quality. Hawkes Bay supplies were rather unsatisfactory. The milk in several Auckland districts has continued to be unsatisfactory. A rather unsatisfactory state of affairs at Timaru improved after intensive sampling had been carried out. There was a marked improvement in the quality of milk supplied throughout the Otago district, and particularly in Dunedin, where the activities of the Metropolitan Milk Board and the effect of the new treatment plant are evident.

ORGANIC CHEMISTRY

This work was largely concerned with chemical problems undertaken for the State Forest Service. Determinations were made of resinous extractives from over 400 samples of *Pinus radiata* wood taken systematically at intervals through the season. In order to obtain relatively large quantities of extractives the solvent extraction of various zones of wood from whole logs of *Pinus radiata* was carried out. A commencement has been made with the quantitative separation of these resins into essential oils, resin acids, fatty acids, phenols, esters, and unsaponifiable material.

Complete analyses by recognized methods were made of some of the *Pinus radiata* wood samples, and of rimu, red beech, and tawa woods.

The crystalline resin, podocarpic acid, from rimu and white pine, which has certain structural similarities to œstradiol and œstrone, was reduced to podocarpinol. Preliminary physiological tests carried out by the Wallaceville Animal Research Station of the Department of Agriculture suggest that podocarpinol may possess the properties of an œstrogenic hormone.

A yellow crystalline aglycone, which has been named corymbiferin, was prepared from a yellow glycoside extracted from the roots of *Gentiana corymbifera*.

Ngaione, the main constituent of the essential oil of the leaves of the ngaio (*Myoporum laetum*), was studied and its structure partly elucidated.

TOXICOLOGY

Poisons detected in post-mortem specimens included barbiturates (7 cases), carbon monoxide (4 cases), morphine, nicotine, strychnine, digitalis, arsenic, cyanide, sodium nitrite, acetylsalicylic acid, aconite and belladonna (in a liniment), and a mixture containing acetylsalicylic acid, phenacetin, and codeine. Many examinations were made for alcohol in blood and urine.

OIL, BITUMEN, AND TAR

This work consisted mainly of the analysis of aviation fuel, petrol, and lubricants, and analyses and experimental work on bitumens, tars, and other roadmaking materials. A variety of problems in related fields were also investigated.

PHYSICAL CHEMISTRY

The amount of spectrographic analysis of metals has decreased since the end of the war. A semi-quantitative method has been developed for the examination of solder and lead. Spectrography was also used for the examination of minerals and rocks for minor constituents and rare elements, and for an approximate determination of some of the major constituents. It was also applied to the examination of paint and related materials in motor-collision cases, and in a burglary case.

X-ray crystallographic methods were applied to the identification of the components of boiler scales.

Analyses were made of electroplating solutions, and plated articles were examined on behalf of plating firms and assistance given in plating problems.