

overseas. Such emergency action, however, in no way obstructs the operation of the twenty-year recruitment and training programme: the contrary is actually the case, as the advent of additional qualified staff increases the pool from which officers can be seconded to the Training Centre as instructors. There is much development work to be done before forestry education in New Zealand, both professional and vocational, can claim to have achieved the objectives sought, but solid foundations have undoubtedly been laid, and it is the duty of posterity to ensure that continuity—that corner-stone of sound forestry—is preserved.

3. *Research*.—With a few marked exceptions, research, in the true sense of gleaning fundamental knowledge, has been sporadic over most of the history of the Forest Service, owing solely to the inadequacy of technical staff. Understandingly, with most of the technical staff compelled to carry some executive responsibilities, the emphasis has tended to rest on forestry as an art and not as a science. The accession of a large number of technical officers in 1939 had been planned to correct the serious deficiency in research work, but the advent of the war and the infringement of timber control upon the normal activities of the Department prevented the attainment of this objective and resulted in less pure research than ever before. Only with the current reorganization of the Department and the assignment of all research—both pure and applied—to the Development Division, and its centralization at the Forest Experiment Station, Whakarewarewa State Forest, Rotorua, where it is associated with the Forest Service Training Centre, has it proved practicable to develop and initiate a programme of research commensurate with the importance of the national forest effort.

Having regard to the limited personnel available, the quality and quantity of research undertaken cannot be regarded as unsatisfactory. The basic defect has been the relatively poor grounding in both natural and pure sciences, including mathematics, possessed by most technical officers, and from this stems the departmental decision to favour higher forestry education of the post-graduate type. A very much deeper knowledge of the biological sciences, together with some improvement in higher mathematics and statistical analysis, is essential to the development of research workers in New Zealand forestry, and achievement of this objective appears to be in sight as a result of general agreement on the desirability of post-graduate education in forestry.

Some research both in forest botany, silviculture, &c., and in utilization has been carried out in co-operation with the staffs and students of the University of New Zealand. Special acknowledgment is due to the one-time Faculties of Forestry at Auckland and Canterbury, similarly to the Engineering Schools of the same colleges and also to the Faculty of Biology at the Victoria University College. Even with the centralization of research work at the Rotorua Forest Experiment Station, many opportunities will still exist for co-operative research projects at the various University colleges.

Over the early years of its development many sample plots of diverse character were established by the Forest Service, but owing to the loss of technical staff during the depression period of the early "thirties" most of these fell into disuse. Originally scheduled for overhaul after the appointment of additional technical officers in 1939–40, the plan was interrupted by the war, and only with the recent assignment of special technical staff to the Rotorua Forest Experiment Station had it been possible to reinstate research work on these plots, all of which are being examined with a view to determining their future status. Many, it is anticipated, must be abandoned. Virtually the only fundamental research projects carried on during the war were those of a long-term nature covering the reporting of seed crops, the growth cycles of both indigenous and exotic species, and the viability of seed.

In contrast with the comparative paucity of pure research, a very large volume of applied research has been undertaken, particularly in the field of forest utilization. What is even more important, the results have been incorporated into everyday wood-using technique and practices. The development of national grading rules for building