

qualification for the theoretical requirements of the profession. These latter students will probably qualify at a later stage for the associateship of one of the institutes of civil, mechanical, or electrical engineering.

As stated above, the recognized School of Engineering is in Christchurch, and one witness, the president of the New Zealand Society of Civil Engineers, estimates the cost of tuition at about £12,000 per annum, including interest on value of buildings and equipment. The University of Otago also prepares candidates for the degree of B.E. in mining by means of a course which it is claimed forms a good training for civil engineering. We were informed, as a matter of fact, that several of the graduates are occupying positions as civil engineers upon this qualification only. The cost of this school to the University of Otago, in spite of Government grants totalling over £1,000, involves a transfer from the Arts and General Account of over £1,900 per annum. Auckland University College has about 110 students under training in its engineering department for civil, mechanical, and electrical engineering and for architecture, but this training is not recognized by the Senate as a qualification for engineering degrees of the University of New Zealand, but only for architecture.

We were informed that many of the graduates of the Otago School, and to a less degree of the Canterbury School, have in the past, perforce, been compelled to seek employment outside the Dominion, so that in effect this country is supporting three institutions for the training of engineers, and the output is so large that it has not been able to absorb the product.

The whole situation would appear to have arisen from the failure of the Senate to control the situation adequately.

Other University
courses grouped
around engineering.

The difficulty of preventing colleges from establishing classes in engineering subjects is no doubt partly due to the fact that engineering is becoming a necessary part of the training for the professions of mining, architecture, and, to a limited extent, forestry and agriculture. There is no doubt that instruction in mining and architecture can, nowadays, be given most economically in conjunction with a School of Engineering, and a glance at the prescriptions of examination for the degrees in these two subjects amply bears out this contention. It is probable, however, that when the School of Mines was first established in Otago, nearly fifty years ago, the condition did not apply with so much force as it does to-day. On this point we quote the "History of Otago University" (G. E. Thompson), Ch. XXIII, The Mining School. "As the Director wrote in 1912, . . . every-day mining engineering is becoming more and more allied to civil engineering. The mining engineer is now required to construct roads, tramways, and railways, design and erect dams, bridges, and complicated metallurgical plant, and harness rivers for the generation of hydraulic and electrical power. In order to meet the demand for more specialized knowledge in structural engineering, it will be necessary to extend the scope of instruction, more especially in the departments of applied mechanics and practical electricity and surveying."

Mining School
should be worked
with Engineering
School.

On the general question of the duplication of costly facilities for education in engineering, and also in architecture, the evidence given by Professor Park, the Dean of the Mining School at Otago, is illuminating: "Candidates are also prepared in surveying and building-construction, strength of materials, graphic statics, hydrostatics, and hydraulics for the B.E. degree in Architecture, the Associateship of the Institution of Civil Engineers (England), the Diploma of Licensed Surveyor." And again: "At the present moment we have as many undergraduates taking the full course in mining and engineering as all the university mining schools in Australia taken together. Applied electricity is now, and rightly so, a compulsory subject for the associateship of the Otago School of Mines and B.E. degrees in mining and metallurgy. So far no provision has been made for teaching it. . . . At present we are dependent on the good will of the Dunedin City Council both for a teacher and for the use of the electric machines and apparatus." Later on he states, "I think it would be better to centre all the engineering in one place."

As there is, therefore, so much in common between the work of a modern school of mining and a school of engineering, it appears to be certain that, if the