

## Red Argillite Artefacts from the Canterbury Region, New Zealand

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Māori artefacts (taonga) made from red argillite are rare and only about 20 have been recorded from Canterbury, mainly from early period coastal occupation sites dating to the fourteenth or fifteenth centuries. They include small adzes or chisels, minnow lure shanks, discs and a decorated hook point. Most of these probably had a non-utilitarian purpose and at least some were likely possessed by people of higher social status. New information is provided on these artefacts and on possible sources for the raw material.

**Keywords:** Canterbury, Māori artefacts, red argillite, stone sources, taonga

### Introduction

One of the more unusual rock types utilised by early Māori in Canterbury and Otago, in the South Island of Aotearoa New Zealand, was red argillite (indurated mudstone). A small number of artefacts of this material were recorded by Wayne Orchiston in his PhD thesis (1974: table 2.26), most of which had been found at coastal sites between Banks Peninsula and Otago Peninsula, and included adzes, chisels, 'slate' knives, minnow lure shanks and some unique carved objects. Altogether he listed 20 items from Canterbury, although none of these were described or illustrated. In fact, Orchiston (1974) was more concerned with the source of the argillite and undertook a thorough review of the geological literature available at the time, suggesting that it may have been obtained from somewhere inland of the Waitaki and Opihi river mouths in South Canterbury. Skinner (1974: 115) records that the source of red argillite was the "headwaters of the Waitaki", though the basis for this was not stated.

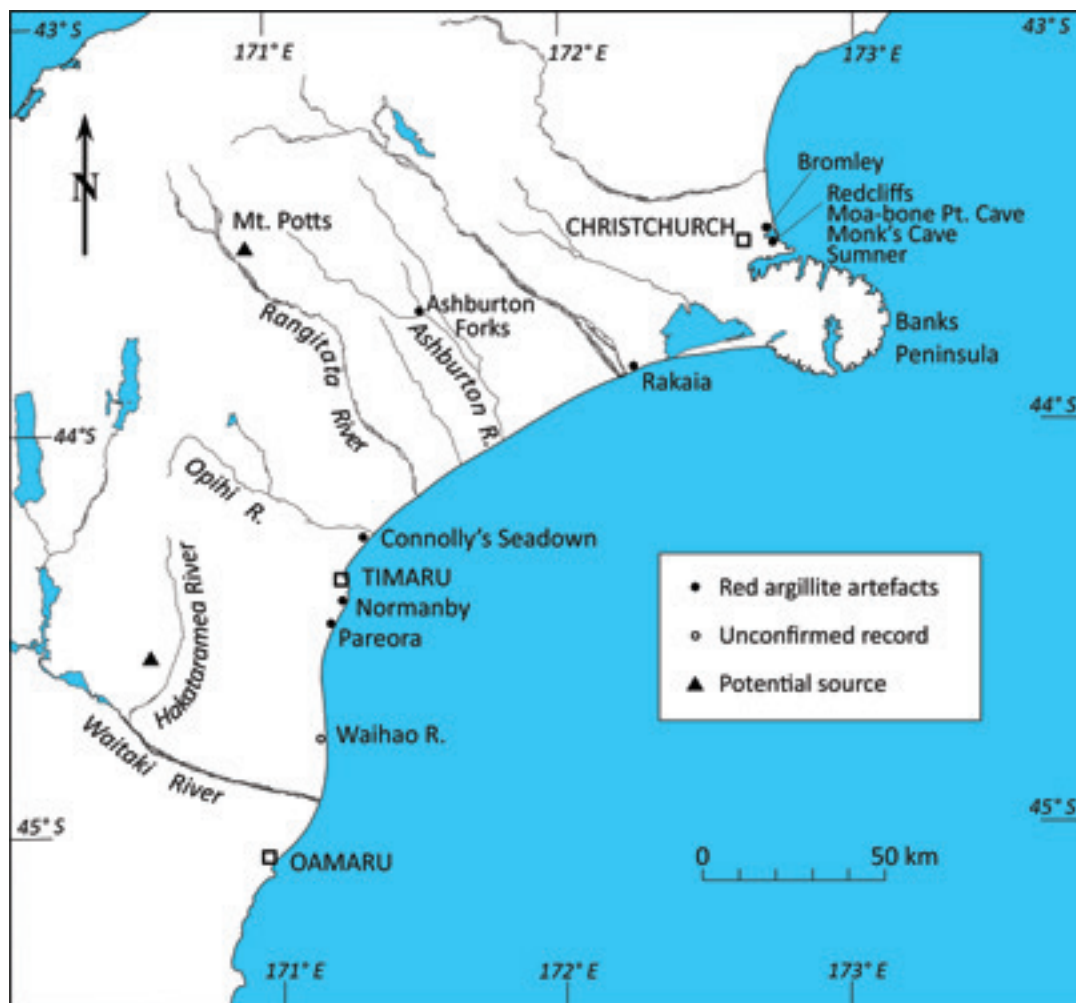
The present study involved a re-examination of all of the red argillite artefacts listed by Orchiston (1974) from the Canterbury

