

# TE KURA NGAHERE

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## EDITORIAL

### DR. CHILTON'S RETIREMENT

The Forestry Club bids farewell to the Rector and Professor of Biology of Canterbury College, Dr. Charles Chilton, who retired at the close of this session. Dr. Chilton's numerous activities and achievements, academic and social are being set forth at considerable length in other journals so they will not be referred to here. But the opportunity now presents itself of paying a tribute to one who may be considered as the founder of the Canterbury College School of Forestry, and the initiator of the first university teaching of forestry in New Zealand.

Dr. Chilton has for many years taken an active interest in arboriculture as a member

of the Christchurch Domains' Board, as Honorary Secretary of the Riccarton Bush Trustees, and as a member of the Christchurch Beautifying Association. He has also been editor of "The City Beautiful" since its inception and in its pages are to be found many articles demonstrating his love of trees and their value to the city.

On May 24th, 1920, Dr. Chilton submitted to the Board of Governors of Canterbury College a scheme for the establishment of a School of Forestry and on his own recommendation the Board applied to the Government for funds for this purpose. Lectures in forestry were initiated but the School did not receive official recognition by the University until 1924. The School was "homeless" until 1927 when the new rooms in the East Block were allotted to it. Prior to this the instruction in forestry had been given in the Biology Department whose laboratories, lecture room and museum were generously made available to the School by Dr. Chilton. To his foresight, too, Canterbury College and the School of Forestry owe the Mountain Biological Station at Cass and the cottage at Arthur's Pass—two well-situated stations to use as centres for the study of the New Zealand mountain beech, the best example in New Zealand of natural protection forest. Dr. Chilton has been associated with the Riccarton Bush Trustees since the Bush was made a Public Park, and his work has done much to add to the value and use of this unique area of podocarp forest situated close to the centre of the city.

The Club feels a sense of loss in the departure of Dr. Chilton from Canterbury College and while gratefully thanking him for his unstinted help in the past it wishes him a prosperous future in which to enjoy the rest from his arduous administrative duties and in which to finalise the zoological researches to which he has so long devoted himself.—C.E.F.

### OUR NEW FINANCIAL POLICY

As most readers of this issue of Te Kura Ngahere are already aware, our journal has now been placed upon a subscription basis, with a view to putting its publication upon a sure financial foundation. For the first two issues of Te Kura Ngahere the Forestry Club

is deeply indebted to the Canterbury College authorities for meeting all the costs of publication, and while the Club will continue, it is hoped, to gratefully accept a certain amount of financial assistance from this quarter, the ambitions of the Club in regard to Te Kura Ngahere have now gone beyond the modest booklet which is all that would be possible under the old conditions. It is hoped to produce such a journal as may prove to be of real interest and value not only to students and ex-students of the School of Forestry but to every forester and person interested in forestry in New Zealand. We have as yet in this country nothing corresponding to the American "Journal of Forestry," existing solely for the interchange of thought between professional foresters, and it is hoped that until such time comes Te Kura Ngahere may act in some such capacity, at the same time providing material of interest, not only to the forest technician, but also to the forest lover in all walks of life.

To fulfil this purpose it is necessary that a fairly large volume of varied material be presented in each issue. For the proper presentation of technical articles it is essential that some provision be made for a few photos or line drawings. All these matters make the cost of production rather a costly matter. The Forestry Club has levied its own members for this purpose as heavily as seemed fair, and has now appealed to all who find this journal of interest to support it to the amount of 2/6 per annum.

The response to the appeal sent out some time ago has been very heartening and encourages us to believe that the material presented in our last issue contained matter of wide general interest.

A few subscriptions were received from quite unexpected quarters, while a number of subscribers have paid for as much four years in advance. With such support we feel justified in laying our plans for a steady increase in the size of our journal, trusting that as the value and extent of its contents are enlarged it will find a wider response from those New Zealanders interested in forestry matters. We would therefore ask all our subscribers to bring the journal before the notice of all whom they think would be interested in its contents.

Copies of the journal will in future be mailed only to paid-up subscribers, so that the attention of all readers is directed to the subscription form which now appears on the last sheet of each issue. By filling this in and posting it with remittance at once, it ensures that the matter is not overlooked, while it gives the editorial committee an early indication of the circulation to be catered for.

