Security: The Keys and Locks

Vindolanda Research Reports
New Series - Vol. IV Fascicule II

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Introduction to the Small Finds Fascicules

The Vindolanda Trust has been conducting excavations at the site of the fort and settlement on the Stanegate road since 1970. The consolidated remains of both civilian and military structures are displayed on the ground, and the finds can be inspected in the Trust's Museum at Chesterholm, in the valley immediately below the fort. The full archive of the excavations is held in that Museum.

When the Trust was founded in 1970, it was the intention to complete the examination of the stone-built civilian settlement before turning to the associated fort, where Eric Birley had undertaken a series of excavations in the 1930's. The plans were disrupted in 1973 by the accidental discovery of the remains of six successive timber periods of occupation below the two or three stone built phases. The bulk of these earlier remains was preserved in anaerobic conditions, providing one of the richest harvests of archaeological evidence ever encountered in northern Britain, and it included over 2,000 ink and stylus documents.

The results of the long series of excavations are now being published in a series of Research Reports, of which this slim volume represents a Fascicule of Volume IV, the Small Finds. The Small Finds Volume has presented very considerable difficulties, due to the exceptional quantity of material that has been recovered, especially from the anaerobic levels. The programme of drawing the finds for publication has taken several years already, and it is still not complete. It was therefore decided not to delay the appearance of sections of that Report any further, and to publish categories of the Small Finds as and when they were ready. It does at least mean that those who are interested in particular categories of material will have the opportunity to acquire the relevant Fascicule at a moderate cost, rather than face a substantial sum for the complete volume in several years time.

The Vindolanda Trust is grateful to the many people who have played a part in the drawing of the finds, and especially to Mrs Patricia Birley, the Trust's Curator; to the staff of the Heritage Drawing Office and to Miss Alice Robertson.
VINDOLANDA and its neighbours on the ‘Stanegate’ frontier, before the construction of Hadrian’s Wall.

VINDOLANDA and its neighbours after the commissioning of Hadrian’s Wall.
Vindolanda fort and vicus, in the third century.

The excavated structures are shown in bold lines, and the site of those inferred form other evidence in outline only. The site of the large pre-Hadrianic forts of periods II to IV is indicated. The Stanegate road passes immediately to the north, separating the site from the parade ground and cemeteries.
The History of Vindolanda Research

Our knowledge of the Roman occupation of Vindolanda is based upon a variety of work undertaken at the site between 1715 and the present day. The first recorded 'excavation' was that of John Warburton in 1715, when he recovered the altar dedicated to the Fortune of the Roman People by Gaius Julius Raeticus, a centurion of the Sixth Legion Victrix (RIB 1684). His description of the excavation site is not very clear, but it was probably the commanding officer's residence within the stone fort.

In the early eighteenth century, the site was still covered in scrub woodland, as the first resettlement of the area by crofting families was beginning, encouraged by the new era of peace in this border land, after the Act of Union between the kingdoms of England and Scotland in 1707. The Northumbrian historian, John Wallis, reported (in his Natural History and Antiquities of Northumberland, 1769), that 'some years before' masons had been engaged in recovering stone from the site, and particularly from what was taken to be a temple to Diana at the western edge of the settlement.

The enclosure movement at the end of the eighteenth century resulted in severe damage to the then high-standing remains, particularly on the military bathhouse site, but by 1818 the bulk of the monument had been acquired by a sympathetic owner, the Rev. Anthony Hedley, and thereafter there was to be little further damage beyond accepted agricultural practice of drain digging and the occasional burial of fallen beasts.

Hedley conducted the first series of orthodox excavations between 1830 and his death in January 1835, concentrating upon the north and west gateways of the stone fort and the commanding officer's residence, in which he found the three great altars (RIB 1685, 1686 and 1687) set up by prefects of the Fourth Cohort of Gauls. He also made a partial examination of the military bathhouse, and discovered fragments of tombstones and rubbish deposits including footwear in the fields on the north side of the Stanegate road. His premature death saw the dispersal of his records, and only his letters to the historian John Hodgson, and the latter's field note-books, have left a thin record of what had been achieved.

