



NEW ZEALAND
ARCHAEOLOGICAL
ASSOCIATION

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION NEWSLETTER



This document is made available by The New Zealand Archaeological Association under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

To view a copy of this license, visit
<http://creativecommons.org/licenses/by-nc-sa/4.0/>.

THE DITCH-AND-BANK FENCE

Colin D. Smart
Australian National University
1965

The sort of evidence described below was first encountered by the author and Alastair Cameron on the Pahaoa Station, Wairarapa coast, in 1961. Subsequent fieldwork revealed further examples of the same form of evidence at Poutu (near Lake Roto-a-ira), and in the Wangaehu, Wanganui and Waitotara River valleys. It was not until more intensive fieldwork was undertaken in the Wanganui area in 1962-63 (Smart & Smart, 1963: 187-190), however, that the potential value of this sort of evidence was realised. Although it was hoped to add further examples and obtain fuller historical information circumstances (since 1963) have prevented this. The available evidence, incomplete and brief though it may be, is presented below.

The earthwork:

Common to all recorded examples is a particular earthwork - it is taken as characteristic of the ditch-and-bank fence. Comparatively small and simple, the earthwork comprises only a small bank with a shallow ditch along one or both sides. The bank may rise as much as two feet above the surrounding ground surface and, even when the depth of the associated ditch is taken into account, seldom exceeds an overall height of about three feet. The width of the bank is about two feet, as is an accompanying ditch, so that an entire unit of ditch-bank-ditch can reach an overall width of almost seven feet (Figure 1). The size of this feature is one factor which sets it apart from the defensive earthworks of pa sites.

In the better preserved examples the earthworks are neat and regular in appearance. The sides of the ditches and bank are flat and often nearly vertical. The top of the bank and the bottom of the ditches are flat and level. The earthwork usually runs in perfectly straight lines with sharply angled corners where the course of the line changes. This almost geometrical regularity also sets these earthworks apart from pa defences. Most of the known examples, however, do not preserve their former appearance so well. Trampling by stock and even ploughing have reduced the earthworks to very low relief so that only the regularity of their appearance and their general proportions remain to indicate their original nature.

Although in size and shape the earthwork shows very little variation, in plan or arrangement some significant differences have been noted. This variation is interpreted, through associated historical records, as reflecting differences in the utilisation of the ditch-and-bank fence. The major difference is between earthworks which have been arranged in a linear way and those which have been arranged to enclose a small area of ground. In actual fact, as the following discussion will show, the difference is not as simple as this since it involves associated or dependent differences in situation as well. A division between two sorts of small enclosure may be of importance too.

On the basis of field observations, and some historical information, this particular earthwork form served as the base for a fence or hedge (sometimes both). Examples are known where the fence or hedge is still present on part or all of the earth-work. Even where only the earthwork itself remains there are indications, in some cases, of post butts or postholes at regular intervals along the top of the bank. Hence the application of the name ditch-and-bank fence to this particular form of surface evidence. A photograph showing a newly made bank at Wairoa (Burton Bros. 3848) clearly reveals its construction of large earth sods. In most recorded examples the volume of the ditch or ditches is approximately equivalent to that of the bank so it can be safely assumed that the earth from the ditch(es) was used for the bank. Since no examples are known in which a bank exists without associated ditching then the inter-dependence of the two features is apparent - the construction of the bank creates the ditch, which in turn emphasises the bank.

The linear ditch-and-bank fence:

In this category are sites where the earthwork runs a straight or continuous course for considerable distances, without appearing to immediately enclose a defined area. Most known examples correspond with, or actually still form, the boundaries of paddocks or properties around Wanganui. They can occur in virtually any topographic situation but, as with fence lines on farms, they are often found along ridge crests, along the edges of flat plateaux, in straight lines across rolling country, and so on. During fieldwork in the Waitotara/Nukumarua area (Smart, 1962: 170-184) a number of examples were noted in these sorts of situations but only a few (perhaps inadvisedly) were formally recorded as archaeological sites. A few examples will serve to illustrate this category.

