

Accommodation.—The building being erected adjacent to the Dominion Laboratory will remedy the position with regard to accommodation, the absence of which has seriously hampered the work of the Association staff. In the meantime, use is being made of facilities provided by the Dominion Laboratory and of a concrete air-raid shelter. With the completion of the fitting-out of the new premises, the Research Association will be satisfactorily housed.

Conference of Ceramic Chemists.—In August, 1946, a conference of pottery-work's chemists and the Research Association staff was held in Wellington to discuss a programme of research. A decision was made to concentrate attention on a fundamental study of the main clays being used by the industry. This work has been pushed forward and is reaching the stage where reports on various aspects of the work can be supplied to the industry in the form of technical papers. It is hoped to make such a conference an annual event.

Differential Thermal Analysis.—During the year an apparatus for the differential thermal analysis of hydrous silicate minerals has been assembled and preliminary work carried out on the application of this method of research to New Zealand clays.

Since this apparatus has been in use, a number of clays have been examined qualitatively, and a complete mineralogical examination of eight important New Zealand pottery clays is under way. This will be supplemented by chemical, x-ray, and petrographical examinations, and the correlation of data from these with quantitative thermal analysis.

Free-quartz Determination.—Preliminary work on a differential thermal method for estimating free quartz in clays has been completed. The method, which is based on the small heat effect which accompanies the change low quartz $\rightleftharpoons$ high quartz at 575° c., is both rapid and accurate and promises to be a useful addition to our methods of research on clays.

Clay Beneficiation.—The possibility of improving the quality of certain of our natural white-burning clays by elutriation or other treatment was given consideration and an apparatus constructed in which the clay is separated electrophoretically from a clay dispersion. As a method of purifying clays it is not of great value, though it may have decided advantages in the dewatering of clay suspensions. During the course of this work an apparatus was constructed for the measurement of the particle-size distribution of clays by means of which the extent of clay beneficiation could be readily followed.

Base-exchange Properties of Clay.—The methods of determining the base-exchange characteristics of clays were investigated. The preparation of clay for this work necessitated the use of dialysed clay, for which a novel and convenient electro dialysis apparatus was constructed.

Radiator Bars.—The development of methods of testing the efficiency and durability of locally made electric-radiator bars was carried out.

Affiliation with Overseas Associations.—Affiliation with the British Refractories Research Association was finalized during the year, and inquiries made as to possible affiliation with the British Pottery Research Association. Contact with overseas research institutions of such high standing will be invaluable to our local association.

NEW ZEALAND WOOLLEN-MILLS' RESEARCH ASSOCIATION (INC.)

Director: Professor F. G. SOPER

During most of the year the Director was absent in Great Britain and North America, where he met leaders in various wool research organizations. These contacts have proved, and will continue to prove, very valuable, both in avoiding unnecessary duplication of work and in facilitating communications and inquiries. A textile research officer and textile research chemist have recently arrived from Great Britain to take up their duties.