

The New Zealand Institute of Foresters.

A recent communication from the Hon. Secretary of the Institute of Foresters states that the Institute is now formally incorporated under the Incorporated Societies Act, thus definitely finalising the establishment of an organized body for the furtherance of the profession of forestry in New Zealand.

The second annual general meeting of the Institute was held at Wellington on Wednesday, 29th May, 1929, and was devoted mainly to consideration of suggested amendments to the Constitution. A number of these were machinery and formal changes of minor nature made necessary in order to fulfil the requirements of the Incorporated Societies Act, and were adopted with little discussion. The scope of Associate Membership was somewhat broadened, while the suggestion of postal voting by absent members was decided against. New provisions adopted were those providing for the organization of local sections of the Institute, and for the publication of transactions. A suggestion to provide for Fellows of the Institute was withdrawn, while a proposal for a biennial overlapping term for members of Council was held over for further consideration.

The election of members of Council for the ensuing year resulted as follows:—North Island members, Messrs. H. A. Goudie and C. M. Smith; South Island members, Messrs. C. E. Foweraker and F. E. Hutchinson. Professor Kirk and Dr. L. Cockayne were unanimously elected Honorary Members of the Institute.

Mr. Arnold Hansson, President of the Institute, then read his presidential address, a paper entitled "Our Work," which appears in full in this issue of "Te Kura Ngahere." The meeting then concluded with a vote of thanks to the Honorary Secretary for his indefatigable labour in an arduous position.

OUR WORK.

[A paper read before the second annual general meeting of the N.Z. Institute of Foresters, Wellington, 29th May, 1929, by Arnold Hansson, Esq., M.F., President of the Institute.]

Our work, the science of forestry, can be said to be from a general point of view, ob-

scure. This to a great extent is due to the fact that the work and the results are available only in places which are not frequented by the average person. This position is, of course, not a desirable one, as we can only expect public support—that is, professionally speaking—to the extent which the public finds that we deserve. It does not matter whether this public opinion is right or wrong, our support from that source depends solely on the construance which people put on our efforts. It is not a case of what our own opinions are about ourselves, but what other people think of us and our work.

The public support of our profession can only be built up by ourselves, by clearly demonstrating the fact that the work of our profession is both valuable in pounds, shillings, and pence, and also valuable from a national economic point of view.

It is sound logic that no work can progress without the guiding hand having a detailed knowledge of the work. This applies to any walk of life, to shoemaking as well as to medicine or construction work. But detailed knowledge can only be obtained by practice—either by experience, when the facts are rammed down one's throat by the hard knocks of life—or by research, when we forestall the knocks by finding the cause, and by knowing this are able to sidestep the knocks.

The idea that research must necessarily be of a highly complicated nature and expressed in symbols and formulae which only the initiated can fathom, is unfortunately held by men who should know better, and a greater support would surely be forthcoming if the proper nature of research work was more broadly understood. We might even go so far as to say that research is only common-sense intelligently applied to the finding of the cause of the effect.

No progress can be made in any work without continual research. Experience will only carry the work as far as someone else has already carried it elsewhere. If the experience has been founded on sound lines then it is valuable, but experience founded on unsound lines may be disastrous to an undertaking.

The trouble is that very often we are mentally lazy, and prefer to think with our memory—that is, we would rather remember how someone else did a certain thing, than reason out a better way for our own specific problems—and at times we do not appreciate original efforts because we cannot be bothered going into the matter thoroughly enough to see that actual progress has been made. A case in point of this is that of the great mathematician Abel, who was failed in mathematics because his teacher did not have the knowledge that his pupil had and was thinking with his memory alone.

The field where we as technical men can make the surest mark and lead the way in the advance of forestry, is in research work. By research work I do not mean that we should sit over a microscope all day long and perhaps discover the anatomical difference between related fungi, or do some other similar work which to the average person makes up research work. Research is more often entirely practical in all its aspects, as, for instance, research into mill conversion of logs, where the work consists of critical observation applied to a commercial manufacturing process, and where the results obtained are of direct practical use in assessment and mensuration work.