In rolling country just north of the Waitotara River a length of this characteristic earthwork continues directly from the end of a large boxthorn hedge. Close examination revealed the presence of the earthwork, a bank with a shallow ditch on either side, beneath the hedge itself. An identical example occurs beside the main road through Maxwell, just north of Wanganui, while others at Kai Iwi bear hedges along part of their length and fences along the remainder. Until road-widening was carried out about 10 years ago, the main road between Wanganui and Bulls was bordered in places by a low gorse hedge on a prominent earth bank.

A series of fragments of linear earthworks was recorded behind Kaiwhaiki and Upokongaro just up-river from Wanganui. Four long sections were recorded (N. 138/65, 67, 68, 72) following ridge crests as angled lines fitting the natural course of the ridge. One runs for more than a mile along a ridge crest over 400 feet above the valley floor. From historical records and two informants (M. J. G. Smart, A. H. Caines) some of these earthworks can be identified as the remains of the boundary fence of an early settler who farmed a land block here prior to 1900. Some sections still serve as fence or hedge lines to the present day.

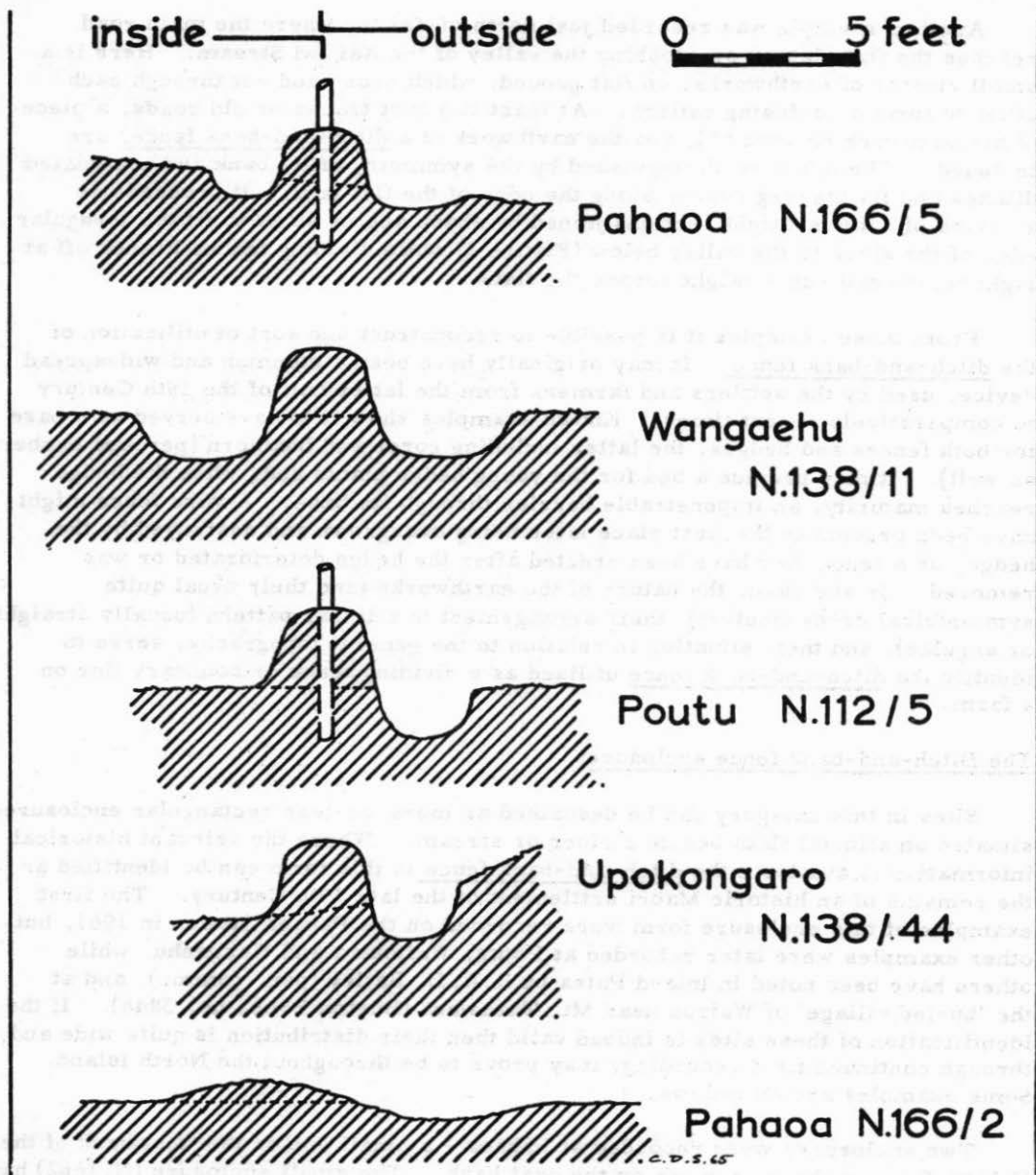


Figure 1.

