Remarks on the Parcels treated.

The tailings from Waihi, which gave a poor extraction on pan treatment, had already been treated in pans before they were received at the school, and the second treatment, made at the request of the owner, showed that little could be extracted from the tailings by pan-amalgamation. A test on about 2 tons of the tailings by the cyanide process showed that 90 per cent. of the value could be extracted by this method.

The parcels of ore sent to the plant this last year have been on the whole unsuitable for cyanide treatment, owing to the condition of the gold particles. Several parcels were treated by cyanide at the request of the owners, but the results were generally not high. The majority of the new finds are thus shown to be unsuited to treatment by this process. Nevertheless, I consider that the cyanide process can be successfully combined with wet-crushing and amalgamation for the economical treatment of many of the ores of the peninsula, and mine-managers would do well to experiment in this direction with a view to obviating the dry-crushing methods.

Syllabus of Instruction.

The following is the syllabus of instruction followed during 1896–97 :—

General and Mining Geology.—(Lecturer, the Director, Mr. F. B. Allen, M.A.B.Sc.)

Physical Geology.—The earth as a planet, its form and motions; geological climate; the atmosphere; ocean; solid crust; the interior of the earth.

Dynamical Geology.—Metamorphism; agencies modifying the crust of the earth—atmospheric, aqueous, chemical; weathering; sedimentation; classification of deposits—mechanical, aqueous, organic, and chemical; denudation and erosion.

Structural Geology.—Stratification; jointage; contortion; faults; conformity; unconformity; dip and strike; cleavage; metamorphic rocks; intrusive sheets, bosses, dykes, fissures; formation of quartz veins, lodes, and metallic deposits; dynamics of lodes; recovery of lost lodes.

Geological Surveying.—The practice of running natural sections; noting dip, strike, and inclination of strata and lodes; mapping geological formations; collection of mineral and rock specimens.

Stratigraphical Geology.—Classification of plants and animals; fossils; blending of species; geological record; the study of characteristic life, and distribution of formations from archæan to recent times, with special reference to the geology of New Zealand.

Mineralogy and Blowpipe Determination.—(Lecturer and Instructor, the Director.)

Systematic Mineralogy.—(1.) Physical properties of minerals, their hardness, specific gravity, &c. (2.) Optical properties—refraction, reflection, polarisation, lustre, phosphorescence. (3.) Chemical properties. (4.) The application of the blowpipe, colour-tests, &c. (5.) Isomorphism, pseudomorphism, and allotropy. (6.) Distribution and paragenesis of minerals. (7.) Classification of minerals—chemical, economic.

Descriptive Mineralogy.—(1.) Non-metallic division—carbon group, &c. (2.) Metallic division—a description of the principal ores of the common metals, and their New Zealand localities and modes of occurrence.

Crystallography.—(1.) The six systems, their axes, typical forms, modified forms, &c. (2.) Holohedral and hemihedral forms. (3.) Reading of faces.

Mathematics.—(Lecturer and Instructor, Mr. P. G. Morgan, M.A.)

Arithmetic (including the simple rules).—Weights and measures (those bearing on mining and assaying), greatest common measure, least common multiple, vulgar fractions, decimal fractions, proportion, problems.

Algebra (Hall and Knight's Algebra).—The meaning and use of the various signs and symbols, the simple rules, greatest common measure, least common multiple, fractions, factors, symmetry, problems containing one unknown, simultaneous equations, quadratic equations, simultaneous equations with more than one unknown, problems involving quadratics and the use of several unknowns, practice in the use of formulæ and their transposition.

Euclid.—The first four books (Todhunter), including the definitions and axioms.

Land- and Mine-surveying.—(Lecturer and Instructor, the Director.)

Adjustments of theodolite, dial, level; chain and steel tapes; traversing with theodolite and dial; connecting survey with standard meridian; ranging lines; division of land; computation of areas by latitudes and departures; reduction of slope measurements; off-sets; chaining, computation of co-ordinates; balancing survey; plotting survey and off-sets; obstacles to alignment.

Mine-surveying.—Different methods of connecting underground with surface meridian; magnetic variation; to reduce magnetic meridian to true meridian; conducting underground traverse with theodolite and dial; correcting magnetic survey by method of back- and fore-sights; holing.

Mathematics.—Equations; logarithms; plane trigonometry; solution of triangles; calculation of last or connecting line; of distance from working-face to nearest point on boundary of lease.

Levelling.—Recording levels; practice with level and staff; grading roads, tramways, and water-races; plotting and striking grades; calculation of contents of earthworks by prismoidal formula; grading with Abney or reflecting level.

Mining, Applied Mechanics, and Hydraulics.—(Lecturer, the Director.)

Mining.—Shafts—selection of site, size; modes of excavation in dry and wet rock, wet sand and swamp; timbering of shafts; ladders; chambers—size, excavation, timbering; levels and