In carrying on with the work we will, however, find that it is not possible to solve all our problems unaided, and that we must seek the aid of the pure scientists and co-ordinate our efforts. By a pure scientist I mean a person who is for his or her entire time occupied in some branch of science, and not as the forester combining investigations with practical applications on a commercial scale.

The branch of science which to the greatest extent affects our work is ecology—in fact, at times it may seem to us as if forestry is nothing but applied ecology. This specially applies to silviculture, which is to the more advanced forester purely a question of ecology, where we try to emulate optimum conditions so as to produce that volume of wood and that stand of trees which the area ought to yield.

While silviculture can be studied from the works of prominent foresters, the local problems of any country must be solved by its own foresters and according to the conditions prevailing in the particular localities. That is, we must accept the available information with an open mind and then build up our own system and technique.

It is probable that we have the widest field for research and original work in silviculture. At present we know very little about the silvicultural problems of our native forests, and most probably no work, or very little work, on this line will be carried out until public opinion is strongly in favour of it and the average man understands more about it.

It is only by a wider forestry education that the forestry movement in New Zealand will bear fruit, and it is perhaps along this line of general education that the Institute or its members can do the most for forestry. If we all, individually

and collectively, show our friends and acquaintances what we are doing, and by the standard of the work gain their confidence and trust, then the movement will ultimately snowball into a general understanding of the work throughout the country. With a greater understanding and appreciation of the forestry profession and its work, New Zealand should be one of the wonderlands of the world as regards forestry. Nowhere have the foresters better natural conditions to work under, and in very few places in the world can a forester live to see the results of his work such as is the case here in New Zealand.

Let us, therefore, work in such a manner that when we are looking back on our life's work, we will be able to look with pride, and not with regret that the work has been thin air and promises.

The Institute is yet young and we may also say that its members are young. We have to set our mark and build up the Institute by our own efforts.

If we each, individually, set a high personal standard not for the other fellow, but for ourselves, then we may meet here again some day when our whiskers are grey and the day is fading, and say, "We have done it, and it is well."

Comment on "Hypothesis in regard to the Westland Rimu Bush."

The 1928 issue of *Te Kura Ngahere* contained an article named above by Mr. F. E. Hutchinson in which it was stated that the rimu forests of Westland exhibit a marked tendency to develop in even aged stands, the theory being put forward that these stands took their origin following on "blow-downs" or severe windstorms more or less completely levelling areas of considerable extent, exposing the mineral soil to light, air, and warmth, and removing more or less completely the broad-leaved second tier of vegetation.

In regard to the above theory, Mr. H. Roche, of the State Forest Service, now at Hanmer Springs, submits the following comment:—

"Regarding the occurrence of "blow-downs" in the native forests of Westland, I encountered a case when surveying on the Ikamatua Plains in 1922 where an area of approximately two hundred acres of virgin forest, mostly red beech, had been quite recently overthrown, seemingly all at the one time. All the trees had been felled in the same direction—heads pointing to the north-east, and the view from the south-west side, approaching the edge of the "blow-down," was one of an impenetrable rampart of upturned and interlocking root systems. Over the whole of the area involved, destruction was very thorough. Kamahi and other shorter trees had all been involved in the fall of the larger trees, and except for the root systems, everything was lying pretty

