the largest one is situated inland, being about seven miles long and on the average two miles broad, containing the older portions of the beds, and not reaching anywhere the sea coast.

The other and smaller portion, containing the uppermost beds of the whole series, is separated from the lower portions by tertiary rocks of younger age, which run for a distance of about one mile from the eastern flanks of Mount Ivitai, along the northern banks of the Shag River to the western flanks of Mount Vulcan, capping that hill on its northern portion to the sea coast. This second portion is about one mile and a half long, and a quarter of a mile broad, and contains the principal coal seams of the whole series.

The lowest beds of the whole formation consist of subangular pieces of micaceous schists, often much decomposed, with occasional beds of small seams of coal 6 to 15 inches thick, of ironstones and ferruginous sandstones. Ascending higher in the series, the conglomerate which in its lowest portion had more the character of local *debris* cemented together, becomes gradually more rounded, and consists now, often almost entirely, of well-rolled pebbles of quartz.

After a thickness of several hundred feet, this conglomerate, which hitherto had almost exclusively formed the ranges, is overlaid by a series of thick-bedded sandstones and shales of a total thickness of about 150 feet, the latter containing a great number of small seams of excellent brown coal, but unfortunately too thin for any practical purpose, the largest one being only about 12 inches thick.

This portion of the formation is well visible, as the strata where they are cut through by the deep ravines descending from the Horse Ranges have given rise to enormous slips, so that the character of the beds is well exposed. I was enabled to follow these strata from the valley of the Shag River to the ranges above Trotter's Creek, where they are hidden below tertiary rocks.

Still advancing higher in the series, the beds of Mount Ivitai are reached, where we meet, between thick beds of conglomerate, layers of white quartzose sands, often very incoherent ,and shales, and amongst the latter a seam of fine pitch coal, with smaller layers of glance coal interstratified, and of a thickness of 3 feet 9 inches; however, as the dip of these beds, which in the lower portion is only inconsiderable, gradually becoming steeper, has now already reached 64 degrees, this seam will therefore be of little use for the extraction of fuel.

The smaller portion of the series, separated from the larger one by a belt of tertiary rocks, consists first of thick beds of conglomerates, mostly well-rounded pebbles of quartz, overlaid by shales and thick-bedded coarse sandstones, still standing at a high angle (62°); continuing to follow them down the Shag River for half a mile, the strata which hitherto had principally again been conglomerates becomes gradually less steep, dipping 49°, and consists now of shales with small seams of coal and bands of clay-ironstone, containing the same fossil plants as the shales in the coal mine at the Boat Harbour.

Before reaching the mouth of the river, the dip of the strata has diminished to 31°, and we meet here, between the conglomerates, quite a series of coal seams, often interstratified with them, and of which five workable seams of a thickness of at least 20 feet are exposed. These latter beds are covered by sandstones and conglomerates, by which the precipitous sea coast near the mouth of the river is formed.

In following the Coast in a northerly direction, we observe that the strata have an anticlinal arrangement, the coal seams having been greatly destroyed by slips and denudations, the beds immediately below them forming the coast line until we reach the so-called Boat Harbour, where the larger seams appear again just above high watermark, covered uncomformably by tertiary beds. It is here where years ago a coal mine for the extraction of an excellent brown coal (pitch coal) has been opened, which at present is worked by Mr. J. C. Rowley, of Heathfields, who raises about 250 tons per month, sold at 15s. per ton at the pit's mouth.

The following beds have been exposed in the coal mine in a descending order:—

Shales.	Feet.	in.	
Pitch Coal	3	10	Dip, 16° towards N.E.
Shales	4	4	
Pitch Coal	1	4	
Fireclay	0	6	
Main Seam Pitch Coal at present only works	8	0	
Shale	0	0	

It will be seen from this list that there is at least one more workable seam which hitherto has not been worked, and which is situated above the seam at present mined.

The coal mine is situated mostly below high watermark, and is worked on the Scotch Pillar and Stall system, 8 feet being left and 14 feet taken. It is approached by a main drive (horse road) 7 feet high and 6 feet wide, dipping about 3°; the water being collected at the end in a well, and brought out in an iron chest containing about half a ton, on the average, eleven times a day. This new or main drive runs 7 chains 12 links to this well, whilst some of the older or high-level drives which are connected with the former by well-secured cross drives have been advanced nearly 9 chains.

The whole portion of the new mine is all in good working order, well secured, and ventilated by an air shaft 5 chains from the entrance of the mine. In the present mine there are thus two seams available of 4 and 8 feet, together 12 feet; whilst it appears, from my examinations in other localities, that besides minor ones, another seam of about 7 feet will be found below these two seams; thus offering about 19 feet of coal in three workable seams; but taking only 15 feet of coal as available, and over an area of seventy acres, which, as I shall show in my final report, is only a moderate estimate, this would give us about 1,600,000 tons of coal, which, in order to allow for possible disturbances or other causes by which this quantity of coal might be diminished, reduced by more than one-third, would still leave us at least one million of tons of workable coal.

The Age.

This formation, which in its characteristic feature resembles greatly the conglomerate beds of the Malvern Hills, seems to be, if not altogether devoid of the remains of animal life, exceedingly poor in