

Emigration of scientists is not in itself undesirable, but the ultimate effect of the continuous export of many of the potential leaders of scientific thought in New Zealand will be to leave too many "average" scientists in the country. This is only part of a complex problem involving also such matters as training, salary, and status.

Even were salaries and working conditions made as attractive here as overseas there would probably still be a continuing flow from New Zealand of scientists for whom there are suitable positions locally.

Already the increase in the numbers of students at the M.Sc. level, the reintroduction of the Ph.D., the establishment of some post-graduate scholarships, and the increasing University staff, are all factors contributing to the rapid increase of research in the University. The situation in regard to research is rapidly changing from the condition of former years where the need for the export of young scientists for further training was almost essential. The current development has already brought some departments in the University to a level where they offer opportunities and facilities for graduate training at least equal to many available overseas. We can be confident that this will increase and that to-day and in the future the opportunities for many of the best students to be adequately trained in this country will mean that these students will remain to train here. Much of the problem of "export" is open to solution in this manner.

There is another significant loss of scientific workers through their absorption in administrative or non-scientific work. Very few scientists take up non-scientific work, but many, particularly in the Public Service, proceed to administrative positions. The nature of a scientific training is such that it should foster the qualities of mind needed for administration and scientific officers should be able to proceed to administration. In fact, scientific work, unless controlled by an administrator with scientific qualifications, will suffer both in respect to quality of work and morale of personnel.

In the State scientific services promotion inevitably leads to pre-occupation with administration and the highest-paid positions are remote from the laboratory or the field. It is not in the best interest of research institutions that the line of promotion should be only in the administrative field and we consider that positions of equal eminence should be available in science or in administration.

In general we consider that there is room for lessening the burden of administration on scientists in the University and the Government, and recommend that scientists should not concern themselves other than with the administration of scientific work, and that the University colleges and the Government Departments improve the clerical services given to their scientific administrative staff.

These considerations are not of the same moment in industry, as the scientist who shows any ability outside his specialized field will usually be called on to undertake executive work.

XII. LINES OF ACTION URGENTLY REQUIRED IN ORDER THAT AN ADEQUATE SUPPLY OF SCIENTISTS ADEQUATELY TRAINED MAY BE SECURED AND MAINTAINED IN ALL SUBJECTS AND AT ALL LEVELS

While we think that by 1952 the present shortage of scientists will be overcome by the anticipated supply of science graduates from the University colleges, we do not think that, even then, the desired standard would be reached in all subjects and at all levels, and means of improving the position at as early a date as possible are listed below under the headings (i) recruitment, (ii) reduction of net losses, (iii) increase in the proportion of experienced scientists, (iv) more effective use of existing personnel, (v) improvements in training facilities, (vi) salaries, and (vii) constant review.