NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION NEWSLETTER

the City of Gisborne. Unfortunately, as yet we have not been able to find the two deposits together.

In Whakatane, the Kaharoa ash is 3 inches thick, and as the black pumice also occurs on the coast there, an effort will be made to determine the relationship along the strip of coast between Opotiki and Whakatane.

For two years or so, my main official work will be the soil survey of the Rangataiki Plains when I am sure we shall learn a lot about the distribution of the Kaharoa and Taupo ashes in the Bay of Plenty.

The paper, 'Excavations at Orongo Bay, Gisborne' by Roger Green and myself has been written up, and when published should serve as a model illustrating the use of geology and pedology in interpreting cultural layers and in sketching the history of human habitation in a local area.

EXCAVATIONS AT PAKOTORE, PAENGAROA, BAY OF PLENTY by Jack Golson.

Pakotore is an old Arawa pa occupying a large flat area on a broad ridge overlooking the Kaituna river from the east. Steep sided gullies protect it on all sides except for two short stretches, one on the north, the other on the south side, while the area is connected to the main ridge. At these two points there are ditch and inner bank defences which are connected by being carried round the eastern side of the pa. From the west a deep gully almost cleaves the site in two.

Essentially, therefore, the pa consists of three sections: the eastern area, occupying the highest point of the site, and two arms to the west, the northern arm short, the southern arm long and broad. The western half of this [illegible] arm is cut off by a transverse ditch and bank.

For its size the pa does not exhibit many internal features of habitation. The gentle slope of the high eastern area appears to have been flattened here and there into a number of platforms. There is a concentration of rectangular pits on the northern arm and a few scattered but well preserved examples of the same type on the eastern half of the southern arm. The western half of this arm, beyond the bank and ditch, has extensive but confused surface irregularities. The only

other evidences of habitation are provided by the sides of the main Rotorua-Tauranga highway which cuts through the site along the ridge approaches to it and essentially separates the eastern area from the western arms. At one point in this cutting there are signs of cooking and some shell; at another what appear to be postholes, showed up in section.

A major interest of the Pakotore site is that Kaharoa ash is present there. This ashfall has been dated by radiocarbon at about I000-I200 A.D. and the possibility exists of coleting the constructive and habitation of the pa to the time horizon represented by the ash.

The site was the scene of a two day training dig held in conjuction with the Association's Fourth Annual Conference at Rotorua in May I959 (see Journal of the Polynesian Society, June I959, pp.I50-I52), and the work begun by the sixty participants there was completed by a small team of Auckland and Bay of Plenty members in May.

Four areas were opened up for investigation during the Conference. Areas I and 2 were sited on each side of the transverse ditch and bank cutting across the southern arm of the pa: at each spot there were shallow but regular depressions representing the infilled rectangular pits aligned with long axis parallel to the ditch. It was the aim to link these two areas by cutting a trench across the intervening bank and ditch. Area 3 was situated at the extreme eastern end of the southern arm, close to the main road, and consisted of two rectangular pits lying side by side and appearing as shallow but dofinite hollows. Area 4, at the extreme eastern end of the northern arm, was like area 3 close to the road. Here there were no surface indications, but the road cutting nearby contained shells and evidence of cooking.

Area 4, however, proved so confused that its excavation was suspended and the Conference members assigned to it were moved to other areas where, from the point of view of training the work was more rewarding. In the event excavationsat area 3 gave the clue to the confusion exhibited by area 4.

Area I was dug sufficiently far within the two days of the Conference for the dimensions of the pit and some of its internal features to be discovered. The bottom of the pit

in area 2 was, however, not reached in the time available. These three areas were filled in at the end of the final day of the Conference. Subsequent investigations were concentrated on are 3 and on the section across the ditch between areas I and 2.

Excavation showed a remarkable uniformity in the process of infilling in the visible features of the site. All these had prentrated through the thin cover of Kaharoa ash — where this was present — into underlying beds of volcanic ash, some at least of the Mamaku series. The clean, soft, yellowish material at the bottom of the excavated pits seemed to have derived by natural processes from the lower ash. This fill waw fairly uniform, but pockets of grey with mixed Koharoa ash were noted. Above, and in vivid contrast came layers black with organic content. And in each section, immediately below the topsoil was a thin band of Rotomahana mud from the Tarawera Eruption of I887. This same sequence was repeated in the ditch, except that part of the lower fill consisted of thin bands of fine consolidated silt.

