, however, the Forest Service is tackling the root of the evil most successfully and has had to go outside the forests to do so. The remedy for this evil is to provide alternative fuel

cheaper and nearer to the demand than that in the forests. By conversion to oil fuel and by creating tree crops in the private and village lands it is hoped to correct this evil. Much needs to be done in this respect, but such spectacular results have already been achieved that it seems certain that this policy is correct one and it should solve the problem.

RECONSTRUCTION AND REHABILITATION PROGRAMMES IN RELATION TO FORESTRY.

There is a development programme for Cyprus known as "A ten-year programme of development for Cyprus" published by the Government of Cyprus in 1946, which includes considerable forest development projects as well as many others which affect forestry vitally but which are outside the reach of forest control. For example in that programme are included prescriptions for the improvement of agriculture, irrigation, and soil conservation, which exactly fit in with forest policy and would relieve the present pressure on the forests from the derelict lands outside the forests. It also provides for a grid system for the electrification of Cyprus, which is a measure the Forest Department has been urging for years in order to provide an efficient alternative to the domestic and commercial use of wood-fuel and charcoal. This would surely relieve present excessive pressure on the dwindling wood-fuel resources of the Island. There are also excellent reports on the general matters of Land Utilization and the Fodder Resources of Cyprus that have become available in 1947. The latter deals with the whole complex question of grazing and correctly diagnoses and prescribes for the root of the evil which at present cripples any better land utilization projects. If these reports are adopted as high level land use policy then the basic obstacles confronting forestry and the establishment and tree growth in Cyprus would soon disappear. The recommendations of the above-mentioned reports provide all information required on these basic land problems at this stage, it now remains to be seen how far they may be adopted and applied.

ADEQUACY OF RESEARCH AND EDUCATION ORGANIZATIONS.

There is at present no provision for forest research or education in Cyprus. There is however a carefully planned project to establish a Forest School in Cyprus which would serve both Cyprus and other territories in the Middle East or elsewhere that might like to avail themselves of its facilities. This project has not yet received final approval but is hoped that it will go forward. Once this School could be set up it is intended that courses of technical instructions for both Forest Guard and Forester grades of staff would be provided. This would provide suitable training for the whole of the subordinate Forest Staff and so would step up the standard of forest knowledge and efficiency. This School would also take charge of all forest research and also provide the public with information on forest matters in the form of press articles, mobile cinema shows, lectures at schools and villages and so on. In this way it is hoped to enlist the support of the public and to enlighten them as to the values and advantages to be derived from their forest, to encourage the public to take an interest in and understand the management of their forests, to visit the forests, and to make full use of them as national parks for health and recreation. Once this can be attained it is confidently believed that many of the present obstacles to better forest protection would be overcome. The public is now beginning to realize that the forests are their national property and provide the community with very necessary and real advantages. It is the intention of the Forest Administration to foster and develop this aspect of public interest and co-operation as much as is possible.

NEED, IF ANY, FOR ALTERATIONS IN FOREST POLICY AND ADMINISTRATIVE ORGANIZATION ; STATUS OF PRIVATE FORESTS.

Forest policy has proved to be sound and is exactly the same now as before the war, in fact the war period difficulties and development proved beyond doubt that it was a correct and prudent policy. There is therefore no need to change forest policy. Similarly the forest administrative organization has proved satisfactory and capable of dealing with all war-time emergencies, no alterations are therefore necessary. With regard to the status of private forests, or perhaps in Cyprus it would be better to say "private forest lands" for in most cases forest growth is more or less absent on private lands, there is room for considerable improvement. In Cyprus there are large areas of private lands which not so long back supported forest growth, but which are now more or less derelict and unproductive.

It remains to be seen what land use policy is to be adopted towards such lands, but it is all too obvious that some effective control needs to be applied to prevent private forest lands from degenerating to erosion deserts. In areas where such derelict lands adjoin the State Forests it would almost certainly be prudent to buy them in, apply state reclamation, and add them to the existing State Forests so that they could then be under the management and protection of the Forest Service for the ultimate good of the community. When such derelict private lands are not near to State Forests, it would probably be best to form them into communal village forests under the control and management of the Forest Service, but with all revenues and benefits going to the village and with ownership vested in the village authoritative body. This is in fact already being done to some extent by the creation of "Village Fuel Areas" under the Colonial Development Scheme. This needs much wider application in order to reclaim derelict hill catchment lands with the approval, co-operation, and help of the villages concerned. Such lands might be reclaimed by these means and be a very real benefit to the villages in yielding timber, fuel, and tree fruit crops. This has proved to be a very successful policy in the case of the Village Fuel Areas. Such lands have the peculiar advantage of being the property of the village with the Forest Service acting only as the custodian of the village property. In these circumstances the villagers respect these works and do not destroy the plantations so formed. On the other hand State Forests are very different, they are still largely regarded as "no man's land" from which everyone may fairly pilfer if they can get away with the spoil undetected. This is a very important difference which needs to be carefully studied and made full use of. It seems to indicate that village communal responsibility is taking form and every opportunity should therefore be taken to encourage villages to establish and control their own plantations.