The land remained in the estate of Hedley's eldest daughter until 1863, when it was acquired by John Clayton of the Chesters, and in due course chance agricultural activities revealed the Brigomaglos tombstone (circa 1878, in a field to the north of the fort), and the Vicani Vindolandenses altar (RIB 1700, found in 1914 near the well on the western fringes of the vicus). There was to be no further excavation until Eric Birley purchased the estate from the Clayton family in 1929.

Eric Birley's excavations, between 1930 and 1937, established a firm chronology for the occupation of
Vindolanda. He located traces of pre-Hadrianic occupation, which established the foundation of the site before the construction of the Wall, and he re-examined both the north and west gateways before turning his attention to the headquarters building. Based on the new chronology for the Wall periods established as a result of the Birdoswald excavations, he believed that the three phases of construction on the site of the stone fort represented major building work in the early third century, the early fourth century, and post AD 367.

The outbreak of World War II, and the post-war demands of academic and administrative work, prevented any further excavation by Eric Birley at Vindolanda, and he sold the site to its tenant farmer in 1950. Between 1959 and 1969 the present Director undertook a variety of work in the civilian settlement, including an examination of buildings then lying in the unscheduled field to the south (a part of Huntercrook farm), as well as the south gate of the stone fort.

In 1970 Mrs Daphne Archibald purchased the Codley Gate farm, and presented the 'camp field' to the newly formed Vindolanda Trust, which has been engaged in full-time research on the site since 1971. In the 1970's a major part of the civilian settlement was examined, together with the underlying stone structures, now known to form a part of a short-lived Severan fort or annexe. The superimposed remains of multiple pre-Hadrianic timber-built forts were located beneath these stone structures, preserved in anaerobic conditions.

In 1980 Paul Bidwell examined the barracks in the north-eastern segment of the stone fort, in an excavation jointly sponsored by the Vindolanda Trust and the Ancient Monuments Department of the Department of the Environment. A much refined picture of the complicated chronology of the third and fourth century occupation was obtained.

Since 1985, the Vindolanda Trust has been engaged almost entirely with the examination of further parts of the timber-built forts lying beneath the stone structures to the west of the stone fort, and the recovery of many hundreds of ink documents has shed invaluable light upon the activities of the garrison before the construction of Hadrian's Wall.
The Dating of the Material

In the course of the past 26 years, sufficient evidence has emerged to permit the construction of a tolerably reliable chronology for the successive occupation phases of the area to the west of the walls of the late stone fort, itself dated to the early decades of the third century (Bidwell 1985). In the catalogues which follow, each find is identified by its unique context number, which relates to its find spot as recorded in the principal excavation archive, and this number is followed by an indication of the Period of occupation in which it was found. Finds from Bidwell’s excavations within the late stone fort are prefixed with the numbers awarded to them in the figures of his Report (Bidwell 1985). The current dating of the periods is given below, together with the principal evidence used in those calculations.

PERIOD I AD 85-90 All the material from this context was found in the western ditch AD 85-90 of the primary fort, sealed below the deliberate packing and the floors of the subsequent enlarged Period II fort. The suggested post-Agricolan date may be a little late, because the only possible dating evidence came in the form of a deposit of unused samian ware from La Graufesenque, which included the stamps of potters whose wares are found at Pompeii as well as a number whose period of production appeared to post-date AD 79 by a few years. Dragendoff form 29 was almost entirely absent.

PERIOD II AD 90-97 The latest coin in this context was a slightly worn sestertius of Domitian, AD 87. The strength report of Coh. I Tungrorum probably belonged to this context.

PERIOD III AD 97-105 This is the most closely dated of all the periods of occupation. The nine coins closed with three issues of Nerva, AD 97, one of which was worn, but the deposits included a writing tablet referring to the governor of Britain, Neratius Marcellus, known to have been in office in January 103, and another document, with consular dates for 103 and 104 and subsequent records, suggested continued occupation into the late spring of 105. The garrison in this period included Coh VIII Batavorum, and there were no further references to that cohort from material in later contexts.

PERIOD IV AD 105-120 There were numerous coins of Trajan in this period, closing with an unworn Via Traiana issue of AD 112-114. A writing tablet contained the consular date for AD 111. Timber used in the foundations of the buildings included material dated by dendrochronology to AD 104. Writing tablets included reference to legionaries in occupation, in contexts best interpreted as preliminary surveys for the construction of the Wall.