Whether this uniform history of infilling for the visible features of the pa can be made to support a hypothesis of the contemporaneity of these features is uncertain. What excavation did make certain was that in area 3 there was an earlier phase of occupation, the layers comprising which were in marked contrast to those described for the later period.

The best evidence was provided by the smaller of the two pits in area 3 which cut through the fill and removed part of the northern wall of an earlier pit, of which no surface indications at all remained. The fill of this earlier pit was grey Kaharoa and yellowish Mamaku ash, lying in a series of alternating diagonal bands, the result, it would seem, of the artificial infilling of the pit in question. It proved impossible to excavate more than a part of this pit, but its southern wall was found to have been cut quite definitely through a 4 inch layer of Kaharoa ash in situ: the only incontrovertible discovery of the site afforded of undisturbed Kaharoa ash.

Other evidence of human activity prior to the cutting of the still visible features was found at area 3, for the top 2½ feet of the baulk separating the two rectangular pits here proved to be composed of a confused mixture of Kaharoa and Mamaku ash. Precisely what the circumstances were which had produced this mixture it was impossible to discover however, since the later pits had so effectively removed the evidence.

It seems likely that the complexities of area 4 which defeated analysis on the first day of the Conference dig were caused by very much the same sort of activity, since the same sort of confused mixing of grey Kaharoa and yellowish Mamaku ash existed here as in the earlier period of area 3. A rough contemporaneity for the activities producing this distinctive ash mixture might be claimed, since Kaharoa ash, never more than a few inches thick here, must have been lying raw and plentiful at the time.

Only the lower pit at area 3 was fully excavated. Measured at floor level, this proved to be 18 feet long, 11½ feet wide and 5 feet deep. Three rows of five post-holes were found in the floor; those of the central row were deepest (20-24 inches), that of the side rows varying from 12 to 22 inches in depth. There were in addition, four postholes partly in the southern wall of the pit and not arranged conformably with the main posthole pattern. High up on the short sides of the pit two slight benches had been made and more postholes were found on these. There were no postholes on the northern margin of the pit, but one— possibly three — slanting slots into the northern wall may have had a structural purpose. Dug into the floor of the pit in the north west corner were small pits: one circular, 2 feet in diameter and 20 inches deep, the other 2 feet square and 15 inches deep.

The smaller pit at area 3 was only half excavated, but since this excavated half consisted of two opposing quadrants, it is possible to describe the dimensions and major features of the structure. At floor level the pit is 15½ feet long and 6½ feet wide, but two definite benches along the short sides of the pit increase the overall length to 21 feet. The pit is 4 feet deep and the benches 2 feet and 1½ feet from the top. There is a single row of postholes along the middle of the floor — possibly five of them, but more were excavated. At least one stake hole is present in the eastern bench, while a horizontal hole, 1 foot in diameter was found penetrating 15 inches into the side of the pit at the western bench.

The earlier structure at area 3 was much shallower than the two later ones, being only 18 inches deep. Only parts of the north and south walls of this pit were discovered in the time available: the distance between them being 20 feet. Two postholes were discovered, one near each discovered wall of the pit.

Continued p.20.

defended position, but produced no evidence of human interference, though a rectangular pit of Phase II type had been uncovered the previous year on rising ground near the shore. During the course of the pa excavations, three squares put down on a ravine terrace between the pa headland and the sea revealed two occupation layers. The upper was in part at least post-European, but the earlier level contained worked and unworked moa bone — some in association with haangi pits — and other material of early derivation.

In the case of the pa site, the evidence so far evaluated suggests that the defences were at least not of Moa-hunter construction, but C.14 analysis of samples obtained may show if any of the earlier structures were contemporaneous with the site on the shore below, where people of the Moa-hunter culture undoubtedly lived and worked over 600 years ago.

EXCAVATIONS AT PAKOTORE, PAENGAROA, BAY OF PLENTY
by J.Golson (Continued from p.14).

The ditch between areas 1 and 2 proved to be a remarkable feature. Eight feet deep below its outer lip, it measures 16 feet across the top. The sides fall increasinlgy steeply to a perfectly flat bottom just over 5 feet wide.

No artefacts were found, and little foreign material of any kind. The Pakotore excavations have, however, provided data of an uncomplicated sort in the ground plans of rectangular pits, the elucidation of whose features and functions is of great importance in North Island settlement archaeology, since the pits themselves are so numerous and widespread.