In the case of private forest lands which still carry a forest crop, these are admittedly a small proportion of the total, but even so it would be very desirable if they were under some form of control to prevent their total destruction. At present the only protection that can be applied to such private forests is a section in the Forest Law which enables an owner to place his forest under the protection of the Government voluntarily, if he wishes to avail himself of that facility. Some of the larger landowners, such as the Monasteries, do make use of this section of the Law, but being voluntary there is no uniformity about its application and many potentially good private forests have been wiped out in recent years owing to the imprudence of their owners and the urge to cash the entire crop of forest growth while prices are good.

R. R. WATERER,
Conservator of Forests.

April, 1947.

APPENDIX.

REPORT ON OIL CONVERSION IN CYPRUS.

Before the war Cyprus was almost entirely dependent upon woodfuel for all industrial, commercial and domestic purposes ; this demand for woodfuel continually increased and was far in excess of the ability of the country to produce such quantities. In such circumstances the pressure on tree and bush growth was so great that it was inevitable that the country would be stripped of all woodfuel producing growth unless some effective alternative was provided. With the outbreak of war, not only did the importation of coal for the railway and other requirements stop but the importation of oil fuels was greatly reduced. In addition to these difficulties large quantities of wood fuel were required for military needs. The war therefore caused a very greatly increased pressure for woodfuel which the country was not in a position to supply and these circumstances led to the exhaustion of the country's woodfuel supplies. During 1943 the position became so acute that in order to conserve remaining stocks and to protect the forests and fruit trees of Cyprus from the threat of destruction Government decided upon a policy of converting all wood burning installations to oil fuel. In 1944 the organization of the change over was entrusted to the Forest Department where it became an additional duty to the fuel and charcoal Section established in 1943 for the purpose of regulating the supply and distribution of fuel and charcoal all over the Island.

2. A start was made with Government and Military plant, and special legislation was passed giving compulsory powers to the Fuel and Charcoal Controller.

In the early stages local talent and materials were used to the largest possible extent, owing to war restrictions on the purchase of oil burners from abroad.

The following table illustrates the scope of the conversion by the increase in the use of oil. When the import of oil burning appliances was possible import duty was lifted to make the price to the public as low as possible.

		1943		1944		1945		1946
		—		—		—		—
Black oils (tons) . .	..	5,350	..	8,069	..	14,848	..	24,580
Kerosene (tons) . .	..	3,115	..	5,459	..	6,473	..	10,158
Fuelwood (tons) . .	..	220,350	..	205,130	..	114,550	..	70,200

3. The following types of wood burning installations have been converted into oil :—

(1) *Steam producing boilers.*—Out of 63 steam producing boilers in the Island 51 are now operating on oil. Of the remaining 12 ten are idle and two are working with domnut waste or coal. The Cyprus Wines & Spirits Co., Limassol, one of the leading wine making firms in the Island owning one of the last two boilers has recently received a big " Babcock " oil-fired boiler from the United Kingdom which it is expected will be put into operation shortly.

(2) *Furnaces for heating soap and pigment earths.*—All the soap furnaces amounting to 11 have been converted to oil burning. With regard to furnaces for heating pigment earths there are 3 factories in operation in Cyprus consuming about 3,700 tons of fuelwood annually. Conversion of this kind of furnaces is very difficult in view of the primitive type of the kilns in use but, after a series of experiments with locally-made burners, it was found possible to work these furnaces with oil with fairly satisfactory results.

In the meantime, as a result of the Fuel and Charcoal Controller's visit to the United Kingdom, offers have been received from firms in the United Kingdom for the erection of up-to-date continuous oil-fired kilns and the erection of these is being considered by terra umber manufacturers.

(3) *Kilns for burning lime and gypsum.*—(a) The lime industry was a big consumer of wood and has been one of the chief factors that have brought about the deterioration of the northern range hills to the stripped out condition they are now in. In 1937 there were 541 lime kilns in operation out of 1,070 consuming about 70,000 to 90,000 tons of woodfuel, but due to the limited war-time demand for lime and the great shortage of woodfuel supplies only 70 were found to be licensed by the Commissioners and the Forest Department in 1944.

The order making conversion of lime kilns compulsory was put into effect in May 1945 and was followed by a good response.

Conversion of lime kilns proceeded satisfactorily and by the second half of 1946 all lime kilns in operation were oil-fired.

(b) *Gypsum kilns.*—Little progress has been achieved towards converting gypsum kilns due to the many different types of kilns in the Island. Out of 67 gypsum kilns in operation only 17 have so far been converted to oil the remaining are still working with fuelwood, but two big firms in the Island have now started erecting up-to-date kilns at Limassol and Kalavasso which are expected to be put in operation late in 1948.

(4) *Kilns for burning bricks, pottery and tiles.*—(a) Conversion of brick and tile kilns is proceeding satisfactorily all kilns working on a commercial basis having been converted into oil. An exception to the order was made in the case of kiln owners burning small quantities of bricks or tiles for their own domestic use but as there is now at least one oil burning kiln in operation in each village from which villagers may obtain their requirements at reasonable prices no such exception will be made in future.