region that could be relocated in museum collections, and was primarily aimed at providing better documentation of these items and confirmation of the rock type; some new records were also able to be added to the list. The geographic distribution of these artefacts is shown in Figure 1. Limited fieldwork was also undertaken to identify potential sources of the raw material.

Catalogue numbers referred to in the text (e.g. E138.336) are mainly those of Canterbury Museum. Numbers prefixed 'D' refer to items held by Otago Museum, and 'SCM' to objects in South Canterbury Museum.

### Lithology and Source

Most of the artefacts of red argillite from Canterbury are reddish brown (2.5YR – 5YR) or weak red (2.5YR, 10R) in colour (colours are according to the Munsell Soil Color Chart, 2000 version, in artificial light). Much of the argillite is distinctly sheared and contains sparse to common, irregular, greenish grey or dark-coloured veins. The argillite is a relatively hard but brittle rock and because of its fissility,



**Figure 1.** Location of sites with red argillite artefacts, and potential primary sources of the rock type, in the Canterbury region. Map: Louise Cotteral

is prone to fracturing along sub-parallel shear planes.

The question of where the red argillite was procured from is a matter of speculation. Certainly Orchiston's (1974) view that all of the argillite was obtained in South Canterbury cannot be substantiated, although there are some bands of red-green meta-volcanic rocks within the Permian greywackes in the inland area (Forsyth 2001).

Two potential primary sources were identified in this study: in the lower Hakataramea valley at Station Stream and the

Mt Potts area in the Rangitata River Valley (Fig. 1). Cobbles of red argillite (up to 40 cm across) are abundant in Station Stream. The argillite is all of similar colour (dark red), shows moderate to strong fissility and contains common colourless to dark green veinlets. Samples from the Mt Potts area are more variable in colour, ranging from dark red to weak red (10R 5/2 – 5/3), reddish grey and purplish red. They show weak to strong fissility and some contain parallel, light greenish grey argillite bands. Colourless, white and dark green veins are rare to common. This

area is likely to be one of the main sources of pebbles and cobbles of red argillite found in the Rangitata River and on the coast near the river mouth. A few pebbles and small cobbles have also been seen in the Ashburton River, at the mouth of the Rakaia River and in the Opihi River in South Canterbury, so clearly there were other secondary sources.

Given the broad distribution of artefacts (including Otago) it is likely the red argillite was procured from multiple sources, probably mainly from major rivers or along the coast near river mouths. This is backed up to some extent by a flake or spall (E139.26) off a smooth water-worn cobble found at Sumner, as well as part of a rounded cobble of red-brown argillite (E167.16) from the Rakaia site L37/4, which appears to have been worked.

### **Description of Artefacts**

No detailed study of the artefacts made from red argillite has been attempted, but those items listed by Orchiston (1974 table 2.26) that

could be relocated in Canterbury Museum and other museum collections were re-examined, and 10 other examples have been added to the list (Table 1). Additional items recorded by Orchiston from Otago ( $n = 10$ ) and Southland ( $n = 1$ ), and those held in private collections, were not considered. Altogether 21 objects from the Canterbury region are recorded here.

