

EDITORIAL NOTES

Metrication and Forestry

"New Zealand is to adopt the metric system of weights and measures," the Minister of Industries and Commerce announced in February, 1969. Later, in 1970, he explained that conversion was to be substantially completed by 1976. But he recognized that there could be no single day for conversion, as with decimal currency; instead, there would be a lengthy transitional period beginning in the early 1970s with a gradually increasing momentum of coverage and intensity, so that only a few items, mainly expensive equipment and machinery, would remain unconverted by 1976. The first step in converting is to plan a logical and efficient programme as a guide for everyone concerned. Two years have now passed since the decision to convert was made, and it is pertinent, therefore, to review progress towards a metric system in forest industries.

As from the first issue of 1972, the *N.Z. Journal of Forestry* will require all appropriate references to measurements to be in metric units. Members of the Institute could well ask, therefore, if opportunities have been grasped to rationalize and standardize forest measurement practices; to rationalize, economize and standardize dimensions of sawn timber in the building and construction industry; and to prepare realistic programmes and timetables for the forest industries, co-ordinated with those of supplying or dependent industries, for adequate training of personnel. We may hope that the N.Z. timber industry does not copy its U.K. counterpart. For example, there the agreed lengths of sawn softwoods rise by 0.30 metre increments from 1.80 to 9.90 metres. This practice merely converts traditional imperial units to their nearest metric equivalents and appears to ignore the advantage of simple metric arithmetic and to show little consideration for present industrial requirements. For example, how much easier to deal in 2½ metre studs (= 8.2 ft) than in 2.44 metre studs (= 8 ft), or 5 metre logs (= 16.4 ft) than in 4.88 metre logs (= 16 ft). Even more extraordinary are the U.K. cross-sectional dimensions of sawn softwood. Traditional dimensions have a high inbuilt safety tolerance, and a few nicely rounded metric dimensions could surely be substituted for sizes (in millimetres) of 100 × 32, 115 × 32, 125 × 32, 100 × 38, 115 × 38, 125 × 38, 100 × 44, 115 × 44, 125 × 44 and the like. The metering devices on sawmilling and other woodworking equipment can surely be adapted to any unit within the range of the machine, and there seems no reason for the continuance of arbitrary traditional dimensions. Since 1 in. is only fractionally different from 25 millimetres, sawn timber could well be in 25 mm units, with 5 mm allowances deducted for planing.

These appear to be fundamental points to be considered along with the change, but one searches in vain for reports of top-level discussions on such issues among or within forest industries in New Zealand. They are certainly not issues to be solved within individual companies, nor are they issues to be withheld from the many people requiring immediate guidance on, and training in, metric units. One must assume that there is action towards, but it would be helpful if those most interested could be kept in touch with it, for this apparent lack of direction will have two main repercussions: it will unduly delay the formulation of a realistic programme of conversion, and of training people to think in, and use, metric dimensions whether they are growing the timber crops, selling, or merchandising; and outmoded principles and practices used in measuring timber will largely remain, and the notorious incompatibility between standards accepted by producers and users will be perpetuated.

Two committees are known to exist, one for the sawmilling industry and one for the Forest Service, and there are moves afoot to hold a joint meeting, but, at the time of writing, none has materialized. It is important that, not only should these two meet, but communications with other sectors of industry, such as the building and construction industry, should be firmly established. For example, studies are in progress at the School of Architecture in the University of Auckland into rationalizing modular dimensioning of structural timber. It would seem important to architects, builders, sawmillers, timber growers, etc., not to ignore such work so that economies and efficiency can be promoted all round. Such problems demand the immediate full-time attention of several individuals, as investment now in devising sound measuring procedures could save much time and money in the future. Perhaps the Forestry Development Council should play a more active role, rather than its present watching brief.

For more everyday needs it is important for everyone to start thinking metric. For example, a forester or ranger could convert his inventory data to metric units and take these out in the field when inspecting stands. A sawmiller could chalk on his bench some round metric dimensions and see how the widths and thicknesses of various boards measured up as he cut. Anyone who plays golf can start estimating distances of drives and putts in metres. The weight of vehicles with and without a load of logs could be chalked on the cabin door. This sort of exercise is important for everyone. It might also provide the necessary stimulus for a better set of measurements as well, as more and more people realize what could and what should not happen.

Protection Forestry Research

Since the establishment, fourteen years ago, of the Protection Forestry Branch of the Forest Research Institute, its activities have been mainly concentrated in the South Island.