(b) *Pottery kilns.*—Except for pottery kilns at Famagusta and a village in Limassol District all pottery kilns in operation have been converted to oil.

(5) *Stoves for heating water in hotels, restaurants and public institutions.*—Hot water boilers, except ordinary domestic bath geysers, in hotels and public institutions have been converted into oil firing with locally made burners but as imported burners became available a number of the locally made burners were replaced.

(6) *Public Turkish baths and hot water bathing establishments.*—Most of the Turkish baths and hot water bathing establishments have already been converted to oil and are now working satisfactorily. Few Turkish baths remain unconverted but these are idle and are unlikely to be put into use again.

(7) *Bakers type ovens.*—Considerable opposition was met at first owing to the persistent thought that bread baked with oil would have a smell and would not be as palatable as bread baked with wood, but with enlightening propaganda and demonstrations this opposition gradually died down and ovens in all the six towns and big villages have been converted to oil.

(8) *Stills for the manufacture of spirits.*—As a result of the prohibition of coal all large stills operating before the war with coal were fired with wood during the war. Besides the big stills, which came under the order, a number of small stills were also converted at the owners' free will. However, there still remain a fairly big number of small stills which it is expected will have been converted by the end of 1947.

(9) *Government Railway.*—Seven out of the twelve railway locomotives have been converted into oil.

(10) *Domestic cooking stoves, etc.*—Mention has already been made in this report of the importation of a large number of primus stoves which have resulted in an annual saving of about 2,500 tons of fuelwood and 2,000 tons of charcoal which is equivalent to 12,000 tons of wood.

4. In spite of the many difficulties which the Forest Department has faced in the form of opposition in view of the revolutionary nature of the change from wood to oil, the lack of efficient burners and materials and the antiquated type of heaters especially in heavy industries such as lime, gypsum, brick, tile, and pottery, considerable progress has been achieved, the estimated total annual saving of woodfuel since the introduction of the scheme in 1944 being 150,000 tons. Some of the main features of the oil conversion campaign from the forest point of view are :—

(a) The permanent elimination of an acute demand for woodfuel from the Lefka area near very valuable State forests and the eradication of a gang of professional forest thieves who for the last 20 years had been systematically firing and raiding the forests to provide dry fuel for unlawful trade.

No relief could be attained till compulsory conversion to oil killed the demand and profits from the woodfuel trade.

(b) The elimination of the demand for woodfuel for the lime burning industry mostly situated along the Northern Range and the very great reduction of the demand for woodfuel for other purposes from the Northern Range forests. A good illustration of this is the reduction of detected forest offences for fuel cutting in that area from 340 in 1945 to 160 in 1946. Prior to oil conversion, a position had been reached along the whole length of the Northern Range similar to that described in (a) above.

The immediate relief and improvement of the forest protection problems on the Northern Range are very spectacular and quite unbelievable to those who have not known the conditions before and after conversion to oil.

5. Following this Report is a statement showing the number of heaters and the savings in woodfuel effected through conversion to oil up to 31st December, 1946. For a small country like Cyprus it will be realized what a very great relief has already been attained. Oil conversion will be pursued by every means possible as a necessary background to forest policy. The aim is to convert all industrial, commercial, and urban domestic use of woodfuel to oil or electricity. At the same time a considerable proportion of rural domestic usage of woodfuel will also be converted. It must therefore be a necessary long-term forest policy to press for the provision of cheap electric supply over the whole country, a project which fortunately is already started and would very greatly relieve pressure on the forests for fuel.

STATEMENT SHOWING NUMBER OF HEATERS AND ESTIMATED ANNUAL CONSUMPTION
OF WOODFUEL IN CYPRUS

Classification of heaters	No. of licensed heaters in 1944	Estimated quantity of fuel- wood consumed annually before conversion Tons	Total No. of heaters converted up to 31.12.46	Estimated annual saving of fuelwood on 31.12.46 Tons
1. Steam producing boilers	63	9,564	51	7,334
2. Furnaces for heating ores, pigment earths, soap constituents :				
(a) furnaces for pigment earths	15	3,700	—	—
(b) furnaces for soap constituents	11	262	11	262
3. Kilns for burning lime and gypsum :				
(a) kilns for burning lime	70	11,500	100	23,000
(b) kilns for burning gypsum	67	2,400	17	1,185
4. Kilns for burning or baking pottery, bricks and tiles :				
(a) kilns for burning bricks and tiles ..	140	5,600	56	3,060
(b) kilns for burning pottery	40	1,600	17	814
5. Stoves used for heating water or for cooking purposes in hotels, restaurants and public institutions (Figures not yet available for column 1)	—	10,000	41	1,041
6. Public Turkish Baths	27	1,404	20	1,366
7. Bakers type ovens in operation by Commis- sioner's licence	945	24,000	372	13,246
8. Stills for the manufacture of spirits	2,083	9,365	315	6,560
9. Tar or asphalt boilers	3	36	3	36
10. Boilers and other heaters not otherwise classified	300	3,000	250	2,600
11. Wood-burning heaters in Government Offices, Institutions, etc.	—	5,000	—	3,500
12. Government Railway Locomotives (7 using oil, 5 using coal)	12	4,424	7	4,424
13. Domestic cooking stoves, geysers, village type bakers ovens, heating stoves, etc.	—	10,000	—	2,500
		101,855		70,928
14. Estimated quantity of fuelwood in tons used for the manufacture of charcoal		60,000		
15. Saving in fuelwood as a result of decrease in charcoal consumption effected through use of kerosene stoves in coffee shops, households, etc., and of electric irons				30,000
Total saving through actual conversion ..				100,928
		161,855		100,928
REMARKS.				
Item 1.—Add to column 4: 2,230 tons of fuel- wood representing consumption of idle steam boilers as at 31st December, 1946, and those of the Cyprus Wine & Spirits Co. Ltd. and the Schiza Gum Factory, which operated with fuelwood during the war but have now turned to donnuts, coal, etc., as a result of the order				
				2,230
Item 3 (a).—Add to column 2: 58,500 tons representing consumption of about 471 unlicensed lime kilns which were out of use due to limited demand for lime during the war and which would have been consuming that figure if they had been in operation				
				58,500
To column 4: 47,000 tons consumption of remaining idle kilns				
				47,000
Item 11.—The difference of 1,500 tons repre- sents consumption of fuelwood in fire places and other heaters which were impossible to convert into oil-firing.				
GRAND TOTAL		220,355		150,158