To carry out fully the aims of the journal, the editorial committee also desire to state that it will consider for publication in Te Kura Ngahere, any manuscripts on technical or popular forestry matters which readers may care to submit, but especially the committee asks for comment, more particularly of a technical nature, upon the various articles which appear in Te Kura Ngahere. It is believed that the most valuable function of a journal devoted to an applied science is its use as a medium for interchange of thought in the matter of comment, either confirmatory or otherwise, upon the work of one investigator by his fellow-seekers after knowledge, and it is hoped that the readers of Te Kura Ngahere will support us by making available the results of their own observation and experience in various matters which may be under discussion. —F.E.H.

### THE GROWTH RATE OF THE NATIVE BUSH

In the last issue of Te Kura Ngahere there appeared an article by the present editor dealing with the value of growth rings of the native trees from the point of view of forest mensuration. In this article it was set forth in conclusion that what was most needed in solving the problem of growth in our native forests was a widespread series of permanently marked sample plots or cruise lines covering all sites and forest types from which periodic remeasurements would furnish data which, in perhaps ten years or so would enable the formulation of yield tables for the native forest types.

In this issue of Te Kura Ngahere appears an article setting out the results of a remeasurement in September, 1927, by the students of the School of Forestry of a sample plot established in January, 1921, by the State Forest Service in a stand of sapling rimu near Hokitika.

The figures there set out are, so far as the writer knows, the first authentic and scientific measurement of actual growth **per acre per year** yet made in New Zealand, a fact which forcibly illustrates how very recent is the practice of true forestry in this country. Many figures have been printed dealing with the measurement by botanists, horticulturalists, and others, of specimen native trees in gardens, parks, etc., and upon these figures many opinions have been expressed, mainly by persons only most superficially acquainted with scientific forestry, as to the possibility of managing the native bush. But all these measurements referred to neglect the fundamental principle of forestry, which treats of the forest as a community,

not as a collection of individuals. The unit of forest management is the acre, not the tree, and measurements of individual trees, which take no account of silvical factors as encountered in the forest stand, are of little value in forest regulation. The results of Perry's Bush measurements give us at once something definite to work upon in regard to our conception of the forest as a living unit; and as such are an immediate and valuable contribution to our knowledge of the growth and development of a rimu stand.

The figures themselves are of considerable interest. It is true that they are an isolated case, treating of only one stand, in only one stage of development, and too much reliance must not be placed on isolated cases until further confirmation of the facts revealed can be obtained, but it is believed that the case is a typical one. The measurements show that in six years the volume of the stand increased over its original volume by nearly one fifth, growth being at the rate of 83 cubic feet per acre per year, with some very good cases of individual diameter increment being recorded. Furthermore it was revealed that the stand was stagnating for lack of thinning, so that the possibilities of stimulated growth much in excess of that actually recorded would seem worthy of investigation. The results obtained are good. Compared with other species of similar commercial value grown in other countries under financially successful forest management, it seems that the rimu, far from being relegated to oblivion as being of too slow growth to even consider for a moment, is quite worthy of further investigation, and may quite feasibly be quite able to stand in its own feet in this regard on certain of the forest soils found in New Zealand, and particularly in Westland. The figures so far obtained are by no means sufficient to cause any great optimism in themselves. The stand at present is quite unmerchantable. If its present increment be not continued until merchantability be reached then it avails nothing. But we can at least say that during a certain limited period in its youth the rimu forest under given soil and climatic conditions, will develop at a rate quite worthy of further study.

The really important thing about these measurements is not the actual figures from this individual case but the method by which they were derived, namely, the periodic re-measurement of sample plots or cruise strips. The State Forest Service has already made a most commendable start at this project, and as the writer is well aware, progress in such matters is arduous, but he may be forgiven for wishing that even more was being done on this project than is now the case, for to his mind it is most urgent, not so much in

regard to the actual formulation of working plans, with a set rotation, details of normal growing stock and so on, (that may well wait for another twenty years for final elaboration) but in regard to the increment now being obtained in stands now merchantable. There are many areas in Westland now in process of exploitation where the timber is of notably small size, with consequent heavy logging cost, high bush wastage, low out-turn in conversion due to greater loss in slabbing, and low sale value due to the low proportion of clean grade timber produced. If it could be shown that increment on these areas were of appreciable extent, it might well pay to hold such areas from milling at the present time, to provide future supplies, and during the interim to appreciate considerably in value. Milling in the intervening period might then be concentrated on those areas where growth is practically stagnant or offset by decay. A cutting plan for the whole of Westland, say, based on this principle might be the means of securing considerably greater economy in timber use, together with increased revenues to the State through the increased value of the standing timber at the time of cutting. The basis of such a plan would of necessity be the data derived over a period of five or ten years; from a widespread system of plots or cruise lines such as has been advocated.

