GENERAL MEETING, SLIGO, 2nd JUNE

During the Annual Excursion a well-attended General Meeting of the Society was held in the Imperial Hotel, Sligo, at 8.30 p.m. on 2nd June, 1948. Mr. McEvoy, Excursion Convener, presided.

Mr. O'Beirne read the paper on "Afforestation of Sand Dunes," the text of which follows :—

AFFORESTATION OF SAND DUNES

"Along exposed lowlying coasts, the ocean is constantly washing up large quantities of sand which, when dried, is blown about by the winds forming a series of irregular hills, known as "Sand Dunes." The sand from these dunes is constantly shifting inland by the force of the gales, invading and destroying arable land at a rate varying with the wind direction and exposure, but 14 ft. per year is not uncommon.

"So great was the destruction being caused to good land about the middle of the eighteenth century that many Governments in Europe undertook costly experiments in the fixing and afforestation of these sand dunes and a great measure of success was achieved by Germany, Holland, Denmark and France. Vast areas were fixed and afforested but it was in France that the greatest work of reclamation was undertaken.

"At the beginning of the 19th century the vast tract of country known as the Landes, lying between Bordeaux and Bayonne, 160 miles in length and extending inland for 60 miles, was covered by drifting sand dunes rising to the height of 250 feet in places, with malaria-infested lagoons here and there. The whole area was a poor, unhealthy desert waste and the sands continued to devastate the country inland, covering farms, houses, trees. So the French Government at the time were obliged to allocate large funds in their effort to cope with the problem.

"The first step in this work was the erection of a great sand hill, called a "littoral dune" along the sea coast about 100 yards in from the high water mark. This was accomplished, not by engineers, but by foresters, availing of the forces of nature. It is well known that shifting sand tends to accumulate around obstacles in its path. So a palisade composed of planks 6 ft. x 6 ins. x 1 in. was first erected along the coast. The planks were pointed at one end, driven three feet into the sand, a space of an inch being left between them to enable sufficient sand to pass through to cover the back of the planks. As these planks became covered by the sand freshly blown up from the sea they were pulled up by levers a further three feet and a second fence started a short distance further inland to give width to the dune to prevent the sand escaping inland. So the work was carried on year by year until a "littoral dune" 60 feet high was built up. This was "fixed" by the planting of marram grass (Psamma This grass has long creeping roots which help to Arenaria). bind the particles of sand together and thus prevent its being shifted by the winds. In addition, when the marram is bound by drifting sand it is able to adjust itself to the new soil level.



"The area behind the littoral dune was then taken in hand and gradually dealt with by the sowing of a mixture of the following seeds per acre :—

> 9 lbs. Maritime Pine (Pinus Pinaster), 8 lbs. Broom (Sarothamnus (Cytisus) scoparius), 3½ lbs. Marram Grass (Psamma arenaria).

"After sowing, the ground was covered by branches of conifers or other trees, heather, broom or seaweed when available, to keep the sands from shifting while the seeds were germinating. The seedlings came up together and soon formed a covering which permanently fixed the sands. In this way the greatest forest in Western Europe was established, at an average cost of £15 per acre, covering an area of a million and a half acres.

"The area is now prosperous and healthy with towns and villages and numerous industries. The trees are tapped, and large quantities of resin collected in cans hung on the trees. From this resin, turpentine, varnish and other products are obtained and the timber is used for pit props, railway sleepers, boards, etc. Before felling the trees are bled to death and this extraction of the resin is said to improve the timber for many purposes.

"The more exposed part of the forest is worked on the Selection System so that the ground is never completely uncovered, and the trees are naturally regenerated, supplemented by sowing of seed where necessary. At the Southern warmer end of the forest *Quercus Suber* (Cork Oak) was used with the Maritime Pine, and was found very profitable for the production of commercial cork.

"In the case of the sand dunes on the coasts of Germany, Holland and Denmark, the "littoral dune" was first erected and itself and the sand on the leeward side were fixed by the planting of marram grass and the ground then covered by heather, broom and branches of trees and as soon as the sands were fixed trees were introduced by planting. Corsican, Austrian and Mountain pines were used as well as Maritime pine and the cost per acre of the whole work was as high as £40 per acre. Although the initial cost appeared great, it was outweighed by the benefits of rendering unproductive land productive and by the saving of the good land from the encroachment of shifting sand, not to mention the aesthetic benefits.