AREA IN SQUARE MILES OF FOREST LAND ON 31st DECEMBER, 1945.

Category of forest land	Total area of unit	S t a t e F o r e s t				Private forest	Total forest land	Percent. of whole area of Cyprus	
		Production reserves	Protection reserves	Unreserved	Total State forest			Forest reserves	Total forest land
Main State Forest	530.37		530.37		530.37		530.37	14.83	14.83
Minor State Forest	91.91		91.91		91.91		91.91	2.58	2.58
Private Forest	30.00+					30.00	30.00		0.84
T o t a l	652.28		622.28		622.28	30.00	652.28	17.41	18.25

+ No accurate figures are available

Adjusted in accordance with revised figures computed for Appendix 1. 1945.

STATEMENT IN SQUARE MILES OF PROGRESS IN FOREST RESERVATION AND DEMARCATION DURING THE SEVEN YEAR PERIOD

1939-1945

Category of forest reserve	R e s e r v e s c o n s t i t u t e d & d e m a r c a t e d				
	on 1st January, 1939	Added during the 7 year period	Excluded during the 7 year period	On 31st. December, 1945	
Main State Forests	535.64	0.70	5.91) 0.06)	530.37	
Minor State Forests	86.00	5.91		91.91	
Total	621.64	6.61	5.97	622.28	

Adjusted in accordance with revised figures computed for Appendix 2 of 1945

APPENDIX 3.

STATEMENT IN SQUARE MILES OF PROGRESS MADE IN WORKING PLANS DURING THE SEVEN YEAR PERIOD 1939-1945

Territorial Unit	Area Under Working Plans				Area not under plans on 31st. Dec., 1945	Total area	Area for which plans were revised during the 7 year period
	On 1st. Jan. 1939	Added during the 7 year period.	Excluded during the 7 year period	On 31st. Dec. 1945			
Main State Forests	359.10	29.95	4.76	384.29	146.08	530.37	93.80
Minor State Forests					91.91	91.91	
T o t a l	359.10	29.95	4.76	384.29	237.99	622.28	93.80

Y e a r s	A d d e d		Excluded		Revised	
	Main	Minor	Main	Minor	Main	Minor
1939	-	-	-	-	-	-
1940	-	-	-	-	-	-
1941	10.00	don.	-	-	44.30	-
1942	-	-	-	-	-	-
1943	0.02	-	-	-	-	-
1944	3.82	-	-	-	49.50	-
1945	26.10	-	4.76	-	-	-
T o t a l	39.95	-	4.76	-	93.80	-

RECORD IN MILES OF FOREST COMMUNICATIONS DURING THE 7 YEAR PERIOD 1939-1945

Category of Forest Land	FOREST ROADS				P.W.D. & VILLAGE ROADS				FOREST PATHS			
	Total on 1.1.1939	Added during the 7 year period	Abandoned during the 7 year period	Total at the end of the 7 year period	Total on 1.1.1939	Added during the 7 year period	Abandoned during the 7 year period	Total at the end of the 7 year period	Total on 1.1.1939	Added during the 7 year period.	Abandoned during the 7 year period	Total at the end of the 7 year period.
Main State Forests	142.47	171.56	35.26	278.77.	116.45	2.21	-	118.66	475.43	76.98	82.64	469.77
Minor State Forests	14.00	-	-	14.00	68.87	-	-	68.87	121.63	-	-	121.63
T o t a l	156.47	171.56	35.26	292.77	185.32	2.21	-	187.53	597.06	76.98	82.64	591.40

Analysis of Roads, Paths etc. added or abandoned during the period.