Cross sections to show variations in the form of the ditch-and-bank fence earthwork.

Another example was recorded just north of Kai Iwi where the main road reaches the flat plateau overlooking the valley of the Kai Iwi Stream. Here is a small cluster of earthworks, on flat ground, which cross and cut through each other to form a confusing pattern. At least two cart tracks or old roads, a piece of an earthwork redoubt (?), and the earthwork of a ditch-and-bank fence, are included. The latter is distinguished by the symmetry of its bank and associated ditches and its zig-zag course along the edge of the flat land. It proceeds as a series of short straight sections joined by sharp angles so as to fit the irregular edge of the slope to the valley below (Figure 2) while dividing fences branch off at right angles and run straight across the flats.

From these examples it is possible to reconstruct one sort of utilisation of the ditch-and-bank fence. It may originally have been a common and widespread device, used by the settlers and farmers from the latter half of the 19th Century to comparatively recent times. Known examples show it to have served as a base for both fences and hedges, the latter including gorse and boxthorn (perhaps barberry as well). It may provide a bed for the young hedge plants and, when the hedge reaches maturity, an impenetrable barrier through its base. A wire fence might have been present in the first place later being overgrown and destroyed by the hedge, or a fence may have been erected after the hedge deteriorated or was removed. In any case, the nature of the earthworks (and their usual quite symmetrical cross-section), their arrangement in a linear pattern (usually straight or angular), and their situation in relation to the general topography, serve to identify the ditch-and-bank fence utilised as a dividing fence or boundary line on a farm.

The Ditch-and-bank fence enclosure:

Sites in this category can be described as more-or-less rectangular enclosures situated on alluvial flats beside a river or stream. Where the relevant historical information is available the ditch-and-bank fence in this form can be identified as the remains of an historic Maori settlement of the late 19th Century. The first examples of this enclosure form were recorded on the Pahaoa Station in 1961, but other examples were later recorded at Poutu, Waitotara and Wangaehu, while others have been noted in Inland Patea by R.A.L. Batley (per. comm.), and at the 'buried village' of Wairoa near Mt. Tarawera (Burton Bros. no. 3848). If the identification of these sites is indeed valid then their distribution is quite wide and, through continued field recording, may prove to be throughout the North Island. Some examples are as follows.

Two enclosures were recorded at Pahaoa - a small one on the west bank of the Pahaoa River and a larger one on the east bank. The small enclosure (N. 1662) has been reduced to a vague outline of low relief (Figure 1). One small section of earthwork preserved beneath a fence indicates original proportions rather like those of the Poutu earthwork (Figure 1). The outline is more or less rectangular and encloses almost 1 acre of ground. One long side of this enclosure is formed by the Pahaoa River. The enclosure extends from a higher river terrace, down a steep scarp of 10-12 feet, and across a narrow lower terrace just above river level to the waters edge. A small stream cuts through the centre of the enclosed

area to emerge into the river. Close observation in the late afternoon revealed the presence of low, regular, parallel undulations running across part of the enclosed area.

The larger Pahaoa enclosure (N. 166/5) is better preserved (Figure 1) and is perhaps the most interesting site so far recorded. Rectangular in plan it encloses almost 6 acres, but is subdivided into two sections by a single cross wall (Figure 3). The two adjoining sections open, along their longest side, on the Pahaoa River and extend back across two low terrace levels to the base of a prominent natural scarp 20 feet high and 200 feet in from the river edge. Traces of wooden posts and regularly spaced breaks were recorded along the earthwork bank. The enclosed area is flat and poorly drained while along the foot of the innermost scarp and just outside of the back wall of the enclosure, is a thin strip of swamp. Within parts of the enclosure, and over an additional area of some 2-3 acres to the south, are low, parallel, regularly spaced mounds similar to those observed in the smaller site over the river. These mounds parallel the sides of the enclosure and seem to be associated with it; no traces of such mounds could be found on the rest of the river terraces. Located near the enclosure, on the edge of the higher terrace behind, is the site of a small "house" and the remains of a small cemetery.