Red argillite was used for a wide variety of artefact types, most if not all of which were probably non-utilitarian. The more common ( $n = 5$ ) are small adzes or chisels (or pieces of them). One unusual chisel from Normanby (SCM E278) is flat-sided and has a narrow bevel at both ends; it is also remarkably thin (2 mm). Another, from Rakaia (E153.21), has a high-angle bevel as well as a laterally reduced butt, similar to that of a Duff Type 1B adze (Duff 1956) (Fig. 2). Because of the nature of their bevels, both of these chisels would have been unusable for woodworking. There is also a particularly interesting piece from Redcliffs (E158.795), consisting of an elongate, partly polished fragment that has been sawn and



**Figure 2.** Chisel with laterally reduced butt from the Rakaia River mouth. Note the high angle, slanted bevel. Canterbury Museum E153.21



**Figure 3.** Piece of sawn red argillite from Redcliffs, showing a snapped groove along the lower edge. The opposite (upper) edge is polished. Canterbury Museum E158.795

snapped (Fig. 3). It suggests that some chisels (and possibly other items) were produced from larger slabs by this technique, which is the same as that used for cutting nephrite. A partly polished but uncut slab (E163.599) was also found at nearby Moa Bone Point Cave.

Only one larger adze has been recorded, from the Pareora River mouth (D25.1678). It is made from less fissile reddish brown argillite and has been initially shaped by flaking then almost entirely polished (Fig. 4). It has a flat-oval cross-section and one curved side. The bevel is almost symmetrical or bifacial, rounded, and the cutting edge is slightly damaged. The adze lacks a defined butt and therefore would be classed as a Type 2 form (Duff 1956).

There are three fishing-related items from Canterbury. Two of these are minnow lure

shanks, one from Redcliffs (E142.276), the other a probable broken shank from Bromley (E159.236). The latter consists of a polished piece with a sub-triangular cross-section. The Redcliffs lure is thin and flat-sided with lateral notches near the pointed head, three on the tail, and another on the distal end (Fig. 5). The sides and edges are mostly polished. The most impressive item, though, is an ornamented trolling lure hook point from the Rakaia River mouth (E155.83), previously illustrated by Trotter (1972 Fig. 4a). It is 68 mm in length and made from dark reddish brown argillite. There are 17 evenly-spaced notches along the outer margin of the point and the attachment end is in the form of a fish head with a small drilled hole (eye) for lashing to a trolling lure shank (Fig. 6). It is unlikely, however, that such an item would actually be used in fishing,



**Figure 4.** Polished adze, with flake scars, from the Pareora River mouth. Otago Museum D25.1678. Photo by author

given its ornamentation, and could have been worn as a pendant. Notably, little evidence of fishing has been recorded from the Rakaia site (Jacomb 2005).

Other items that probably had an ornamental purpose include two discs, one from Ashburton Forks and the other from the Pareora River mouth. The Ashburton Forks example (E138.336) is an almost perfectly circular polished disc of red argillite (Fig. 7). The two sides of the disc are well-polished and the outer edge, which is only about 1.5 mm thick, has been intentionally smoothed. Interestingly, a more ovate disc of well-polished dark grey argillite (E99.54.19, 100 x 76 mm) was found in the same area. It was mistakenly recorded by Orchiston (1974) as being made of red argillite and interpreted by him as a “slate knife” (see below). Neither of

these discs has a drilled hole for attachment of a suspension cord. The disc from Pareora (D30.1134) is larger and sub-circular in shape (Fig. 8). It has been smoothed on both sides, one of which is relatively flat, the other slightly convex. It is also slightly wedge-shaped in cross-section and there is a prominent notch on the thinner margin, possibly resulting from a broken drill hole. There is no indication of wear along the thinner edge and therefore it does not appear to have been used as a cutting implement. It is likely both red argillite discs were made from natural flat pebbles.