PERIOD V AD 120-140 Material from the floors of buildings of this period included a slightly worn
dupondius of Hadrian, AD 119-121. The occupation appeared to be relatively lengthy, judging by the worn and repaired floors.

PERIOD VI AD 160-180 The bulk of the material from this context was found in the two western ditches of what is presumed to be a late Antonine fort. The ditches were dug through the floors of the Period V and IV structures, but were later back-filled and sealed to provide for later second century construction, associated with a military annexe. The latest coin from this deposit was a worn as of Faustina I, AD 141+.

PERIOD VIA AD 180-200 There was no secure dating evidence from the floors of the timber annexe buildings erected over the sealed Period VI ditch, and the given date is no more than an approximate guide, taking account of the subsequent development.

PERIOD VIB AD 200-213 The timber annexe of Period VIA was replaced by a series of stone-built structures enclosed by a clay rampart and ditch, which was firmly dated to the Severan period by at least twelve unworn denarii of the House of Severus. The entire complex was soon deliberately demolished, before the construction of the military bath-house associated with the late stone fort associated with the Fourth Cohort of Gauls, and the civilian settlement.

PERIOD VII AD 213+ This period saw the construction of the stone-built civilian settlement outside the walls of the late stone fort. How long the bulk of that settlement survived is uncertain, but it is evident that it was principally of third century date. For the dating of the various alterations within the fort, see Bidwell 1985.

PERIOD VIII AD 300-400+ The material from this context came from the western ditch of the late stone fort, and the bulk of it should represent the final accumulation of rubbish before the garrison abandoned efforts to maintain the ditch. The most obvious late fourth century pottery types were little in evidence, and a closing date for the deposits may have been nearer AD 350 than 400.
Introduction

Every society has always had problems with security, even in peacetime, and the Roman army responded to the challenge in a number of ways. Fort walls, ditches and guarded gateways might ensure that there could be no unauthorised access to forts, and armed sentries could be provided 24 hours a day to guard the Chapels of the Standards in the Headquarters Buildings, in which the principal regimental funds were deposited. But theft and petty pilfering were as much of a problem then as now, and individuals had to take steps to protect their property from colleagues. Comparatively humdrum items, including pottery, tools and military equipment could be marked with the owner's name or some other recognisable symbol, and the frequency of such markings on finds from Vindolanda suggests that there was a tendency for items to be misappropriated. The burial of coins and plate in secret locations was a solution for valuables which could not be deposited with the regimental bank, and this might provide temporary safety, albeit with some obvious risks. But good locks on boxes and doors were the most sensible precautions available.

Roman technology was responsible for substantial improvements to existing lock designs, which had hitherto been based on what has become known as the Egyptian system - essentially all wooden locks, whose internal tumblers were raised by a special lifter. Wooden locks were replaced by metal locks and keys, usually made of iron, and the introduction of wards or projections around the key-hole, inside the lock, improved security. The Romans were also responsible for the invention of the very small keys, often attached to rings, for wearing on a finger, and also the western form of the padlock. No Roman locks could withstand the attention of a capable thief, but the same could be said of the far more complicated modern locking systems. Vindolanda has revealed numerous examples of locking systems, although in most cases it is only the keys which have survived, and amongst the collection is an example of the much older Egyptian lock.

In producing a report on the Vindolanda locks and keys, tributes must be paid to the work of many scholars, but especially to W. H. Manning and his study of the Romano-British ironwork in the British Museum (Manning 1985). He commented (p88) that keys of various types have been amongst the commonest finds from Romano-British sites, and that unlike most common finds, they have been published in some numbers. The Vindolanda examples have a contribution to make, in part because of their quantity, and in part because the majority can be fairly accurately dated. Perhaps the most striking information concerns the longevity of some key types, coupled with the considerable variety in use at any given time.
A number of people have rendered valuable assistance in the production of this report, and special thanks must be given to the Trust's senior staff, who have provided easy access to the vast Small Finds catalogues and storage systems; to Bradleys, master locksmiths of Blyth, Northumberland, who inspected and discussed a number of the complicated items; to Dr Vera Rupp, of the Friedberg Museum, who produced a modern wooden locking system from Morocco for inspection; and to Frank Jellis, who produced a replica of the largest Vindolanda wooden lock, in working order. Inspection of the fine collections of Roman keys in the Museums of the German *limes* was also most valuable.