A map surveyed by T. M. Drummond in 1891 shows this large enclosure (N. 166/5) at Pahaoa as a divided and fenced area, the southern section of which is labelled "Pah" in the accompanying fieldbook (p. 175). A "whare" is shown just above the southern inland corner of the enclosure and a "grave" ("cemetery" in fieldbook) close by. These two items correspond with the remains still visible on the ground. In later maps of this same part of the Glendhu Station at Pahaoa the small cemetery becomes a "Native Reserve" of one acre. These records identify the site as that of a Maori settlement in 1891. Although the number of inhabitants is not known, the settlement existed for a sufficient period to require the creation of a small cemetery which remains a Maori reserve to the present time.

Another well-preserved example was recorded at Poutu (N. 112/5). The enclosure is situated on the edge of the Poutu Stream just in from the point where it emerges from Lake Roto-a-ira to flow around the southern flank of Mt. Pihanga to Taupo. A simple rectangle in plan, it is situated on flat land with one side formed by the Poutu Stream (Figure 4). The earthwork is asymmetrical in section with a single outer ditch (Figure 1). The remains of a wire fence are still present in places along the prominent bank. The area enclosed is about 5-6 acres. A small cemetery containing several mounded graves is attached to the outside of the rear earthwork near its mid-point.

The former village of Poutu is known to have been located somewhere near this site but probably on the other side of the Poutu Stream. A map surveyed by H. J. Lowe in 1900 shows "old Pa" on the site of the enclosure while another old map (anon, no date) shows a group of buildings labelled "Te Rata" in the same place. Although the historical information is less explicit, the similarity of this site and the larger one at Pahaoa can be seen, so the Poutu enclosure may indicate a Maori settlement (with cemetery) prior to 1900.