Thus, of 27 scientists employed in this Branch in January, 1970, only three were working in the North Island. Serious though the South Island problems undoubtedly are, a policy which fails to recognize the North Island situation needs to be questioned. It is not surprising, therefore, to read that one of the formal recommendations of the Forestry Development Conference was that "critical erosion problems in North Island hill country . . . merit more attention". That catchment authorities already spend two-thirds of the national soil and water conservation vote in the North Island is manifestation enough of catchment values. There has been a tendency, however, to argue that what can be learnt in the south can readily be applied in the north. An alternative view is that it would be wiser and cheaper, and would lead to earlier practical results, to learn how to master erosion on the easier North Island sites as a logical prelude to working on the most severe areas.

There has been a tendency for the Protection Forestry Branch to advance readily — perhaps prematurely — into rather specific lines of enquiry, some of which have only tenuous links with the more urgent requirements of management. Faced with a daunting lack of knowledge this is perhaps understandable, but field trials of species, studies of site amelioration and revegetation techniques, classification of erosion surfaces — these are relatively neglected fields which should have had priority from the start. Applied research is needed in respect of the extensive tracts of foothill country which clearly must be managed with conservation in mind. Throughout the country, but especially in the foothill zone, the question of water yield and quality is assuming accelerating importance. Nor can problems associated with recreation, especially hunting, be overlooked. What all this amounts to — research needs to be aimed at determining ways in which country can be used for the greatest public good, without detriment to essential protective functions. Without doubt fundamental research is needed, but should not the greater effort at present be devoted to more immediate needs?

Another function of the Protection Forestry Branch has been to conduct headwater catchment surveys — an activity of considerable fundamental importance and one in which a great deal of public money has been invested. Nevertheless, of 20 such surveys and re-surveys mentioned in Annual Reports of the Director of Research, only one has been published. These reports, dealing with the condition and trend of important river catchments, are of considerable moment for many public bodies, Government departments, occupiers of land, and indeed for the public at large. It is not good public relations to delay promulgation.

It is understood that the research programme for the next three years is now under consideration. Taken all in all, there seems to be a good case for paying some attention to the points raised here when protection forest research aims, priorities and direction are being examined.

Management for Conservation

Extending the length of our mountain ranges lie the forests, scrublands and grasslands of the high country watersheds. They comprise a complex of natural vegetation adapted to rugged terrain and a harsh alpine climate, modified, sometimes on a massive scale, by the impact of man and introduced animals. Almost entirely without roads, often lacking in access tracks, and rarely mapped in any great detail, the management of such lands is among the great challenges offering in forestry today.

It is apparent that high animal populations can greatly modify or even destroy plant associations, while in the space of a few hours fire can destroy the growth of centuries. It is also evident that following destruction, the process of recovery at these high altitudes is agonizingly slow; that a return to the original vegetation structure is unlikely; and that more than a few introduced plants can find a favourable niche in the changed conditions. It is likely, moreover, that during the prolonged period of recovery a peak snowfall or rainfall will occur, triggering off further slips on hillsides already badly scarred. These scars, and their recovery, constitute the greatest of all management problems in this difficult field. With the topsoil gone, the remaining surface is infertile and susceptible to further erosion, to a point where the process may become irreversible.

The demand for recreation in the mountain lands, especially in the North Island, is growing rapidly, and time may be all too short to translate our limited knowledge and experience into training, policy and practice. Access and accommodation, not neglected these many years by the Forest Service, are still the first consideration. At the same time the forester must learn to lead, supervise and educate the public in such matters as fire safety, good camping behaviour, and the rules of safe hunting. Access may be the key to management, but will bring its own crop of problems — unrestricted vehicular access to all wild lands is not in the best interests of recreation.

Conservation forestry is slowly emerging from obscurity, and the relevant authorities are at least aware of the needs and possibilities, even if most of the problems have not yet been solved. There are reports, from many sources, for example, that control of animals in critical catchments is being achieved — the latest in the 1970 Annual Report of the Director General of Forests. As with other avenues of human interest and endeavour, the prime need is for trained and dedicated staff, able to translate complex issues into the stuff of day-to-day management. The demands of the job are physically exacting. Effective management requires an eye for country and the ability to design roads and tracks and buildings compatible with the beauty of the landscape. There is a need to control animal populations at a level where they are not a threat but a valuable addition to the total environment. Those charged with management of these forests need

knowledge and skill to repair damage to forest and soil, and a considerable reserve of tact and goodwill with which to assist and guide those seeking to enjoy this tremendous national heritage.