It is readily admitted that in preparing a cutting plan such as is suggested in the previous paragraph the factor of accessibility must receive full consideration or much of the value of the scheme would be lost through higher log transport costs. That however, is another aspect of the question than that which is brought forward in this article. —F.E.H.

### THE PROPOSED INSTITUTE OF FORESTERS

The proposal, now four years old, that a society or institute be formed in this country among forest technicians, similar in aims and scope to the Society of American Foresters of the United States, for instance, or to the Canadian Society of Forest Engineers, is at last taking tangible form, and probably by the time of the next issue of this journal the institute or society will be an actual fact, thus marking another step forward in the progress of technical forestry in New Zealand, for the need for some such organisation was beginning to be felt.

The credit for first initiating the movement toward the formation of such an institute belongs to the three Edinburgh graduates who were the first technical foresters to return to New Zealand after the appointment of the Director and the Chief Inspector of the State

Forest Service, and of these three, Mr. F. W. Foster deserves special mention for his early activity and unflagging interest in this matter. But in those days the trained foresters were few in number, and being all in fairly close contact with each other, did not greatly feel the need of closer bonds, so that while all approved the idea, little was done, and the matter remained in abeyance. The ensuing three years, however, saw a great broadening of forestry work in the Dominion, with the expansion of Government and private activity in afforestation. The next move toward some bond of union between men engaged in forestry executive positions came not so much from the trained forest technicians as from those, who, while not possessed of a University degree in forestry, had by reason of long practical experience in the building up of the exotic plantations of New Zealand during the past twenty years, proved their right to be heard in regard to forestry matters. With this impetus the movement sprang suddenly to life again, and was generally endorsed and supported by all persons engaged in forestry work in this country. After a few preliminary meetings, a list of charter members was agreed upon, these members to take upon themselves the work of actual formation of the new society. A committee has been elected from among these charter members, and is now busy with the task of formulating a constitution and set of by-laws.

Until the findings of the committee have been reported back to the charter members, comment upon its deliberations is distinctly out of place. There are, however, a few points worthy of mention in regard to the movement as a whole. At the first meeting of the charter members, held in Wellington some months ago, distinct progress was made in reaching a basis of mutual understanding, and the commonsense spirit of fair-play, and willingness to go even beyond the halfway point in meeting the other man's viewpoint, displayed at that and subsequent meetings, augur well for the future success of the institute.

The question of the aims and purposes of the Society has been settled in a manner which must be most satisfactory to all concerned. The ethical basis of service rendered was recognised as being fundamental if the institute was to have any real life and value in the profession. It was finally decided by the charter members that it was difficult to improve upon the wording used in stating the objects of the Canadian Society of Forest Engineers, and with minor alterations, these were adopted as the guiding purposes of the proposed institute. They read:—"The objects shall be:

"To advance the members in the theory

and practice of forestry by the discussion of technical and professional topics.

"To promote a better mutual acquaintance among Canadian foresters, and to cultivate an esprit de corps among the members of the profession.

"To take such steps as may from time to time appear advisable for the purpose of promoting in Canada the interests of the forestry profession as a whole."

Guided by these motives, the first problem of magnitude, that of membership, was successfully disposed of. This was a matter which had caused considerable trepidation, and concern was expressed that the idea would fail, due to conflict between the trained technicians, jealously guarding their scientific status within the charmed circle of University degrees; and the practical men, who, working alone and unaided, had by dint of constant experiment, trial, error and retrial, persisted indomitably in actually doing the forestry work of this country during the past twenty-five years. It was immediately made obvious, however, that such fears were groundless. The technician on one hand admitted at once that while the basis of all forestry as an applied science lies upon the study and application of natural and physical law, the practical man has through his intimate contact with his work over a long time developed a vast store of valuable knowledge of technique and application, and is thoroughly entitled to be listened to with respect; while on the other hand the practical man ungrudgingly stated that while the basis of all accomplishment in forestry was in getting things done, yet the scientific method of approach to forestry problems is the basis of all increased understanding of the laws governing forest growth, and the technician also is thoroughly entitled to be listened to with respect.