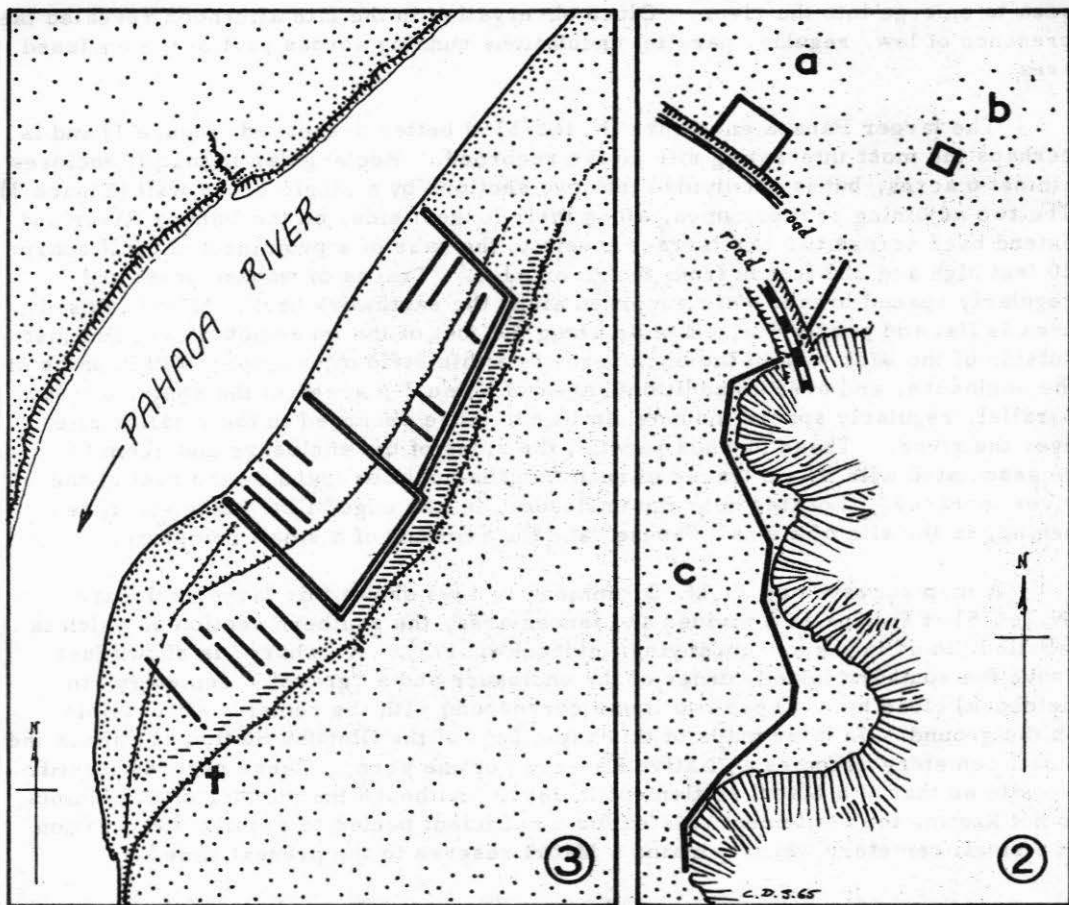


Figure 2 Examples of small enclosures at (a) Upokongaro (N. 138/44), lower Wanganui River, and (b) near Matatera (N. 138/24), on the Wangaehu River; and a linear ditch-and-bank fence (c) near Kai Iwi.

Figure 3. Plan of the large Pahaoa ditch-and-bank fence enclosure (N. 166/5) showing the outline of the enclosure (double line), the low mounds (single lines), and the small cemetery (cross) nearby.

Two enclosures (N. 138/11) were recorded at Whakaware in the Wangaehu River valley (these sites are described in detail elsewhere; Smart, in prep.). One is of pentagonal plan and the other has an indented rear wall (Figure 4) which follows the general line of the hill base behind. The two enclosures must have been more or less contemporary since their adjacent walls were constructed parallel with only a narrow patch between. These adjacent walls, however, exhibit different degrees of weathering so that, unless the walls were constructed differently in the first place, the enclosure to the west (downstream) must have been slightly earlier than the other. They are the largest examples recorded, enclosing about 9 acres (eastern enclosure) and 13 acres (western enclosure) each. Where the earthwork crosses level ground it is quite symmetrical in section (a bank with a shallow ditch on each side) (Figure 1) but where the earthwork rises over the toe of the slope behind it no longer shows an outer ditch, possibly due to natural slumping from the slope above.

One local informant (Mr R. Baldwin) suggested the former presence of a Maori settlement called Akarama where these two enclosures are located. A map surveyed by Barclay and Garret in 1880 shows the name "Te Rua Pouhau" ("Te Rua Poochau" on an attached sheet) for this location but shows no settlement or remains. There is, however, a small cemetery (N. 138/33) beside the enclosures suggesting a similarity with the Pahaoa and Poutu sites.

About a mile upriver from the Whakaware sites, at Matatera, are a number of earthwork remains which appear to be of the same form as the ditch-and-bank fence and show arrangements suggestive of the enclosure plan (these sites are described in detail elsewhere: Smart, in prep.) Two clear enclosures are located within a narrow, tongue-like loop of the Wangaehu River. The largest (N. 138/34) is formed