Year	Forest Roads		P.W.D. & Village R.		Forest Paths		Maintenance of Roads and Bridges	Construction and Improv. of Roads	Construction and Maintenance of P.
	Miles Added	Abandon.	Miles Added	Abandon.	Miles Added	Abandon.	£	£	£
1939	27.95	3.00	-	-	47.78	4.34	1361	3998	604
1940	39.21	2.18	-	-	23.00	10.00	1795	4643	283
1941	52.53	-	1.00	-	1.50	34.37	1783	10567	24
1942	17.25	-	-	-	-	14.75	5115	5707	6
1943	10.57	-	-	-	-	5.00	4795	5639	1982
1944	13.27	-	0.32	-	-	10.70	8405	5727	-
1945	10.78	18.90	0.89	-	4.70	3.48	10119	2574	658
		+ 11.18							
TOTAL	171.56	35.26	2.21	-	76.98	82.64	33374	38855	3557

+adjusted in accordance with revised figures computed for appendix 4 of 1945

STATEMENT OF FOREST OFFENCES FOR THE 7 YEAR PERIOD 1939-1945.

Forest offences in relation to damage to forest by fire, unauthorized possession of F. produce, unauth. selling, unauth. grazing, land encroachment.	Cases taken to Court							Cases dealt with departmentally		Offenders unknown		Total all offences		Confiscated property, sold or released.		Compensation for damage	
	Imprisonment without option of fine	F i n e d		Cautioned	Acquitted	Bound over	Withdrawn										
Years.	Cases	Cases	£	Cases	Cases	Cases	Cases	Cases	£	Cases	£	Cases	Persons	Cases	£	Cases	£
1939	16	1136	690	172	35			4298	886	3		5657	6692	125	35	530	221
1940	21	1468	680	117	81			4532	824	1	1	6219	7177	151	30	738	207
1941	30	2288	1359	149	63			5144	1151	2	6	7674	9292	149	68	1651	328
1942	9	1549	874	112	24			4932	1569			6626	7457	136	47	926	315
1943	15	1847	1758	138	44			6751	2985			8795	9812	226	221	1523	707
1944	21	2863	2698	90	51			6392	3600	17	70	9437	10477	124	133	1921	1262
1945	32	2351	3307	86	98	97	5	5892	3830	18	27	8561	9308	117	150	1837	1043
TOTAL	164	13502	11366	864	396	97	5	37941	14845	41	104	52969	60245	1028	684	9126	4083

OUTTURN IN SOLID CUBIC FEET (WHOLE STEM VOLUME OVERBARK) OF TIMBER & FUEL FOR THE SEVEN YEAR PERIOD

1939-1945

YEAR	Territorial Unit	Logs (Sold standing)	Sawn (Royalty Sales & Departmental Timber)	Other hewn wood (Plough wood etc.)	Round wood: Pit props, Volikia etc.	Firewood	Charcoal c.ft. of timber equivalent.	Total vol. equivalent in round timber	Total Value	Fuel taken by privileged villages (included in total volume).
1939		448,301	29,658	9,514	77,866	2,899,967	80,570	3,545,876	17,162	2,189,600
1940		1,233,572	551,935	23,672	64,811	2,893,168	120,020	4,887,178	61,860	2,311,400
1941		277,602	993,322	16,723	113,050	2,565,452	196,207	4,262,356	61,659	2,073,600
1942	Main and	61,446	890,868	6,441	174,557	3,082,413	308,695	4,524,420	80,502	2,443,280
1943	Minor State	521,347	95,339	307,515	88,142	4,353,587	846,699	6,212,629	195,017	2,829,600
1944	Forests	344,142	109,235	4,624	64,134	3,047,681	780,362	4,350,178	139,640	2,513,600
1945		302,816	141,190	12,824	72,382	1,542,599	399,654	2,471,465	104,259	1,105,560
total		3,289,226	2,811,547	381,313	654,942	20,384,867	2,732,207	30,254,102	660,109	15,466,640
average		469,890	401,650	54,473	93,563	2,912,124	390,315	4,322,000	94,301	2,209,520

APPENDIX 7.

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OUTTURN OF MINOR FOREST PRODUCE DURING THE 7 YEAR PERIOD 1939-1945

Territorial Unit	Folder, Fay Grass, vetch and leaves		Tans & dyes (sumac, bark)		Vegetable oils (origanum, sage, laurel)		Pitch, tar, resin		Canes	Miscellaneous stones and earth		Miscellaneous fruit and seeds		Miscellaneous thyme, pine cones, humus & sawdust		
CYPRUS	Tons	Value £	Tons	Value £	Tons	Value £	Tons	Value £	piece	Val. £ free	Tons	Value free	Tons	Value £	Tons	Value £
1939	32.25	8	8.50	5	0.81	81					6,163	-	236.00	248	1.80	1
1940	94.83	14	6.35	7	1.12	49					5,816	-	28.63	53	6.37	5
1941	49.00	9	235.00	34	26.00	49	0.71	6			4,481	-	32.00	23	2.00	2
1942	46.30	11	214.00	39	0.79	35			70	-	2,016	-	72.00	153	14.00	15
1943	28.00	4	470.35	107	0.99	39			600	-	163	-	153.26	206	63.69	16
1944	33.55	5	2118.38	967	1.91	35	1.45	24			880	-	91.81	183	93.15	27
1945	35.67	6	98.82	54	4.67	103	0.21	3			1,025	-	43.14	192	56.40	25
T o t a l	319.30	57	3151.40	1213	36.29	391	2.37	33	670	-	20,544	-	656.84	1,058	242.41	91
AVERAGE ANNUAL	45.61	8	450.20	173	5.18	56	0.34	5	96	-	2,935	-	93.83	151	34.63	13

APPENDIX 8.