There is also an intriguing record of nine “fish knives” being found on a farm “a few miles below Mount Somers” in about 1898–1899, which were apparently all of similar size and shape (Smith 1900: 430). Seven of these were unfortunately destroyed, but Smith





**Figure 5.** Minnow lure shank from Redcliffs, showing notches on the ‘tail’. Canterbury Museum E142.276

believed that three of the nine were made from “reddish-yellow chert”. Duff (1976: 11) also refers to these ‘knives’ and states that three consisted of a “reddish variety” of slate, one of which is the disc of red argillite (E138.336) from Ashburton Forks. Duff (1976) considered such ‘knives’ were used to flense the fat off moa skins, and possibly seals, but evidence that they were used for such a purpose, or indeed were knives at all, seems to be lacking.

Orchiston (1974) recorded six items from Canterbury in museum collections that he considered to be slate knives or ‘ulu’. One of these, from Moncks Cave (E158.346), was unable to be relocated and another from Pareora, in the Auckland Museum (AM 33844), could not be re-examined. Two others are the disc of grey argillite from Ashburton Forks and the disc from Pareora mentioned above. The only items that appear to show any indication of being used as knives are from Connolly’s Seadown, near Temuka (D75.49, D79.6609), both of which consist of flat, smooth-sided pieces of red argillite with a

single worn edge.

### **Chronology**

It is notable that all except one of the red argillite artefacts – the disc from Ashburton Forks – came from early sites along the Canterbury coast. Only a few of these sites have been securely dated, but available radiocarbon dates for Redcliffs indicate this large site complex was occupied in the fourteenth to early fifteenth centuries (Jacomb 2009), while those obtained for the Rakaia site point to occupation in the early 1300s (Jacomb 2005). Unfortunately the Pareora site has not been dated, but the fact that it contained abundant moa bone (Griffiths 1955) and also silcrete artefacts (pers. obs.), suggests that it was relatively early. Two dates from an oven at the Waihao River mouth (site J40/32) where Orchardson (1974) recorded a slate knife fragment, provide an age within the thirteenth to fourteenth centuries (Challis 1995). Red argillite has not been recorded from Panau (dated), Tumbledown Bay



**Figure 6.** Ornamental trolling lure hook, Rakaia River mouth (68 mm in length). Canterbury Museum E155.83

(dated), or Opihi River (undoubtedly late) and therefore it would appear that artefacts of this material were being manufactured mainly, if not exclusively, in the fourteenth to fifteenth centuries.

### **Discussion**

The distribution of red argillite artefacts in Canterbury would appear to be closely linked to the proximity of natural sources of the raw material and it is notable that no items have been recorded in North Canterbury, or in Marlborough with the exception of a minnow shank from Ship Cove (Orchiston 1974). Only one item was listed by Orchardson from Southland (Invercargill). Evidence of actual manufacture, in the form of slabs or sawn pieces, has so far been recorded only from Redcliffs Flat and adjacent Moa Bone Point Cave, which may indicate this large site complex was the main centre of production.

Disc pendants or amulets are very rare and confined to the South Island, although none are known from Otago or Southland