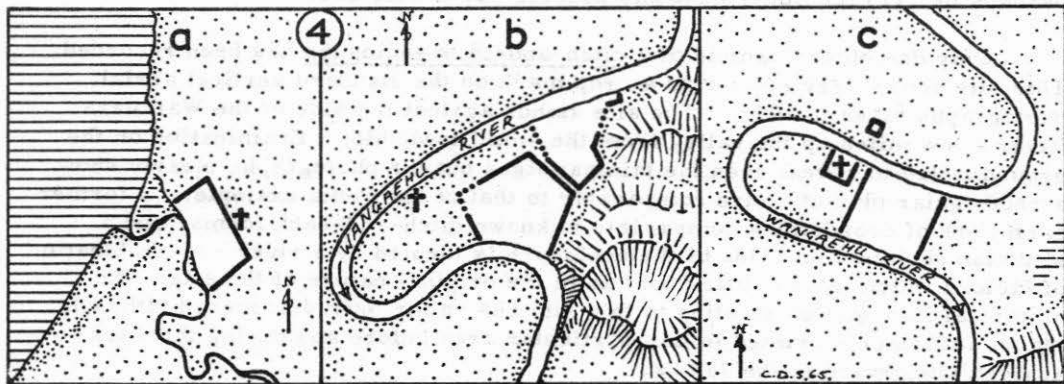


Figure 4 Plans of the ditch-and-bank fence enclosures (a) at Poutu (N. 112/5), (b) at Whakaware (N. 138/11), and (c) at Matatera (N. 138/32/34). Heavy lines represent the enclosure earthworks, a cross, the small cemetery.

by two straight earthworks running directly across the projecting tongue of land so as to cut off, with the river on either side, a square area of flat ground about 8-9 acres in extent (Figure 4). Here the earthwork has a low bank with a single ditch against the outer side (cf. the earthwork at Poutu, Figure 1) but the ditch appears more substantial than the bank which contrasts with other examples discussed above. Within this smaller enclosure stand six graves with wrought-iron surrounds. In two places nearby these enclosures, and located against the Wangaehu River, are two other sites. (N. 138/9, N. 138/30) exhibiting traces of the usual earthwork form and suggesting the former presence of enclosures against the river edge.

The largest of these Matatera sites, the two-walled enclosure within the loop of the river (N. 138/34), is shown on a map surveyed by Dix and Bogle in 1914 to establish a cemetery reserve on this part of the Matatera Block. Both walls are clearly marked as earthworks and labelled "Remains of old Ditch and Bank". The smaller enclosure (N. 138/32) is shown as a fenced cemetery containing six graves, and labelled "Tongowhiti". Fruit trees and two buildings are shown in or near the larger enclosure. These latter are described as "old wharepuni (tekataewaru)" and "old wharepuni Ngamona". Another map by the same surveyors also dated 1914 shows whares outside of this loop of the river, nearer to the base of the hills behind. Two whares and a fenced enclosure are shown on the location of one site of earthwork traces (N. 138/9) while another whare ("Ihaia's House") is shown on the location of the similar site (N. 138/30) nearby. At these sites there is again evidence of former Maori settlement; settlement sufficiently permanent to require the construction of a small cemetery which persists to the present time as a reserve in Maori ownership. Some of the whares may have still been occupied when Dix and Bogle surveyed the area in 1914 but they described two "wharepunis" as old and referred to the largest earthworks as "Remains of old Ditch & Bank" so perhaps by 1914 the settlement was passing out of existence.

Only one other example of a ditch-and-bank enclosure has been recorded. This site shows very clearly as a crop mark on the standard vertical aerial photographs taken in 1943. The site stands against the side of the Waitotara River a few miles up the valley from the small township. Examination on the ground failed to reveal even the faintest signs but the photographs clearly show a rectangular plan of a size comparable to that of the Poutu example, a former earthwork of proportions comparable to known ditch-and-bank forms, and a situation such that one side of the enclosure is formed by a river - a combination of factors which leaves little doubt as to the original nature of the site. No historical information relating to this site has so far been discovered although Maori settlements existed in this particular area before and during the wars against Titokowaru in the 1880's.

These examples of the ditch-and-bank enclosure illustrate a fairly consistent pattern in which the earthwork form, the arrangement of the earthwork, and the situation in which the enclosure occurs, combine together with comparatively little variation. The enclosures are distinct from the linear arrangements described above. While some variation in the actual shape of the enclosure (in plan view) was recorded, in most cases these variations can

be explained in terms of the local topography. Less easily explained is the prominence of the ditch in the earthworks on the two better-preserved enclosures at Matatera, on the Wangaehu River. The largest of these two sites (N.138/34) may not be, in fact, an enclosure of this form at all but perhaps some very eroded defensive ditching. With such a small sample available for description these sorts of variation cannot satisfactorily be explained.