**Key Report**

**Barb-Spring Padlock Keys**

This is one of the most common key types from Roman Britain. The simple concept and design - and presumably its associated locking mechanism - ensured wide usage throughout the Province. The keys are L-shaped and consist of a long stem or shaft with a short bit. The bit has one or more (though usually no more than two) square or shaped holes cut into it. The bow or loop is usually made by rolling the end of the handle, and small individual variations are present upon most examples. All of the Vindolanda keys of this type are made from iron, and they are first found in Period V. This key type is thought to be present in Britain at the end of the Iron Age, with one of the earlier examples from Bigberry in Kent.

1 **Fig.1 1601 Period VI.** Length 160mm. Weight 31gms. This example is in excellent condition and is complete. Full eye/circular hole at the handle end, and complete square shaped hole at the lock end.

2 **Fig.1 1660 Period VI.** Length 158mm. Weight 42gms. A long handle that is turned into a loop at the top, and a single but complex design for a hole in the lock end of the key. Like all other examples, the lock end is at a right-angles to the rest of the key, and is formed by bending the strip of metal, then punching or cutting the hole into it.
3 Fig. 2 3779 Period VIII. Length 140mm. Weight 31gms. A near complete example. The strip of metal is looped at the top and folded at a right-angles at the bottom for the part of the key that is inserted into the lock. Only part of the key remains at the bottom, revealing traces of one square hole.

4 Fig. 2 3899 Period VI. Length 143mm. Weight 32gms. The strip of the handle is rolled into a complete loop. The normal turning of the strip into a right-angle, into which a hole is cut for the lock end of the key, is missing.

5 Fig. 3 4637 Period V. Length 110mm. Weight 28gms. A complete example with small amounts of corrosion. An eye or circular loop at the head and two square holes in the base of the shaft at the lock end.

6 Fig. 3 4463 Period VI/VIII. Length 120mm. Weight 319gms. A complete bow at the loop of the handle, and three square holes at the lock end of the key. An excellent example of this type of key, in good condition.

7 Fig. 4 3753 Period V. Length 85mm. Full eye at the handle end, and one complete square hole at the lock end. Two other holes suggested, but do not remain complete.
8 Fig.4 4242 Period V. Length 96mm. Weight 14gms. In perfect condition. A large almost oval bow at the head of the key, and three square holes at the base to be inserted into the locking mechanism.

Not Illustrated 3444 Period VI. Length 125mm. A heavily corroded example, and only a small amount of the eye/circular hole remains.

Not Illustrated 3650 Period VI. Length 140mm. A complete eye/circular hole at the handle end, and the shaft remain in this example. The other end of the key is missing.

Not Illustrated 2518 Period VII. Length 151mm. This key is of the normal type, but it has corroded into two separate sections, and only part of the bit remains. See Bidwell 1985.

Slide Keys

Manning classified the slide keys in two main categories, types 1 and 2. Type 1 has been further divided into two sub-types demonstrating examples with either L-shaped bits or Z-shaped bits. The Z-shaped bits have an extra tooth on the shaft of the key, giving the teeth the characteristic Z-shape. The locks that were operated by both those keys were elaborate in their mechanism, having a number of tumblers. Type 1 is the more simplistic of the two, usually large, being associated with the more heavy locking systems. They are most commonly made from iron, like all Vindolanda examples. In dating terms, the Vindolanda slide key types range from the later first century to the fifth century AD, showing them to be one of the most consistent types of key on the site.

Slide Keys Manning Type 1

9 Fig.5 1091 Period VI/VIII. Length 176mm. Weight 163gms. This example is in excellent condition. The handle end of the key has a complete bow set into it, and the other end of the key has four teeth. The broad handle becomes narrow as it progresses down the shaft towards the teeth.

10 Fig.5 4375 Period VI. Length 119mm. Weight 98gms. Similar in quality to no.9 above. The handle is
broad and flat with the characteristic bow inserted into the top. The shaft becomes narrow only 20mm from the teeth of the key.

