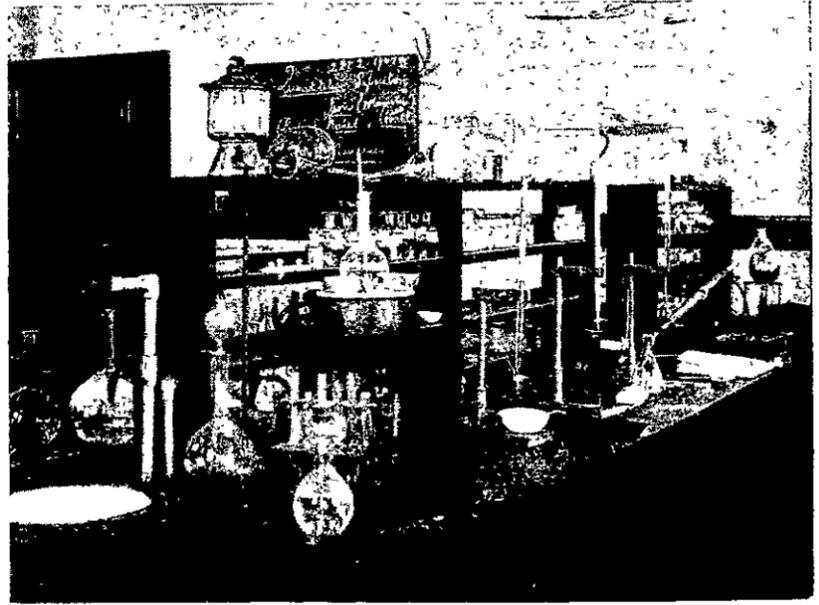




THE OLD LABORATORY IN VICTORIA ST. A STUDENT IS "DOING AN ANALYSIS AGAINST TIME." THIS LABORATORY HAS NOW BEEN HANDED OVER TO THE TECHNICAL DAY SCHOOL.



ANOTHER VIEW OF THE OLD LABORATORY: TAKEN DURING THE PERFORMANCE OF A WATER ANALYSIS.

the ideas of the members of the teaching staff thus providing at moderate cost a building exceptionally well adapted to the purposes for which it is intended.

The cost of the Science Buildings, above described, is £10,000. The Arts Building cost £25,000. As the criticism has been made that the expenditure on science is out of proportion to that upon other subjects, it may be worth while to devote a few paragraphs to this question.

1. Expenditure upon experimental science bears more directly upon the material prosperity of a community than any other form of expenditure. Chemistry, in particular, has a direct bearing upon every branch of commercial pursuit. Without experimental investigation no approximate estimate can be made of the resources of a country. It would probably surprise the uninitiated to know to what extent the modern manufacturer relies upon the experimental chemist to help him out of his difficulties, not merely analysing his raw materials and products of manufacture, but also by suggesting modifications of the manufacturing processes themselves. In this connection it is not without interest to record that the list of Victoria College chemical students has included dairy managers, engineers, analysts, manufacturing chemists, lawyers, patent agents, and a host of others.

2. Equipment for the teaching of experimental science is of necessity very expensive as compared with the needs of other branches of education. It is doubtful whether much permanent good is done by any science teaching which is confined to the lecture room. To think clearly in any practical problem is, as Nasmyth has pointed out, "to form a vivid mental picture of the experimental conditions." Such a state of mind is only possible to the student who has learnt to think through his fingers. How difficult this is to those unaccustomed to attack difficulties by the experimental

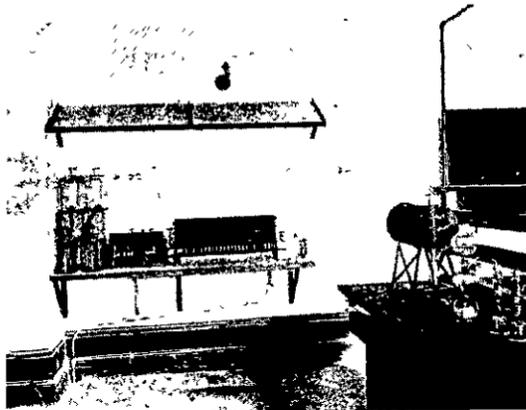
method, can only be realised by those who have attempted to teach practical chemistry or physics to adults who have been brought up on even the best text books, but without laboratory experience.

Whereas, then, the student of classics or mathematics requires to be provided with literature, and literature only, the student of science must be given apparatus and expensive materials, in

he seldom catches the true scientific spirit which rejoices in knowledge for its own sake.

3. The highest type of scientific education is that which is obtained from experimental research into unexplored regions. It is here that the lamp of enthusiasm burns most brightly. Drudgery no longer exists to the student who has caught the spirit of original enquiry; to him a problem is as attractive as a patch of alluvium to the miner suffering from severe gold fever. How deep the despair if the problem fails of solution, how rich the reward if success be attained!

It is a matter for congratulation that the Senate of the University of New Zealand requires a thesis embodying the results of some piece of original research from students competing for an honours degree in most of the experimental sciences. It is equally a matter of reproach that the science of physics is excluded from the research clause, so that whereas in botany, zoology, geology or chemistry the honours graduate produces evidence that he can attack a problem from the experimental standpoint, no such evidence is required from the graduate in physics. The argument which has been brought forward that certain university colleges are not sufficiently well equipped to provide for research is beside the point. If the institution cannot provide for research in a particular science, it has fallen below university standard in that subject, and should be accordingly disqualified by the university authorities.



A CORNER OF THE RESEARCH LABORATORY.

addition to literature of an even more expensive type than that required by the student of languages—I refer to the scientific periodicals. It is a common mistake that old scientific literature is useless, for in a modern investigation it is always desirable to turn up the works of the old masters and their experiences expressed in their own language. Unless a student accustoms himself to this habit

An order for 35,000 tons of coal for Manila has been received at Newcastle, N.S.W. Other large orders from the Philippines are expected.

An English syndicate reports that it has purchased a thousand acres of shale country near Latrobe, Tasmania.



THE CHEMICAL LECTURE THEATRE.—TO THE RIGHT OF THE BLACKBOARD IS A DRAUGHT CHAMBER, TO THE LEFT A SCREEN FOR DIAGRAMS. AT THE RIGHT HAND END OF THE LECTURE TABLE A DISTILLATION OF LIGHT OIL FROM COAL TAR IS BEING EFFECTED.



THE BALANCE ROOM.—THE PHOTOGRAPH SHOWS THREE ANALYTICAL AND TWO SIMPLER BALANCES ON TABLES OF WHITE ENAMELLED SLATE.