This recognition of unanimity of purpose is the greatest accomplishment made so far. It does not mean that bars of entrance are to be let down—far from it—a high standard of accomplishment and a sincere and earnest attitude towards one's profession are the essential requirements for admission. It does mean, however, that the right of entry shall be purely by merit and individual accomplishment, and ensures that if a man who may be denied the opportunity of securing a scientific training in the usual way at a University, has still trained, schooled, and disciplined himself to approach his work in the attitude of diligent and unceasing search for and application of the laws of nature, he shall be given every opportunity to make his voice heard, to give to others the knowledge he has built up within himself, and to receive from others those things which they in turn have devised, tested and proved.

With such a basis the ultimate success of the institute seems assured. It remains now only to get the organisation functioning so that the aims and purposes set out may begin to be realised. A national organisation as is proposed will take care of the third object set out above, but for the best fulfilment of the first two objects, it seems imperative that provision be made for local sections in the various centres of forestry activity, where members may find stimulation in more frequent meetings, for the discussion of problems, research, and other matters of common interest. This matter has been already mentioned. It is hoped that it will take tangible form in the very near future, for the need of opportunity for better mutual acquaintance, and increased dissemination of knowledge is now becoming acute.

A journal or other organ of expression of thought is also necessary and some provision must be made shortly in regard to this matter. The publication of a separate technical periodical may prove a financial impossibility at the start, nevertheless the possibilities of such a journal should be thoroughly explored. Failing that, provision might be made for securing publication of forestry papers, etc., through the medium of some existing periodical devoted to scientific work.

The matters mentioned above could be considerably added to. They are all machinery matters, necessary to bring the institute to its fullest scope of usefulness and service to the profession and the community. The big thing is that the need for an institute has been recognised, initial difficulties overcome, and a definite start made toward formal organisation. It is to be hoped, however, that no time is unnecessarily lost in getting the institute down to practical work in the advancement of forestry science. Formal organisation means little without the undertaking of a definite programme of action directed toward the accomplishment of the adopted aims of the institute. No more will be got out of the institute in results of real value to the profession than is put into it in hard work and patient endeavour by its members. It need not be doubted that the members of the new organisation will give freely and of their best, not only to get the institute formally incorporated, which is merely the initial and easiest task, but to make it a vital and living thing of real value to the profession and the community as a whole. The will to do this—to co-operate on a mutual basis for mutual benefit is undoubtedly present among the foresters of New Zealand. We hope that no more time than is really necessary may be lost before we have available the machinery by which expression may be given to this desire.

F.E.H.

## THE SCHOOL OF FORESTRY

### THE NEW ASSOCIATESHIP

The Professorial Board of Canterbury College has agreed to an entirely new set of regulations for the Associateship of the Canterbury College School of Forestry. The new regulations were necessary owing partly to the new statute for the Degree in Forestry, and partly to the need for certain amendments. The full regulations for the Associateship are set forth in the new prospectus of the School issued this year. Briefly they are as follows:—Students intending to proceed to the Certificate of Associateship of the School of Forestry must have passed the Matriculation Examination and must either have passed in Chemistry or Physics and in Trigonometry as defined for the Forestry Preliminary Examination or follow a course in these subjects during their first academic year. The course is a three years' one, and the subjects for each year are the same as those required for the three professional examinations for the Degree, namely:—

#### First Year:—

1. Elements of Forestry.
2. Forest Mensuration.
3. Surveying and Drawing.
4. Botany.
5. Forest Geology.
6. Accountancy and Business Organisation.
7. Forest Chemistry, Part I. (Optional, except for students who intend to specialise in Forest Chemistry or Utilisation.)

#### Second Year:—

1. Wood Technology and Properties of Materials.
2. Dendrology.
3. Forest Zoology.
4. Forest Exploitation and Utilisation.
5. Forest Chemistry, Part II (Optional).
6. Forest Engineering (Optional).

Students must also satisfactorily attend a course of instruction in Silviculture Part I, and Forest Management Part I, as preparatory to the work in these subjects to be done during the following year.

#### Third Year:—

1. Silviculture.
2. Forest Management.
3. Forest Protection.
4. Forest Law, Policy, and Administration.
5. Economics, History and Development of Forestry.
6. Specialised Studies.