11 Fig. 6 82 Period VII. Length 134mm. Weight 140gms. This example is partially corroded. The handle end has a complete bow in it, and the key has three large teeth, the largest of which has a small hole inserted into it. The broad handle becomes narrow midway down its length.

12 Fig. 6 681 Period VII/VIII. Length 133mm. This heavily corroded example shows the characteristic bow in the broad end of the handle, and a narrowing shaft approaching the head of the key, which is missing.

Slide Keys Manning Type 2

This variety is much more common at Vindolanda than type I. They are usually smaller that their type I counterparts and have a more complex teeth arrangement to go with them. They can be found in bronze or iron, but the Vindolanda keys are all in iron.

13 Fig. 7 2484 Period VII/VIII. Length 67mm. A heavily corroded key, the bow being corroded away from the shaft completely. The teeth are so heavily corroded that it is impossible to tell how many were present, but from the size perhaps 3 can be inferred.
**14 Fig.7 3904 Period II.** Length 60mm. Weight 25gms. Example in excellent condition. A large bow set into the broad top of the handle and five teeth at the other end.

**15 Fig.7 061 Period IV.** Length 73mm. Weight 64gms. A well worn example. A large bow set into the broad top of the handle and four basic teeth, of which two are subdivided into two separate parts (as seen on the illustration).

**16 Fig.8 5063 Period III/IV.** Length 53mm. Weight 48gms. A heavily corroded example, still attached to the lock mechanism. Part of the bow remains intact and the key teeth are corroded into the lock mechanism, holding them together.

**17 Fig.8 5739 Period V.** Length 78mm. Weight 74gms. In excellent condition. Has a large complete bow and five teeth, which are all intact.

**18 Fig.9 5984 Period VI.** Length 66mm. Weight 84gms. A well preserved example. The large bow is 80% complete and the key has all of its three teeth surviving. Unusual X marks are to be found upon the rear of the teeth and the bend in the handle joining the teeth to the rest of the key.

**19 Fig.9 5822 Period V.** Length 83mm. Weight 110gms. In excellent condition. Has a large complete bow and seven teeth all of which are intact.
Lift Keys – T-shaped

Following Manning's classification, lift keys are divided into two categories. The T-shaped lift keys are described by Manning as being the less common of the two types, and this is certainly to be seen in the Vindolanda collection. Over twice as many L-shaped lift keys have been identified in the archive. The Vindolanda examples are exclusively made of iron and are heavy duty in their design and weight. All Vindolanda examples have only two teeth, although four teeth examples have been found elsewhere, and all keys have an eye at the top of the handle. The T-shaped lift keys are dated from Period IV onwards, and the Vindolanda collection has seven examples.

20 Fig. 10 165 Period VII. Length 235mm. A badly corroded example. The characteristic hole is set at the top of the flat part of the handle, and the handle itself turns from flat to circular 70mm down from the hole towards the teeth.

21 Fig. 10 3624 Period VI/VII. Length 223mm. A nice example of this variety of key and in good condition. Has both teeth present but only 50% of the loop at the top of the key remains.

22 Fig. 10 6389 Period VI. A Length 235mm. Weight 87gms. A badly battered example but complete. Both
teeth remain intact and the long shaft ends in a complete loop.

Not Illustrated 395 Vicus U/S. Length 175mm. Weight 72gms. The loop is almost intact, but due to corrosion one of the two teeth has been separated from the remainder of the key.

Not Illustrated 982 Period IV. Length 113mm. A corroded example of this type of key. The loop is no-longer complete due to extensive corrosion, and only one of the two teeth remain intact.

Not Illustrated 1684 Period VII (Vicus). Length 40mm. Only the corroded remains of the teeth are present and these are in several parts. The largest of these segments is 40mm in length.

Not Illustrated 3392 Period VII (Vicus). Length 91mm. Only the teeth end of this key remains, and this is very heavily corroded. At 55gms, this is a very sturdy example, and both teeth remain intact.

Lift Keys L-Shaped

L-shaped Lift Keys are the more common of the two categories, although they serve the same function as the T-shaped types. Most of the Vindolanda examples have two teeth, corresponding with the findings of Manning 1985. The handle form is very similar to that found upon the T-shaped variety, and has an eye set into it. There are twenty examples of this key in the Vindolanda collection, dating from Period II onwards, with a concentration in the Antonine Period.

