The Kaawa–Ohuka Section

In addition to being important stratigraphically, this section is interesting because there are certain differences in altitude between two similar successions where they occur north and south of Ohuka Creek. Kear (1957) interpreted this to indicate a post-Kaawa differential movement, amounting to 45ft per mile of tilting to the south. The present writer has reinterpreted the depressed section as a massive block slide. The Kaawa section is critical to inferences of differential tectonic movements and overall changes of relative sea level, and hence some particulars of the section, which is shown in Fig. 3, are described here.

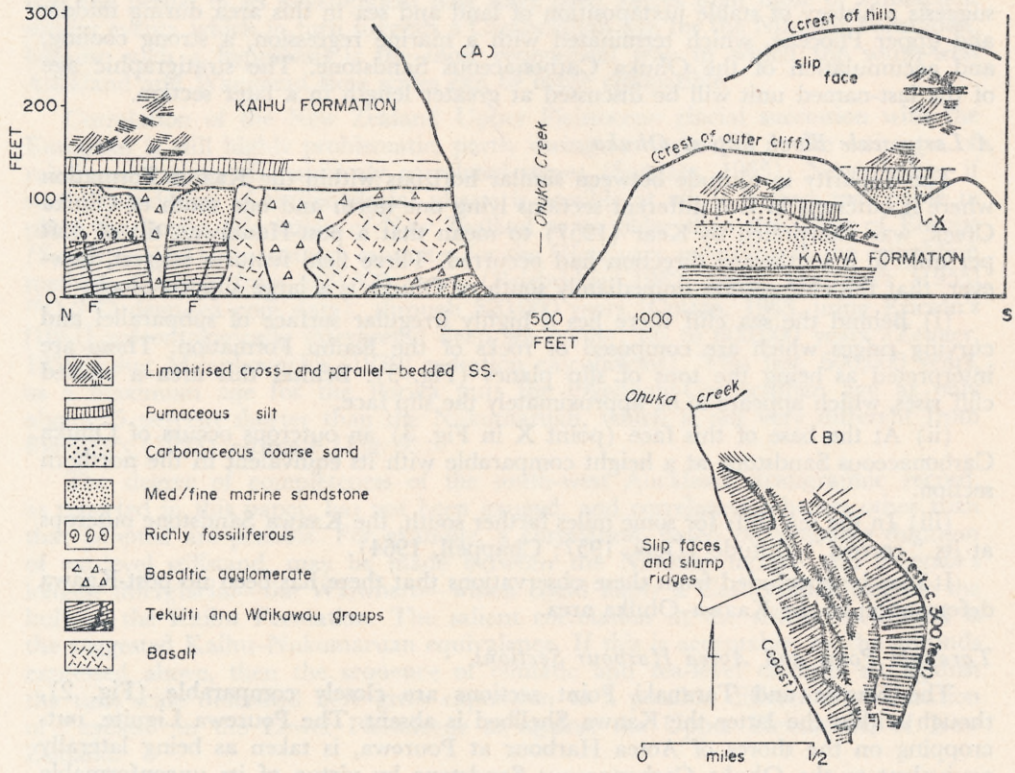

FIG. 3.—The Kaawa–Ohuka Section. Point X on the right side indicates the Ohuka Carbonaceous Sandstone where it outcrops at 120ft above sea level in the base of the inner, higher cliff.

Rocks of the Kaawa Formation within the section record a period of slow marine deposition in Pliocene times, which terminated with a strong deterioration of climate and a regression and fall of sea level. The basal Kaawa Shellbed is a blue-grey, very shelly, slightly muddy, fine to medium quartzose sandstone, and Laws (1950) interpreted its very rich molluscan fauna as indicating a depositional depth of 10–15 fathoms. Finlay and Marwick (1940) and Laws (1950) considered its age to be Opoitian. The underlying surface, cut across Oligocene rocks of the Waikawau and Te Kuiti Groups, is clean, sharp, and regular, and is here interpreted as a surface of marine planation.

The shellbed passes gradationally up into the Kaawa Sandstone within which there are no breaks or discontinuities. Bedding in this fine to medium sandstone becomes more distinct towards the top, where it comprises simple wavy laminae, sometimes rippled. The transition upwards into the Ohuka Carbonaceous Sandstone