"In this country although we have plenty of sand dunes around our coasts we have no evidence that the Government undertook any such schemes in those far-off days. Lord Palmerston, however, who had an estate at Mullaghmore in Co. Sligo, which contained a large area of sand dunes, seeing

what was being done on the Continent, had some sacks of Maritime pine seeds sent over and sown in the sands at Mullaghmore. No preparation of the ground appears to have been done except fencing but marram grass had been introduced earlier and the sand was partly fixed. A forest of 200 acres of Maritime pine was established. I visited the forest in 1909 and found that most of the trees were then about 70 years old and varied in height from 30 to 62 feet with breast high girths from 3 ft. to 5 ft. 3 in. and with about 300 trees per acre. The trees on the first hundred yards of the exposed side were badly broken but the damage decreased and the height growth increased further inland. Some (Hippophae Rhamnoides), Escallonias, Box Seabuckthorn and a few Scots pines were mixed here and there with the Maritime pine.

"At the time of my visit the estate had passed to a Mr. Ashley whose steward, Mr. Bracken, took considerable interest in the sowing of Maritime pine seeds and had considerable success on cutaway bog on another part of the estate a few miles inland. The seeds were sown on prepared spots of a square foot, four feet apart. Some of these trees were up to 20 feet high and appeared to be doing well except in swampy places where they looked yellow.

"Much of the old Maritime pine was cut down and sold during the first Great War and a recent visit revealed that much of the ground where the old trees stood had reverted to shifting sand and the place is infested with rabbits which prevent any natural regeneration of trees. On the Southern side of the estate a few acres of the original Maritime pine remain. A number of specimens measured showed an average girth at breast height of 77 inches and height of 70 feet.

"The Land Commission since its formation has expended considerable sums in the fixing of sands around our coasts and in recent years the Forestry Division carried out some planting of sand dunes, but much still remains to be done and it is hoped that efforts in that respect will be intensified."

DISCUSSION.

The paper was received with keen interest and was the subject of a lively discussion to which many members contributed.

Mr. McCormack referred to the failure of an attempt to secure regeneration at Mullaghmore about 15 years ago when an area was fenced against rabbits. He suggested that the trouble lay in the retention of the seed in the Maritime cones. On this point Mr. Clear mentioned that when Maritime pine bushwood with cones attached is spread on sand dunes the cones open in the heat reflected by the sand. Mr. Galvin emphasised that heavy seed of this type does not travel far and the parent trees might be too old for the production of good seed. Certainly cone-bearing at Mullaghmore has decreased in recent years.

Mr. McEvoy summed up the discussion and referred to the afforestation of the Culbin sands on the East Scottish coast by the Forestry Commission. There the sands are thatched with conifer tops before planting and it was considered that this was beneficial not only in keeping the sand from moving but in protecting the surface from extremes of temperature and in providing a certain amount of humus. He regretted having to close so interesting a discussion and congratulated Mr. O'Beirne on standing up to such a searching barrage of questions. It was now time to call on Mr. FitzPatrick to open the second part of the night's programme.

DISCUSSION ON PRIVATE FORESTRY

The discussion was opened by Mr. FitzPatrick who said that it was usual in Ireland to lay all the blame for the poor state of our woods on the shoulders of the Government. In his view the private owners who were in possession of the bulk of these woods should not escape criticism. Forty years ago, when the last comprehensive examination of forest resources was made by a Departmental Commission, the private owners were allotted the planting of half a million acres of bare land and the regeneration of a quarter million acres of existing woodlands in the scheme then drawn up for the whole country. They had fallen down badly in that task. It is true that circumstances were against them, but one wonders how many made serious effort to make use of the very real advantages which they enjoyed, of which the principal ones were ownership of the land and the tradition and knowledge of tree planting on their estates.

Lack of interest on the part of owners was largely to blame. They did not care for tree planting or woodland management and gradually the knowledge accumulated over more than a hundred years of successful estate forestry was lost. In some cases excess sentimentality about treesmeant that owners would not consent to the felling of a single tree and as, they indicated their overmature woodsand congested plantations, they announced with pride that they "loved their trees."