23 Fig.11 823 Period VIIB. Length 116mm. Weight 75gms. A worn example, with two teeth which show signs of extensive wearing, and a complete loop.

24 Fig.11 2190 Period VI. Length 110mm. Weight 58gms. A well preserved example, with four teeth still
attached, suggesting a more complicated lock system than many other examples found from Vindolanda and elsewhere in the British Isles, most of which tend to be the two or three teeth variety. The loop is more of an eye set into the flat wide head of the key.

25 Fig.11 1039 Period VII/VIII. Length 130mm. Weight 74gms. Example in excellent condition, with three teeth and a complete loop. The shaft is half piped, becoming flat towards the loop.

26 Fig.12 3887 Period VII. Length 101mm. Weight 30gms. A well preserved example, with three teeth and a complete loop. The shaft is fairly regular throughout its length and is more piped than flat, and it has a crossed panel design half way between the teeth and the loop, which can be seen clearly in the illustration.

27 Fig.12 3524 Period IV. Length 91mm. Weight 41gms. A well preserved example, with two teeth and a complete loop. Typical in the design of this variety.

28 Fig.13 3629 Period II. Length 98mm. Weight 25gms. A well worn example, with three teeth and a circular eye set into the flat shaft head of the key.

29 Fig.13 3400 Period VI. Length 126mm. Weight 64gms. A well worn example, with three damaged teeth and a complete loop. Standard example of its type.
30 Fig.14 4097 Period VI. Length 114mm. Weight 57gms. A well preserved example, with two teeth and a flat head into which is inserted a circular hole or eye. An unusually long piped section of the shaft, and a notched flat head makes this key a variant to the standard design.

31 Fig.14 4160 Period III. Length 120mm. Weight 82gms. A well preserved example, with three teeth and a complete circular hole or eye in the flat part of the shaft. The shaft of the key is half flat and half piped. This example has a simple but distinctive decoration involving two crossed panels and one blank panel on the flat part of the shaft, as seen in the illustration.

32 Fig.14 4361 Period IV/V. Length 135mm. Weight 70gms. A well preserved example, with three teeth and a complete circular eye or hole in the flat part of the shaft. The shaft is half flat and half piped.

33 Fig.15 5565 Period III. Length 142mm. Weight 144gms. A battered or well used example, with two teeth and a circular hole or eye set into the flat head of the shaft. The shaft is both piped and flat, and has been bent at the point where the shaft narrows, almost certainly while trying to force a lock.

34 Fig.15 5047 Period VI. Length 118mm. Weight 70gms. In excellent condition. A complete loop which is folded with the flat part of the handle, and three teeth.
35 Fig.16 494 Period II. Length 143mm. Weight 64gms. A well preserved example, with three teeth and a complete circular eye or hole. The shaft is half flat and half piped.

36 Fig.16 5786 Period V. Length 97mm. An ornate example of this variety of key. The teeth end of the key has been completely corroded away, but the handle shows signs of a cross decorative pattern.

Not Illustrated 6471 Period VI. Length 105mm. A battered example. Only one of the teeth remain and a complete loop. The loop is achieved by bending the metal 'flat shaft' section of the key.

Not Illustrated 2400 Period VIII. Length 141 mm. Weight 39gms. A well preserved example, with two teeth and a complete loop. The shaft is half flat and half piped. (Illustration to be found in Bidwell 1985, fig.54, 106).

Not Illustrated 378 Vicus U/S. Length 171mm. Weight 92gms. A long narrow shaft which is heavily corroded, with two teeth, both of which are intact.

Not Illustrated 5539 Period VI. Length 113mm. A badly corroded example, with the loop mostly missing and the two teeth no longer attached to the rest of the key shaft.
Not Illustrated 5752 Period VI. Length 134mm. Weight 90gms. In excellent condition. All three teeth remain, and the eye or hole is formed by looping the metal which forms the broad part of the handle.

Not Illustrated 6020 Period V/VI. Length 132mm. A well worn example. Only parts of the three teeth remain but the rest of the key is otherwise intact. The eye is formed once again by looping round the metal which forms the shaft of the key, rather than punching a hole through the handle.