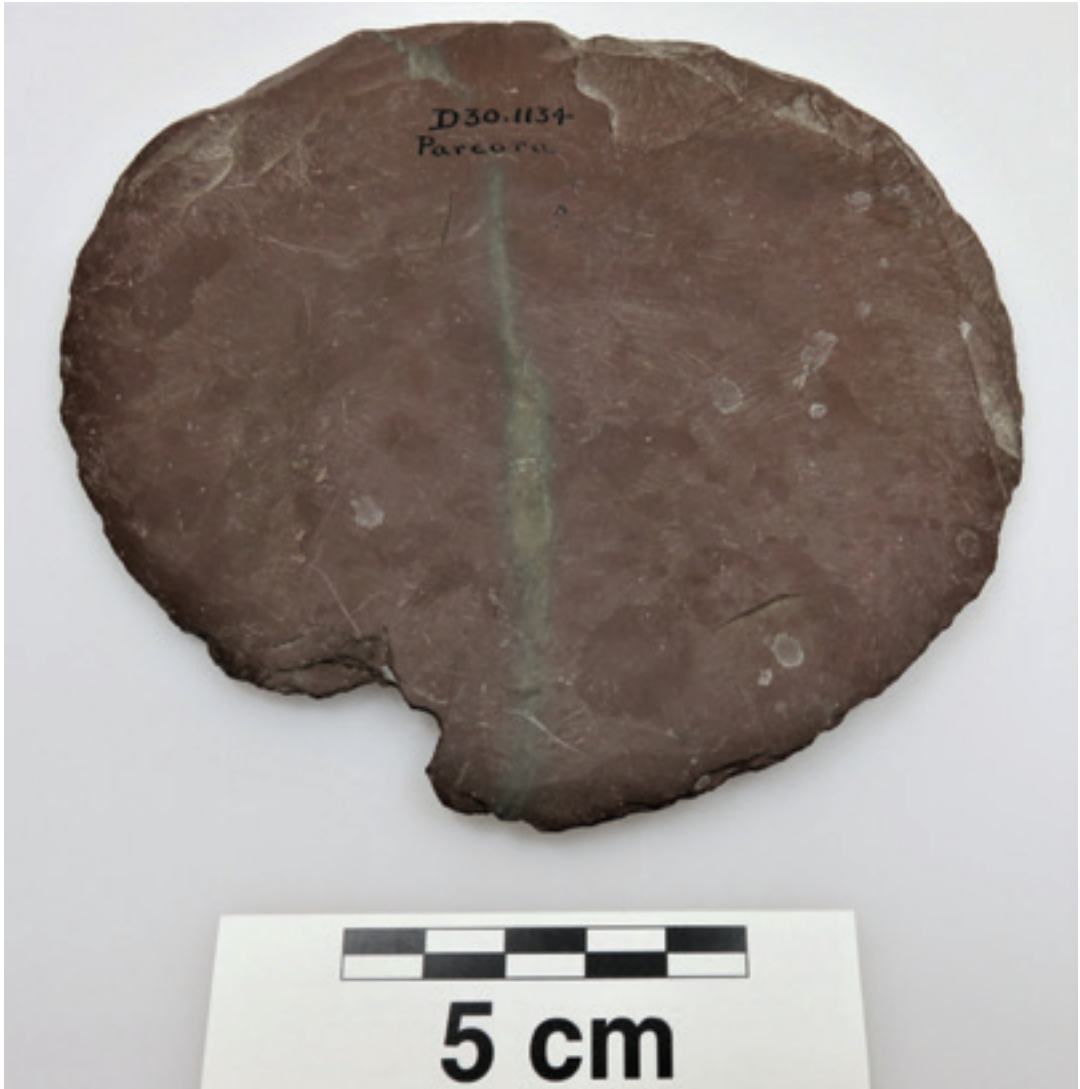
(Orchiston 1974). A slate disc (60 mm diameter) is recorded from Wairau Bar, along with an “unfinished specimen” made from black metasomatised argillite (Duff 1956: 128; Prickett 1999). Both of these lack a suspension hole. Several decorated discs made of serpentine have also been documented, most of which come from the upper half of the South Island, including a superb example from Banks Peninsula (Skinner 1974; Prickett 1999).

Although it seems odd that relatively brittle and easily split red argillite would be made into items such as adzes and chisels, it can be explained by the fact that the colour red (*whero* or *kura*) holds particular significance to Māori (Skinner 1974: 115; Holdaway 1984; Petrie 2011). Indeed, some items, like the decorated lure hook from Rakaia and polished discs, may have signified high social status. They could also have had some ritual or ceremonial importance and Holdaway (1984: 204) suggests these may have “either been cached with other ceremonial artefacts, or broken, possibly deliberately, as a mark of



**Figure 7.** Polished disc from Ashburton Forks. Canterbury Museum E138.336





**Figure 8.** Disc from Pareora. The notch on the lower edge may be a broken drill hole. Otago Museum D30.1134. Photo by author

their tapu status”. The Rakaia lure hook was found in association with three hog-back adzes, a serpentine reel and fragment of a red argillite ‘slate knife’ (Duff 1955: 147), but unfortunately there is no information on the context of other finds.