flat. The uprooting had caused a fairly complete upheaval of the soil, and much boulder clay and other mineral soil was exposed, the overlying blanket of duff being well torn up, disintegrated, and mixed with mineral soil. If Mr. Hutchinson's conception of the silvical requirements of rimu is correct, the conditions obtaining on the area after the "blow-downs" should be more or less favourable for regeneration. In this case the original stand was mainly beech, and the area was subsequently promptly burnt for grazing. That in the rimu areas regeneration may follow, however, is supported by the following instance: In 1922, while engaged in the cruising of a tract of timber in the Bell Hill district, we encountered on one portion of the block a small terrace plateau about 90 feet higher than the surrounding level, and about 60 acres in extent. The timber over the surrounding flat was chiefly rimu and ran from 24 in. to 36 in. in D.B.H. On this elevated plateau, however, the timber was small, dense, and uniform, being pure rimu, heavily stocked, and ranging up to 18 in. D.B.H. only. The ground was fairly level as a whole, but was marked with a series of pits or depressions associated with small mounds, the mounds being always adjacent to the pits and on the eastern side. The mounds and depressions were overgrown and to some extent obscured by duff, shrub growth, etc., but were so characteristic that they attracted attention, and led to speculation as to their cause. The most likely theory is that they are the remains of a previous forest overthrown by wind, the pits being the old root cavities, and the mounds the heap of mineral soil left by the root systems as they decayed and consolidated. This was practically proved by the discovery of a few rata trunks still in place, though buried under a thick layer of duff, and not yet completely decayed. These buried trunks originated from the mounds, the heads pointing in an easterly direction. Only a few of these were found. Presumably the other trees were of less durable species, and the trunks had completely decayed. It seems, therefore, that here might be an actual case along the lines set out by Mr. Hutchinson—namely, that on the overthrow of the previous stand in a severe windstorm, the area was occupied by rimu regeneration which came up more or less together to form the even stand of young timber described."

In reply to this comment, Mr. Hutchinson has submitted the following:—

"The cases cited by Mr. Roche are of interest, and seem to give strong support to the theory that the present virgin stands are frequently evenaged in form, and arise following "blow-downs" when the overturning of the soil and the letting in of light and warmth seem to supply the conditions necessary for germination. Mr. Roche is, I know, a very careful observer, and his account of the condition of the ground surface on the plateau near Bell Hill would seem to establish beyond doubt that the previous stand had been overthrown by wind, and had been succeeded, as he states, by a pure

evenaged stand of rimu, extending more or less uniformly, I gather, over an area of 60 acres.

"It may be stated that the strongest evidence so far gathered of the response of rimu to light, air, and exposure of mineral soil is that of the burnt area behind the State Forest Experimental Station at Rimu. On this area, which was logged in August and burnt in December of 1927, there was in January, 1929, a stocking of six to ten thousand rimu seedlings per acre over hotly burnt flats where the duff had been destroyed and the true soil exposed. The complete record of this area is now being prepared for publication, but the result obtained establishes pretty definitely that much seed may fall, and lie dormant under the mature stand, and then, given the required conditions, will germinate in great profusion."

Correction—Perry's Bush Sample Plot Data.

In the 1927 number of "Te Kura Ngahere" appeared the results of a remeasurement by a student party of a sample plot in young rimu ("Te Kura Ngahere," Vol. II, No. 2, Dec., 1927, p. 16). The data presented included a full tabulation of the measurements taken on the individual trees, a summary table for the plot, and a presentation of the data on a per acre basis. The area of the plot was accepted by the student party doing the measuring as 0.2 acres, this being not verified by the party.

As no other data was at hand with which to compare the results, no criticism could be made. Further increment data was secured on the Westland Forest Experimental Station in 1928, however, and in the 1928 issue of "Te Kura Ngahere," Mr. Hutchinson, in an article entitled "A Hypothesis in Regard to the Westland Rimu Bush" (Vol. II, No. 3, Oct., 1928), questioned the accuracy of the per acre presentation of the Perry's Bush data, in the light of comparison of the stocking with other plots.

A survey was therefore made in January, 1929, by Messrs. Hutchinson and Kennedy, which revealed that the area occupied, given as 0.2 acres, was in reality 0.12 acres. While the plot figures are in no way questioned, and are thoroughly authentic within the limits of the methods used, the per acre figures must be increased considerably. The corrected figures for Table III, Statistics of Growth per Acre, are therefore as follows:—

Table III.—Statistics of Growth Per Acre.

(a) All Podocarp Species.

No. of trees per acre—1921	...	425
1927	...	425
		cub. ft.
Volume per acre—1921	...	4,870.1
1927	...	5,806.1
Increment during 6½ years	...	936.0
Periodic annual increment	...	144.0
Periodic annual growth % (by Pressler's Formula)	...	2.69%

(b) Rimu only.