24

COMPARATIVE FINANCIAL STATEMENT FOR THE 10 YEARS ENDED 31st. DECEMBER, 1945.

YEARS	Forest Revenue	Revenue from Col. Dev. Funds £	Forest Expenditure £	Expenditure under Col. Dev. £	Deficit £	Surplus £
1936	9,521		23,463		13,942	
1937	13,736		23,384		9,648	
1938	13,074		28,120		15,046	
1939	12,134		35,229		23,095	
1940	56,123		61,099		4,976	
1941	56,881	16,672	47,291	16,672		9,590
1942	74,864	24,677	87,283	24,677	12,419	
1943	181,031	19,635	140,519	19,635		40,512
1944	127,774	21,621	144,498	21,621	16,724	
1945	100,467	33,285	100,330	33,285		137
Total	645,605	115,890	691,216	115,890	95,850	50,239

STRENGTH OF FOREST STAFF ON 31st DECEMBER, 1945.

Territorial Unit	Senior Staff			Subordinate Field Staff								
	Colonial Forest Service	Others	Total	Forest Rangers	Foresters	Forest Guards	Temp. Forest Guards	Forest Foremen	Prosecuting officers	Messenger St. Keeper, etc.	Total	
CYPRUS	5	1+	7	6	14	72	46	84	4	47++	273	

+ Temporary Forest Surveyor

++ Included F.C.C. Staff

Clerical Staff	Technical Subordinates	Permanent labour Force
30	31	60

PENDIX 10.

STATEMENT OF THE INCIDENCE OF FOREST GRAZING FOR THE 7 YEAR PERIOD 1939-1945.

	1939	1940	1941	1942	1943	1944	1945
(A)							
Grazing Permits issued:-							
Number of permits:-	301 (149)	287 (154)	250 (335)	200 (109)	179 (167)	125 (265)	111 (274)
Number of animals:-							
(a) Goats	13956 (4472)	12196 (4308)	9166 (5816)	7612 (1834)	7256 (1955)	6452 (3713)	5414 (5263)
(b) Sheep	4612 (132)	5531 (54)	5166 (3620)	3166 (1213)	2607 (2216)	5603 (2282)	1615 (1652)
(c) Other animals	691 (32)	505 (122)	822 (115)	827 (33)	785 (78)	373 (205)	356 (291)
Fees Collected	£85. 2.3	£91.14.4	£175. 2.8	£72.17.1	£77. 5.1	£171.17.5	£172.19.4

Cont'd

N.B.

Figures in brackets are for number of permits issued on payment and number of animals grazing on these permits.

STATEMENT OF THE INCIDENCE OF FOREST GRAZING FOR THE 7 YEAR PERIOD 1939-1945

Cont'd (B) Grazing Statistics

Y e a r s	1939	1940	1941	1942	1943	1944	1945
1. Area grazed over lawfully in sq. miles	235.68	206.85	207.46	83.46	85.46	55.46	61.75
2. Area theoretically closed to grazing in sq. miles	386.16	414.99	414.38	538.38	536.40	566.70	560.53
3. Total number of goats in the Island counted for taxation in March	184,090	187,506	202,194	171,206	159,878	207,499	225,753
4. No. of goats allowed to graze in the State forest	18,428	16,504	14,982	9,446	9,211	10,175	10,677
5. No. of goats allowed to graze in the forests expressed as percentage of total number of goats	10.01%	8.80%	7.40%	5.51%	5.76%	4.90%	4.73%
6. Total number of sheep in the Island counted for taxation in March.	300,485	309,048	328,348	285,299	265,159	302,821	330,871
7. Number of sheep allowed to graze in State forests	4,744	5,585	8,786	4,379	4,823	7,885	6,269
8. Number of sheep allowed to graze in the forests expressed as percentage of total number of sheep	1.58%	1.80%	2.70%	1.54%	1.82%	2.60%	1.89%

STATEMENT OF FIRE PROTECTIVE WORKS & FIRE INCIDENCE DURING THE 7 YEAR PERIOD 1939-1945

A. FIRE TRACES

1. Fire traces. An average of 28 miles of fire traces were maintained during the 7 year period at an average annual cost of £ 131.

