as exhaustive as time would permit, has been carried out for gold and other minerals over the whole area, and, of course, the examination of the stream débris is one of the leading indications in such operations. To this end two capable gold-prospectors have been attached to the field party, and it is hoped that the results obtained will, when recorded, afford a good working-basis for the guidance of future operations by private individuals. The initial prospecting of the back country is a more costly undertaking than the ordinary prospector can afford, so that the determination of the areas or belts over which the precious metals may be looked for with a reasonable hope of success, as well as the areas giving indications of the existence of other minerals, is of prime importance.

In addition to the stream-valleys, the main ridges and mountains have been explored; but over the greater portion of the area good rock-outcrops are rare on the higher country, owing to the heavy mantle of surface débris and the dense vegetation. This feature renders all prospecting operations difficult and expensive. Where a road or graded track traverses such country, the deeper excavations frequently afford the best sections obtainable.

An examination of the underground workings of the various mines, either abandoned or at present in operation, has been undertaken, and a connected plan of the various reefs of the gold-field will be compiled. It is unfortunate that none of the mines of the Hauraki or Kapanga groups are at present working below the level of the ground-water, as this has precluded all examination of the conditions obtaining in the lower levels.

General Geology.

General Classification.—The following classification of the rocks involved in the structure of the area of country under review is tentatively submitted pending a further petrographical examination, which may be expected to throw more light on certain rather obscure points:—

(1.) Palæozoic and Mesozoic strata.
(2.) Late Cretaceous or early Tertiary strata.
(3.) Tertiary volcanic rocks of the first period of vulcanism.
(4.) Tertiary volcanic rocks of the second period of vulcanism.
(5.) Intrusive rocks of various periods.
(6.) Pleistocene and Recent-Alluvial deposits.

(1.) *Palæozoic and Early Mesozoic Strata.*—Stratified rocks, both arenaceous and argillaceous, constitute the greater bulk of the fundamental or basement series of the Hauraki Peninsula. In the special area considered they have their greatest development in its northern prolongation, forming the main mass of Te Moehau mountain (2,935 ft.), and have here lateral extension continuously from the eastern to the western coast-line. South of Te Moehau district these rocks only reach the crest of the main divide at Tokatea Hill, but are, however, exposed in many stream-valleys, and occasionally on the actual coast-line on both sides of the divide. On the westward side they have been traced to and beyond the southern limits of the subdivision, but on the eastward side they do not occur further south, in the area at present examined, than Kennedy's Bay.

Subdivision of the older groups is by no means easy, as stratigraphical unconformity is not apparent. A consideration of their lithological character and the meagre palæontological evidence available may suggest a possible subdivision into three groups:—

(*a*.) Certain characteristic and extensive areas afford evidence that the period during which the accumulation of the sediments took place was marked by widespread manifestations of volcanic action. This has resulted in the interstratification with the ordinary clastic material of thick bands of rhyolitic lavas and tuffs. These rocks, wherever developed, are largely intruded by dykes, principally of porphyrite.

(*b*.) Another group of rocks occurs in proximity to the strata already mentioned. These consist of thin-bedded grauwackes and argillites, showing no evidence whatever of volcanic action occurring contemporaneously with the period of their deposition. They are intruded, however, in certain localities by diorite and porphyrite.

(*c*.) The youngest group of these sedimentaries is characterized by the presence of conglomerates, grits, and reddish-coloured shales. These conglomerates contain well-rounded boulders of grauwackes and argillites, and in addition igneous rocks, both rhyolites and porphyrites. All of these boulders would be derived from the erosion of a land-mass consisting of the rocks described, (*a*) and (*b*). The conglomerates of two widely separated areas are fossiliferous, and as some very fair specimens have been selected, their identification should place beyond doubt the age of these rocks.

All of the rocks, here grouped as Palæozoic and Mesozoic, have undergone considerable folding, and are disposed at high angles. Their maximum elevation, approximately 2,800 ft., is attained in Te Moehau Mountain, where they are capped by the younger volcanic rocks.

(2.) *Late Cretaceous or Early Tertiary Strata.*—These rocks—the New Zealand coal-bearing series—play a very subordinate part in the structure of the peninsular mass, but are of great interest as bearing on the age of the volcanic rocks of the auriferous series. They occur as isolated patches on both sides of the peninsula, in every case directly overlying in marked unconformity the argillites and grauwackes of the older groups. They are themselves overlain at certain localities by rhyolitic tuffs of the older volcanic group, and at others by the breccia-agglomerates of the younger volcanic (Beeson's Island) group, both of which are hereafter described.

The most complete sequence of these beds is to be found at Torehine, on the western coast-line, where they consist, in ascending order, of sandy marls, conglomerates, sandy clays, calcareous sandstone, and limestone. The beds are fossiliferous, and in places thin coal-seams are associated with the clays and marls. A collection of fossil forms has been made for identification from the various outcrops of these beds, but more especially from those on the eastern side of the peninsula, as the existence of the beds on this side was first discovered during the course of the present survey.