



FIG. 1.—Location map of the west Piopio area.

these form the basis of the study. The columns, which are numbered "S1" to "S39" have been presented previously in detail (Hopkins, 1966). In addition, the area was mapped on a scale of four inches to one mile using N.Z.M.S. 3, area 1 mosaic maps N82/8 and N82/9. A reduced version of this map is given in Fig. 2. All grid references cited refer to the one thousand yard grid superimposed on this map.

#### *Previous Work*

The area has been mapped by Henderson and Ongley (1923), by Marwick (1946), a compilation of the efforts of several earlier workers, and by Kear (1960). None of these authors dealt specifically, or in any detail with either the Te Kuiti Group or the west Piopio area.

Kear and Schofield (1959) have defined the Te Kuiti Group and a number of formations within it on the basis of extensive work in the South Auckland district. Barrett (1962) has worked in the Waitomo–Te Anga area and later (1967) has carried out reconnaissance work in the north-west Piopio area. The discussion that follows summarises the work of these later writers as it applies to the west Piopio area.

At Worth's Quarry, Waitomo, Kear and Schofield (1959) have recognised the following formations of the Group:

- Otorohanga Limestone
- Waitomo Sandstone
- Orahihi Limestone
- Aotea Sandstone
- Whaingaroa Siltstone

Barrett (1962) has attempted to trace the formations recognised at Worth's Quarry westwards to the Te Anga area and has found that the Waitomo Sandstone becomes more calcareous and eventually cannot be distinguished from the Otorohanga and Orahihi limestones. He therefore has erected the Castle Craig Limestone as a formation which he considered to be the lateral equivalent of the three topmost formations of the Te Kuiti Group at Worth's Quarry. The Whaingaroa Siltstone could not be traced west of the Waitomo area either, and the Aotea Sandstone was found to be dominantly: "A massive light, blue-grey, very calcareous siltstone." (Barrett, 1962: 9). Barrett therefore erected the Te Anga Formation to cover these rocks in this area. The formation has been defined to include all the beds below the Castle Craig Limestone in the west and the