The Big Sale

Despite the fact that it was a good deal smaller than the original sale to Tasman Pulp and Paper Co. Ltd. in 1951, the recent offering of 320 million cubic feet of wood from Kaingaroa Forest was attended with very much greater speculation, furore and, finally, condemnation. As the last big sale of State forest timber for many years to come, comment may not be out of place. That the decision, disposing of 220 million cubic feet to Carter Consolidated Ltd., and the remainder to Tasman Pulp and Paper Co. Ltd., was arrived at with considerable difficulty there can be no doubt, involving as it did at least five bids from powerful overseas interests, strong and sustained pressure from the established industries, the calling in of Finnish consultants, and protracted discussions at Cabinet level. It is worth noting the change from the quiet days of 1951; wood is now in strong demand the world over, and it can be expected that any future large offering of timber in this country will excite even greater international interest. And it can equally be expected that not everyone will be happy about the decisions made.

The recent sale has some features about which there can be legitimate disagreement, but lack of facts, especially about the economic reasons behind the decision, hampers informed public debate, and one is left with the feeling that more information could have been divulged to allay suspicions which may be groundless. For example, the financial editor of the *Auckland Star* raised some pertinent questions, particularly about the economics of scale and the highest possible return in terms of overseas exchange. It was estimated that the gross return from the proposed mill at Napier will be somewhere between 55 and 65 cents per cubic foot, whereas the major pulp and paper companies claim a gross return between 110 and 112 cents. On the other hand, the relationship of these figures to net overseas earnings may have been a more important consideration, and from reports in the press the stumpage being paid by Carter Consolidated Ltd. appears to be relatively attractive. Again, it appeared from the press that the National Roads Board was not consulted and was concerned about the unexpected and unbudgeted upgrading of the Napier-Taupo Highway. Indeed, what effect will this sale have on what one might term global economics? No doubt these matters have been examined exhaustively; in which case more candour on the subject is called for.

The sale appears to be at variance with the findings of the Forestry and National Development Conferences. NDC recommendation 12 stated that "it would be wise to plan . . . expansion . . . for pulp and paper in the 1970s by large scale integrated developments in the Rotorua-Bay of Plenty region".

Recommendation 25 was to the effect that new planting should first be concentrated to sustain efficient expansion of existing industries, and thereafter be increased elsewhere to allow the establishment of new industries, first in Nelson. The third priority would have to be fought out between Otago and Hawke's Bay. Presumably it was only a coincidence that the announcement of the successful tenders for the sale was followed by the release of the report of the Institute of Economic Research to the Minister of Industries and Commerce, entitled "Regional Development in New Zealand". The theme of this report is the need to examine closely any institutional moves towards influencing regional development. On page 226 it is stated that "New Zealand cannot afford to reduce its growth prospects by diluting its resources in the forcing of premature development in the slower growing regions. With only a small population and scarce resources, it is important that growth be encouraged where it produces the greatest immediate benefit". In fact, it might truly be said that what is good for the profitability of the big companies would also be good for the country. This is perhaps another case of advocating "to him that hath shall be given . . ." and one might be forgiven for wondering, not for the first time, whether economists take too limited a view; leaving them open to rebuff by sound horse-sense or wiser conclusions based on more catholic considerations. It could also have been considered that a diversification of ownership was desirable on the grounds that the major established industries might have too great a power, and thus might possibly tend to steer forest policy in ways which would be considered undesirable in the national interest; *divide et impera* has long been a sound political maxim. Whatever the truth of the matter, one must seek elsewhere for justification than in purely financial considerations.

In spite of the priorities for new industries sketched in by the NDC it is apparent that, implicitly, Hawke's Bay began to command the inside running in 1969. According to the Annual Reports of the Director-General of Forests, the total area planted in Nelson up to 1966 (excluding the Reefton District) was 40,885 acres, giving it a comfortable lead over Otago (33,829 ac) and Hawke's Bay (16,554 ac). Planting programmes for the three regions in that year were 3,792, 2,076 and 1,958 acres, respectively. By 1969 the planting programme for Hawke's Bay, at 5,454 ac, exceeded that for Nelson, and was some 1,200 ac ahead of that for Otago. In addition, Taupo Forest, which could legitimately be considered tributary to Hawke's Bay, was started in 1969 with 1,341 ac planted; this escalated to 4,000 ac in 1970. Hawke's Bay still remains well behind Nelson and Otago in total area planted, and it is pertinent to observe that, of all the major wood-using industries in New Zealand, Carter Consolidated Ltd. seems to have made no move to establish its own forests. Perhaps this will be rectified in future.