Kōkōwai or red ochre was also considered to have special status (Holdaway 1984; Petrie 2011) and it is possible that red argillite could have been used as a minor source of pigment

during the early period in Canterbury and Otago. Certainly the process of cutting and polishing red argillite would have produced a suitable red powder as a byproduct, although if the argillite was utilised as a pigment it seems more likely that the raw material would be crushed and ground. Currently, however, there is no evidence of this.

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**Table 1.** Details of red argillite artefacts from Canterbury. Site numbers are those of the New Zealand Archaeological Association Site Recording Scheme ([www.archsite.org.nz](http://www.archsite.org.nz)). Museum abbreviations are: CM = Canterbury Museum; OM = Otago Museum; SCM = South Canterbury Museum; AM = Auckland Museum. All dimensions in mm.

Locality	Site no.	No.	Museum	Artefact type	Colour	Length	Width	Thickness	Reference
Bromley	M35/323	E159.236	CM	minnow shank	weak red 2.5YR 4/2	45	22	20	Orchiston 1974
Redcliffs Flat	M36/24	E142.276	CM	minnow shank	reddish brown 2.5YR 4/3	80	17	6	Orchiston 1974
Redcliffs Flat		E158.795	CM	sawn piece	reddish brown 2.5YR 4/3	70	24	11	new record
Redcliffs Flat		E164.916	CM	broken chisel	reddish brown	66	31	15	new record
Redcliffs Flat		2008.1108.93	CM	piece	weak red 10R 4/3				new record
Moa-bone Point Cave	M36/25	E163.599	CM	partly polished slab	reddish brown 2.5YR 5/3	137	82	26	new record
Moa-bone Point Cave		19XX.1.2919	CM	adze flake	reddish brown	65	22	14	new record
Moncks Cave	M36/47	E158.346	CM	slate knife*					Orchiston 1974
Sumner	n/a	E139.26	CM	flake off cobble	reddish brown	67	51	9	new record
Banks Peninsula	n/a	E149.713	CM	chisel	weak red 10R 4/3	57	25	7	new record
Rakaia River mouth	L37/4	E153.21	CM	chisel	reddish brown 2.5YR 4/3	93	28	10	Trotter 1972; Orchiston 1974
Rakaia River mouth		E155.83	CM	trolling lure hook	reddish brown 2.5YR 3/4	68.5			Trotter 1972
Rakaia River mouth		E167.16	CM	worked cobble	reddish brown				new record

**Table 1.** (continued)

Locality	Site no.	No.	Museum	Artefact type	Colour	Length	Width	Thickness	Reference
Ashburton Forks	n/a	E138.336	CM	polished disc	weak red 2.5YR 4/2	71	69	5	new record #
Connolly's Seadown	K38/13	D75.49	OM	knife?	reddish brown 2.5YR 4/3	65.8	40.3	7.5	Orchiston 1974
Connolly's Seadown		D79.6609	OM	knife?	red	62.8	43.7	7.3	Orchiston 1974
Normanby	K39/3	E278 (151)	SCM	chisel	reddish brown 2.5YR 3/3	30	15	2	Orchiston 1974
Pareora River mouth	J39/29	33844	AM	slate knife*					Orchiston 1974
Pareora River mouth		D25.1678	OM	adze	reddish brown 2.5YR 4/3	117.3	60.5	17.3	Orchiston 1974
Pareora River mouth		D30.1134	OM	disc	weak red 2.5YR 4/2	98.9	86	14.2	Orchiston 1974
Pareora River mouth		D82.650	OM	piece off chisel	weak red 10R 4/2	36.8	21.7	6	new record

\*not re-examined

# illustrated by Duff (1976) but not properly documented