There seems little room for doubt that the earthworks and enclosures belong to the post-contact period and the earthwork itself can probably be regarded as a European introduction in both its form and function. The enclosure arrangement, however, may be of Maori origin though it remains difficult to see exactly what its function was. Certainly it seems to have been associated with Maori settlements sufficiently permanent to require the creation of a cemetery. But in known examples these cemeteries contain but few graves so either the settlements involved a very few people for some time, or a number of people for just a few years. With so few tangible signs of settlement recorded by the (admittedly meagre) historical sources so far consulted, probably the former situation (fewer people) is to be preferred. Burton Brothers photographed an example at Wairoa prior to the Tarawera eruption in 1886; Drummond recorded the larger Pahaoa enclosure when surveying there in 1891; Lowe may have recorded the Poutu settlement in 1900; and it is possible that the Matatera sites were going out of use when Dix and Bogle surveyed the boundaries of the cemetery reserve there in 1914. Just how early this form of settlement occurred (though probably after 1840) is not known but the historical records suggest (and an absence of reports from older local informants supports this) that the ditch-and-bank enclosure may have gone out of use early in the 20th century.

Some speculation is also possible concerning the use for which the enclosures were intended. The examples recorded in the Burton Bros. photograph at Wairoa appear to enclose gardens (in which potatoes grow) and houses (whares). The two Pahaoa enclosures both show traces of regular undulations which might be identified as beds for potatoes or other crops. The provision of a strong (especially pig-proof) fence around gardens would seem a reasonable explanation of the enclosures. But this ignores perhaps the most striking feature of all the recorded examples - their situation against the edge of a river or stream. Such consistent proximity or access to water would suggest animals retained within an enclosure, rather than pests held outside of an enclosed garden. Indeed the very size of some of the enclosures supports their use for grazing rather than crop growing. There is no reason, of course, why both stock and gardens could not be enclosed within a strong boundary fence as long as reasonable sub-division kept the two apart. Such a compromise interpretation may well have to serve until more examples and fuller historical information become available.

Smaller enclosures:

Four enclosures were recorded in the Wanganui and Wangaehu valleys which seem to differ significantly from the larger enclosures described in the preceding section (attributed to Maori settlements of the post-contact period). These four sites preserve earthworks (or remnants of earthworks) of the ditch-and-bank fence

form but arranged in a square of small size, and situated on flat land away from a river or stream. The squares are only about 100-150 feet across and enclose a quarter to a half acre of flat ground. One example (N. 138/44) is located near Upokongaro on the Wanganui River, the other three (N. 138/24, 25, 26) are located across the Wangaehu River from the Whakaware and Matatera enclosures described above.

Only the site at Upokongaro has any historical record. One local informant (A. H. Caines) described it as the former site of the gardens and house of an old man who was a veteran of the Crimean War. The establishment was falling into disuse about 1907. Its small size, situation away from a river or stream, and probable association with a single European occupant, set it aside from the larger enclosures already described.

Bibliography

- Anon, (no date) - (map of the area around Poutu), Lands and Survey, map 1571.L, Wellington.
- Barclay, H. Mc. and Roland Garrett, 1880 - (map of the area around Whakaware), Lands and Survey, map W.D.501.L, Wellington.
- Burton Brothers, (no date) - Photograph no. 3848, Wairoa, negative in Dominion Museum (photo also appears in Muir and Moody, 1901, Catalogue of New Zealand and South Sea Scenery).
- Dix and Bogle, (June) 1914 - "Plan of Matatera Block", Lands and Survey, map W.D.2674, Wellington
- _____, (Nov.) 1914 - "Map of part of Matatera Block" (cemetery reserve), Lands and Survey, map W.D.2724, Wellington.
- Drummond, T.M., 1891 - (map of the Pahaoa area), Lands and Survey, map W.D.1088 and fieldbook no. 1540, Wellington.
- Lowe, H.J., 1900 - "Topographic plan of Pihanga Survey District", Lands and Survey, map 14534 Topo. L, Wellington
- Smart, Colin D., 1962 - "Preliminary report of field work in the Nukumarua-Waitotara area", N.Z.A.A. Newsletter, 5 (3): 170-184.
- _____, (in prep.) - "Archaeological surface remains at Whakaware, Wangaehu River".
- Smart, Colin D., and M.J.G. Smart, 1963 - "Report on further fieldwork in the Wanganui District", N.Z.A.A. Newsletter, 6 (4):187-190.