But even if this does not eventuate, contrary to many comments, it is apparent that an industry of the size contemplated, established in Hawke's Bay now with a life of 20

years on secured resources, has permanent viability if the tributary State forest areas, and the heightened tempo of current planting, are taken into consideration. Here again, the reasons for departure from recent decisions at the national level could have been made public. It seems obvious that the availability of such large surplus volumes nearby was one reason for establishing a wood-using industry in Hawke's Bay well ahead of the agreed programme.

Whatever the truth of the matter, time will tell whether the decision was a wise one. In the meantime, both Carter Consolidated Ltd. and the people of Hawke's Bay can consider themselves fortunate in the turn of events. It would be only proper to wish the new venture every success.

Logging Research

The 1970 Annual Report of the Forestry Development Council indicates that nearly 70% of the recommendations of the Forestry Development Conference have been wholly or partly implemented. Among those that have not so far led to action are Recommendations 46 and 47 in the Forestry Sector Report to the National Development Conference. These are:

- 46 That investigations and research into the mechanization of logging, group logging, long-term log storage, and thinning techniques in steep country should be initiated and/or intensified.
- 47 That the possibility of establishing a research unit or possibly a research association to carry out research in operational efficiency, mechanization, sawing, forest transport, and silvicultural operations be explored by Government and industry.

In *Forest Industries and Equipment Review*, Vol. 1, No. 8, of July, 1970, attention is drawn to the fact that logging practices in this country are in need of improvement, and also to the marked advances in logging methods and equipment in other countries, especially in Sweden. There, for example, the cut has been maintained and even increased, with a fall in labour requirements of 50%.

It may be that the recommendations are so broad in their scope that agreement between those involved will be difficult to achieve. There is no more logical connection between nursery mechanization and logging gear than between chocolate making and shipbuilding. Nor are the interests of the persons involved identical by any means. For example, the organization with the greatest interest in nursery and establishment mechanization is the State, although companies, private persons and local bodies are becoming more involved. It would therefore be reasonable for the State to foot the greater part of research into these activities at the present time. On the other hand, the State is not the major logging organization, and in this case it would be more equitable, perhaps, for the industry to bear the major part of the cost of logging research. In the field of sawmilling and utilization

generally, the State has a very small proportionate share in activities. It may thus be logical to break these recommendations down into manageable units, apportioning the effort so that those with most to gain in any one field contribute most.

There is, of course, some activity. The Forest Products Branch of the Forest Research Institute continues to make useful contributions to the understanding of wood and its multifarious uses. The Forest Service has for some time maintained an experimental logging unit in Nelson. Advances are being made in nursery mechanization, both at the Forest Research Institute and by the major forestry companies. Doubtless there have been many discussions about the implementation of the recommendations between the interested parties.

Without any doubt the greatest contribution to the economy of the whole industry would be in logging research. The research economists at FRI have cast a cold and calculating eye on production thinning, and have generally condemned it. Furthermore, in Sweden and several other countries the proportion of thinnings in the total production is falling sharply. On the other hand, the Minister of Forests has frequently expressed dissatisfaction at the amount of apparent waste in harvesting operations and no doubt, if maximum yield is required to sustain industry, and land is in short supply, methods of extracting thinnings at least cost can and will be devised, as occurs in some parts of Australia. Nevertheless, intrinsically thinnings are costly to handle, and will always remain so in comparison with larger logs from clearfellings. Possibly of more long-term importance is the fact that some of the country now being planted, for example in some of the State forests in Hawke's Bay, is extremely steep so that both logging and roading are bound to be difficult (and these are inseparable in any economic analysis. The report on the Forest Research Institute Symposium No. 11 draws attention to the fact that no less than 48% of the land contemplated for afforestation over the next 30 years is too steep for crawler tractors, and in this more difficult country the forest manager needs to know a good deal about logging so that he can plan his layout from the earliest stage to allow for rational placement of logging roads and stand boundaries. While results of overseas research can be studied and perhaps adapted to our conditions, in many cases the solutions found best overseas are not really applicable to radiata pine forests. The Swedish loggers are faced with rather small and uniform tree sizes which, in some ways, are fairly simple to deal with. Moreover, most of their forest country is of easy contour. In New Zealand we have to cope with broken country and a wide range of tree and log size.

A reduction of one cent per cubic foot in the cost of logging would mean an overall reduction of costs of the order of \$3 million annually, and it is quite possible that concentrated research could achieve this. The case for logging research is a strong one. It is to be hoped that agreement between interested parties can be reached in the near future, and that this will lead to early action.