Some of the blame could, however, fairly be apportioned to the State, the nurserymen and the sawmillers. The State for many years left private landowners in uncertainty as to the ultimate fate of their properties under the Land Acts. Rates, taxes and death duties pressed heavily on the wooded estate and there was little income left to spend on improvements. Nurserymens' charges for planting stock were sometimes excessive and were not encouraging to an owner anxious to re-afforest. Sawmillers, too, did not always treat the private owner fairly. With high costs of establishment, high rates and taxes and finally a low return for the product, the practice of forestry went out of favour with the average owner who showed little inclination or ability to fight for his rights.

What remedies can be suggested? Owners can join this Society and re-awaken their interest and re-learn what they have forgotten about trees. They can co-operate in buying and selling and in the use of labour-saving machines and they can make further use of the State schemes of grants and technical advice. The State might help by easing the restrictive parts of the Forestry Act which tends to set people against trees, as restriction, like compulsion, always does, and instead encourage owners by instruction and advice. People such as nurserymen could help by setting up as contractors to carry out schemes of planting and other woodland operations on private lands at reasonable rates.

At the conclusion of Mr. FitzPatrick's remarks the Chairman declared the subject open for general discussion. The speeches maintained a very high level both as practical contributions and as oratorical efforts and all aspects of the problem were covered by private landowners, State and private foresters, timber merchants, nurserymen, etc.

Capt. Hamilton referred to the very inadequate compensation for timber commandeered in the first war. He also complained of the quality of Irish nursery stock as compared with Scottish plants.

Mr. Galvin considered that this unfavourable comparison was based on an exception and claimed that Irish plants were well up to standard and had even competed successfully in the Scottish market. His firm had been in the nursery business for 150 years. His experience was that the irregularity of the demand hindered the trade and they were dependent on the County Council schemes to keep going.

Mr. O'Carroll thought that prices of $\pounds 12$ a thousand for Sitka and $\pounds 17$ 10s. for beech too high and complained that plants were too big leaving the nurseries.

Mr. Morehead said that in Britain the Dedication Scheme for private woodland was the result of agreed policy between the State and the private owner. He asked if any definite forest policy had been accepted here and insisted that such a policy was necessary as a logical basis of cooperation. He also considered that control of silviculture was necessary. Mr. Chisholm agreed with Mr. Crammond on the necessity of a trained forester on the large estate. The land steward's training was very different and he was not equipped to look after the woods. The estate forester had a different problem and required a wide practical experience and a University training, and he had usually to run a sawmill. Speaking of the attempt to combine game and timber in the objects of management he stated that he had worked on an estate where 10,000 pheasant were reared without interfering with the work of the woodsmen up to the day of the "shoot."

Mr. Clear, in an important contribution, said that the surest way to improve private forestry was to make it more remunerative. The war-time standing timber prices had been fixed too low and were not adjusted as other prices rose. It was up to the State service to create and foster markets. There was a general lack of skill in the handling of private woods and State forestry officers should instruct owners in the value of their property and in the art of thinning, etc. A flying-corps of experienced forestry workers would be an advantage and there was room for co-operation between owners.

Mr. Langley, speaking as a small owner, complained of the difficulty in getting plants and suggested de-rating of forest land as an encouragement to plant.

Mr. FitzPatrick replying to points raised said that 33 million plants were required to fulfil emergency replanting conditions and suggested that owners should order their requirements 2-3 years in advance. He agreed that the absence of a defined forest policy was unsatisfactory. An agronomic survey designating forest and agricultural land was a necessary first step.

Mr. Crammond mentioned that there were now very few foresters on private estates and that without foresters, efficient management was impossible.

Capt. Trant, speaking as a private owner, said that the average owner was untrained in forestry and our Society, which was insufficiently known, could do much to help them gain a knowledge of woodland management.

Mr. Bogue had the advantage of seeing the problem from all angles having been both a State and a private forester and also a timber merchant. Enumerating some of the reasons for the present unsatisfactory position, he mentioned the loss of many young owners in the first world war; the competing interests of land steward, gamekeeper and forester in which the latter usually fared worst; the division of estates by the Land Commission with the result that the demense left to the landlord was uneconomic and the timber had to be cleared to cover expenses and death duties.