B. TELEPHONESMiles

1. Length of line on 1.1.39	243
2. Lines laid during the period	<u>85</u>
Total on 31.12.45	<u>328</u>
3. Number of instruments on 1.1.39	60
4. Number of instruments on 31.12.45	80
5. Number of switch boards on 1.1.39	5
6. Number of switch boards on 31.12.45	5

C. FIRE DETECTION

	1939	1940	1941	1942	1943	1944	1945
Fire Watchers	<u>46</u>	<u>48</u>	<u>43</u>	<u>44</u>	<u>48</u>	<u>56</u>	<u>51</u>
Fire Watchers' Huts	12	13	13	13	13	13	13

(Continued)

D. FIRE INCIDENCE

Year	No. of fires	Area burnt sq. miles	Assessed damage £ +	Cost of extinction £	C a u s e
1939	38	0.19	254	91	2 unknown, 34 accidental, 2 malicious
1940	49	0.86	653	420	7 malicious, 41 accidental, 1 lightning
1941	72	0.88	1,143	516	15 unknown, 23 accidental, 19 malicious, 15 carelessness
1942	61	0.66	1,795	864	4 unknown, 18 accidental, 17 malicious, 18 carelessness, 4 lightning.
1943	76	1.29	2,940	1,056	7 unknown, 52 accidental, 17 malicious,
1944	93	0.99	5,812	1,815	4 unknown, 49 accidental, 40 malicious,
1945	60	3.43	20,560	5,424	13 carelessness, 28 accidental, 18 malicious, 1 lightning.

+ The figures do not include cost of reclamation,
 The figures do not include cost of deterioration of site,
 The figures do not include cost of compound interest on capital value at the time of the fire.

(A) ANALYSIS OF FOREST OFFENCES TAKEN UP BY THE FOREST DEPT. FOR THE 7 YEAR PERIOD 1939-1945.

Forest offences in relation to damage to forest by fire, unautho- rized possession, unauthorized fel- lings, unauth. grazing, land encroachment.					Cases taken to Court.					
	Convicted				Cautioned	Acquitted	B.Over	With- drawn	Total Court Cases.	
	Imprisonment without opt- ion of fine.	Fined £								
		Cases	Cases	Fine £	Damages compens. £	Cases	Cases	Cases	Cases	Cases	Persons.
1939	16	1136	690	221	172	35	-	-	1359	1645
1940	21	1468	680	207	117	81	-	-	1687	2015
1941	30	2288	1359	328	149	63	-	-	2530	3012
1942	9	1549	874	315	112	24	-	-	1694	1977
1943	15	1847	1758	707	138	44	-	-	2044	2437
1944	41	2863	2698	1262	90	51	-	-	3045	3546
1945	32	2351	3307	1043	86	98	97	5	2669	2921
T o t a l	164	13502	11366	4083	864	396	97	5	15028	17553

(Continued).

(B) ANALYSIS OF FOREST OFFENCES TAKEN P BY FOREST DEPT. FOR THE 7 YEAR PERIOD 1939-1945.

Forest offences in relation to damage to forest by fire, unautho- rized possession, unauthorized fel- lings, unauth. grazing, land encroachment.	C a s e s d e a l t w i t h D e p a r t m e n t a l l y .								Confisc. pro- perty sold, released.		Cases pend- ing from pre- vious year No.	Cases out- stand- ing at the end of the year No.
	Compounded		Warned Cases	Cancelled Cases	Offenders unknown (undetected)		Total No. of cases dealt with Dept/lly					
	Cases	Amount			Cases	Estimated loss £	Cases	Persons.	Cases	Amount £		
1939	3529	886	645	121	3	1	4298	5047	125	35	617	762
1940	3974	824	475	82	1	1	4532	5162	151	30	762	1009
1941	4753	1151	296	93	2	6	5144	6280	149	68	1009	980
1942	4719	1569	161	52	-	-	4932	5480	136	47	980	727
1943	6519	2985	161	71	-	-	6751	7405	226	221	727	809
1944	6242	3600	87	46	17	69	6392	6931	124	133	809	1053
1945	5733	3830	35	106	18	27	5892	6387	117	150	1053	1154
Total	35469	14845	1860	571	41	104	37941	42692	1028	684		

STATEMENT OF FOREST REVENUE COLLECTED DURING THE 8 YEAR PERIOD 1938-1945.

ITEM OF REVENUE	1938 £	1939 £	1940 £	1941 £	1942 £	1943 £	1944 £	1945 £
<u>Permit Fees</u>								
Erection of wood burning steam engines, Permits for	-	-	-	6	15	30	-	-
Erection of wood burning stills or Furnaces, Permits for	-	-	-	280	150	9	-	-
Fuel Permits	70	199	244	-	339	838	883	988
Permits to manufacture, use or possess any timber making instruments	-	-	-	-	-	1	-	-
Charcoal Permits	45	64	48	90	140	51	12	7
Grazing Permits	115	85	77	106	52	51	45	44
Lime Permits	-	-	-	47	67	89	51	47
Pottery Permits	-	-	-	2	10	4	1	7
Tiles Permits	-	-	-	-	4	4	13	2
Bricks Permits	-	-	-	-	9	14	2	2
Gypsum Permits	-	-	-	-	14	5	9	6
TOTAL	231	349	369	552	802	1,098	1,018	1,104
<u>Sales of Timber etc.</u>								
Sale of standing trees	10,215	9,281	4,912	2,539	2,339	140	198	6,988
Sale of timber	832	720	48,444	51,613	58,491	101,660	51,302	31,909
Sale of fuel	739	601	1,699	1,284	7,595	31,298	29,481	15,454

NOTE: To save space shillings and pence have been omitted. The totals however, represent actual round figures in sterling.