The Crystal Gazers

Forestry, like many other fields of human endeavour, has long had its lunatic fringe and its share of expert crystal gazers. It has not been unknown, in this country, for suitably qualified persons to give a sketch of what forestry in such-and-such a locality will be in fifty years' time. One of the most enticing recent forays into this field is reproduced in this issue of the *Journal* — "The End of British Forestry", by the egregious and peripatetic Professor of Forestry and Wood Science of the University of Wales. It is perhaps natural that one who so often "goes walkabout" physically should indulge in free-ranging speculation. His scintillating attack on an assumed fuddy-duddyism in British forestry should blind us neither to the seriousness of his purpose nor to the dubious nature of some of his premises. There's no doubt the paper is seductive, not only on account of the lively writing, but also because of engaging attacks on several sacred cows — a popular exercise nowadays.

One tends to look at prophets (among whom one unfortunately has to number some economists, whose work oft-times has a spurious and dangerous exactitude) with a wary eye. They are so often proved wrong by events, and it therefore pays to scratch around, like a sensible rooster, to see what grains of wheat might be found amongst the chaff. In Dr Richardson's favour, let it be granted that there will be a massive demand for forest recreation. The figures quoted by him for unhappy Albion — indictable crime up by 70%, mental illness up by 30%, attempted suicide up by 50% — surely indicate that the more people can be induced to partake of the soothing influence of forests the better, and rather sooner than later. One wonders, however, whether amusement parks, strip-tease shows and the like, would be more edifying in the country than in an urban setting; or would help in recreating the psyche damaged almost beyond repair by noise, pollution, the multifarious pressures of advertising, and the ubiquitous communications media, and the wearying exhortations to produce more, to get on, to "succeed".

Be that as it may, Dr Richardson starts off on some dicey ground, some of it called in question by himself (although he apparently does not see his criticisms of others as applicable to his own thesis). His main argument starts from the basis of substitution of wood product: all well and good; plastics, fibreglass, metals are making inroads into traditional wood markets. But this has been happening for years, and must surely be acceptable in the capitalist market-place. History is littered with forgotten handicrafts and no doubt some old stone age curmudgeon bewailed the advent of bronze. But the real question is one of quantity. While wood may have lost many markets, the gargantuan size of the market it still retains, and which shows no sign of diminishing (rather the reverse), makes it hard to visualize non-renewable materials making more than a minor dent in demand, even though the more ultraconservative may deplore the passing of clogs,

yokes, haywains, jaunting cars, velocipedes and a host of other forgotten wooden articles.

His second point — the substitution of softwoods by hardwoods — is also perfectly valid and well documented. He casts some scorn on British Forestry Commission experts for not taking into account "technological and economic changes outside Britain" and then proceeds to do exactly the same! Perhaps more fundamentally dangerous, he implies that Britain will continue to enjoy a neo-colonial relationship not only with New Zealand but also with a host of un-named sub-tropical and tropical countries. This outlook is reinforced by his third point — that there will be low-cost production from outside Britain, and reduced freight rates for a long time into the future. Recent years have shown that low freight rates may be illusory; they have certainly escalated alarmingly for produce moving to and from New Zealand, and the advent of containers, so long heralded as the saviour of the transport business, now appears to be unlikely to make more than a minuscule reversal on the rising trend. His contention that supplies could come from forests "in subtropical parts of the world with abundant low-cost land and labour resources" seems to imply that countries such as those of east and south Africa will be in perpetual economic thrall to the moneyed interests of the "developed" countries. This could be very wide of the mark; for example, he ignores the very obvious jockeying for control of tropical forest resources in Indonesia and elsewhere by industrialized countries, and the clear political implications of this type of economic invasion. He even appears to hark back to the dreadful days of the 1920s and 1930s in Britain, when it was assumed that British agriculture could die because food could always be obtained cheaply from elsewhere, and the corollary that there is no national need to use idle land. But the most glaring error of the lot is to assume that peoples of the third world will continue to suffer a miserable standard of living. If there is one obvious sign of affluence at present, it is the colossal consumption of paper in the U.S.A. Where will Dr Richardson's 400 years supply of tropical hardwoods be if the third world (the great majority of mankind, incidentally) reaches a standard of living comparable to that in North America today? What if the Indians, Chinese, south-east Asians, Indonesians, South Americans and Africans want their daily bread wrapped, and each family demands a 200-page Sunday newspaper every week? Fellow crystal-gazers might aver that this is just as likely as any prophecy of Dr Richardson's.

While it is undeniable that adequate provision must be made in management plans for recreation in all forests to meet rapidly burgeoning urban invasions of the countryside, one may be forgiven for looking askance at other aspects of Dr Richardson's thesis. Time only will tell whether in fact they are half-baked or not. Nevertheless, one must applaud his courage in sticking his neck out, and hope that others will be spurred into making trenchant counter-attacks, or into fighting under his rampant banner.