STATEMENT OF EXPENDITURE FROM FOREST DEPARTMENT VOTES DURING THE 8 YEAR PERIOD 1938-1945

Subhead	1938 £	1939 £	1940 £	1941 £	1942 £	1943 £	1944 £	1945 £
Personal Emoluments	11,170	12,568	13,383	12,155	12,629	12,916	13,919	14,536
Unestablished Staff	1,299	2,569	2,638	2,701	2,939	2,977	2,899	5,159
Travelling	1,299	1,452	1,644	1,901	2,344	2,663	4,380	5,104
Fire Protection	797	798	772	780	955	1,063	1,947	3,155
Library	9	9	8	3	2	8	2	16
Telephones	717	834	875	1,087	1,290	2,519	2,386	2,197
Fire Fighting	48	95	418	510	892	1,055	2,057	5,435
Silviculture	1,096	1,199	733	299	246	234	295	869
Transport of Materials & Conf.	39	25	280	11	18	34	36	40
Salvage of burnt trees	149	54	296	5	-	-	-	1,791
Supervision of tree felling	594	691	694	682	824	871	921	914
M/cce of Plant, M.& Animals	933	1,104	1,246	1,154	820	3,930	5,594	5,353
M/cce of Motor Transport	-	-	-	-	-	80	550	1,294
Tools	44	84	181	45	61	61	86	97
M/cce of Roads and Bridges	1,639	1,800	1,795	1,783	3,974	4,797	8,399	10,119
M/cce & Equipment of Buildings	662	575	663	162	408	564	919	1,182
Delimitation F.S.& W.Plans	1,244	1,789	1,833	1,672	1,337	551	714	1,202

APPENDIX 14 (c'mued)

	1938 £	1939 £	1940 £	1941 £	1942 £	1943 £	1944 £	1945 £
Water Supplies	197	145	145	48	51	101	136	103
Uniforms	348	308	493	129	193	784	543	738
Rent	65	84	255	256	242	268	315	341
Lighting, Heating & El.Power	98	79	77	45	94	80	154	186
Contributions	336	341	320	569	441	499	595	475
Leave, sick & accident pay to daily wages employees	-	-	-	-	-	-	124	123
Forest Protection.	-	-	-	7	3	3	68	17
, Plantations, Govt.H.Grounds	-	-	57	60	59	82	110	128
Rewards	3	-	-	-	-	-	-	-
Refunds	-	-	3	-	7	-	-	98
Incidentals	39	46	78	43	52	63	76	74
Construction & Impr.of Roads	2,188	3,997	4,643	9,963	5,712	5,639	4,955	199
Afforestation	-	-	1,985	6,708	18,964	13,996	16,664	21,806
Extraction and supply of timber	-	1,309	27,460	37,078	90,769	134,463	108,640	47,556
Village Fuel Areas	-	-	-	-	-	-	-	11,479
Utilisation Section	149	143	57	-	-	-	-	-
Allowance to Graders	14	-	-	-	-	-	-	-
New Buildings	1,934	1,624	319	-	981	-	-	-
Flood and Storm Damages	997	-	-	-	-	-	-	-
Purchase of land	-	1,294	13	-	-	-	-	-

[illegible]

EXPENDITURE INCURRED BY FOREST DEPARTMENT FROM OTHER VOTES FOR THE 8 YEAR PERIOD 1938-1945

Subhead	1938 £	1939 £	1940 £	1941 £	1942 £	1943 £	1944 £	1945 £
M/ce of Govt. House Grounds	60	4	-	-	-	-	-	-
Village & other roads & Minor Works) Ordinary Expenditure	60	90	110	24	199	14	417	73
Village & other roads & Minor Works) Special Expenditure	-	100	-	-	193	299	19	24
Suspense Account Unallocated Stores	28	-	-	-	-	-	-	-
Grants Charitable	40	-	-	-	-	-	-	-
Misc. Advertising	27	25	-	-	-	-	-	-
Compensation for Goats	8,400	6,549	1,348	-	-	-	-	-
(P.W.D.) M/ce & Supply of furniture	-	-	72	-	-	-	-	-
Preservation of Moufflon	-	-	99	42	65	81	67	25
Defence: Coast Watcher Service	-	-	89	383	860	941	703	-
Agricultural Debtors Relief	-	-	40	69	-	84	-	-
Defence: Cyprus Volunteer Force	-	-	426	-	-	-	-	-
Relief Works	-	-	199	200	-	-	-	-
Defence: Travelling	-	-	-	287	-	-	-	-
Tuberculosis, Sanatorium Kyperounda	-	-	-	39	-	-	-	-
Telephone Service	-	-	-	-	97	74	-	-
Timber Control	-	-	-	-	278	1,592	3,645	4,139

Note: To save space shillings and piastres have been omitted. The totals, however, represent actual round figures in sterling.