Latch Lifters
Described by Manning as 'the simplest form of key, and probably the most ancient' (Manning 1985, 88), the origin can be traced far back into Iron Age Europe. The form consists of a long flat piece of metal, usually iron, with a hole at one end, and the stem sharply turned up at the other end. This form is simplistic and standardized, offering the minimum of security.

Not Illustrated 381 Vicus U/S. Length 59mm. Very badly corroded with only the loop and a small segment of shaft remaining.

Not Illustrated 2898 Period VII. Length 95mm. A heavily corroded example without much remaining beyond the loop. The loop is intact but also heavily corroded.

Lever Lock Keys
This key is very modern in appearance, with the bit set into one side of the stem and a bow at the top of the stem, the other end of the stem either ends in a piped fashion, or continues as a pivot. Front and rear edges of the bit were forwards mounted on the front or back faces of the lock (Manning, 1985,94). As with the Manning example, in many cases the teeth or bit are barely traceable due to corrosion. This key has yet to appear in the early Periods of occupation at Vindolanda, and the first example came from Period VI.

37 Fig.17 1663 Period VI. Length 89mm. Weight 31gms. This bronze key has a piped stem and round bow. Traces of seven teeth remain on the bit, but are so faint they have not been illustrated.

Not Illustrated 384 Period VII/VIII. Length 54mm. Weight 13gms. Heavily corroded but still intact. A large loop at one end of the key, and traces of at least one of the teeth at the corroded other end.

Not Illustrated 2194 Vicus VII. Length 78mm. Fragmentary remains only with the shaft and part of one tooth present. The stem is square rather than piped.
Key Rings

Roman key-rings are small keys in their own right, rather than the modem concept of just a circular piece of metal to which separate keys are attached in a bunch. Normally they are quite delicate, and are commonly made from bronze rather than iron, although some examples in iron do exist. Listed in this section are some excellent examples of this variety of key, showing its general form, and variations of the 'bit' end of the key, taking into account variable teeth numbers or bit shapes. Some of the key-rings have bits that resemble the end of padlock keys and others lever lock keys. The key-ring key or 'finger-key' as described by Manning has been categorized into the bit type that it represents (Manning, 1985, P95, fig.064, lever lock key from London), rather than as a separate entity of its own. This has not been attempted here as the Vindolanda collection has a number of examples of this key-type and they show enough variety in their design to justify being given separate consideration in this report. This key type has been found between the Periods VI to VIII, and there are six examples in the collection.

38 Fig.18 719 Vicus VII. Bronze key-ring with 50% of the circular section of the key surviving intact, into which there is set a hole (as seen in the illustration). The majority of the key-bit remains intact.

39 Fig.18 962 Period VI. This example has a complete projecting key-bit, consisting of four teeth, two on either side of the bit. Only 65% of the ring section of the key remains.

40 Fig.18 2691 Period VIII. Annular bronze key-ring with projecting key bit for use with a tumbler lock.

41 Fig.18 77 Vicus VII. Bronze penannular key-ring with a projecting rectangular bit for use with a tumbler lock mechanism. This example is heavily corroded and damaged.

42 Fig.18 777 Vicus U/S. This fragment is twisted badly out of shape, and only has 40% of the circular section of the key remaining.

43 Fig.18 4140 Period VII/VIII. Weight 3gms. Diameter 54mm. Bronze finger-ring with projecting key bit for opening a tumbler lock. This example is in excellent condition, and complete.
Fig. 18. Key Rings nos 38-43
Unclassified Objects

This section includes the items which are difficult to place into the Manning system of classification or to identify with counterparts. This process has also been hindered as there is no comprehensive study of the identification of non-iron objects in the lock, key and bolt category. Recognition or identification is further complicated as in some cases only the shaft or handle has survived intact.

44 Fig.19 3643 Period VI/VII. Length 43mm. An ornate handle, unusual in its triangular shape and square hole, where there is normally the bow. The metal shaft has been snapped off and is twisted at the point of separation.

45 Fig.19 6409 Period VIA/B. An ornate key handle made from bronze. Similar examples come from South Shields (Lindsay Allason-Jones & Roger Miket, 1984, fig.347 and 344). Most examples like this do not have surviving shanks and key bits.

Fig. 19. Unclassified Objects nos 44-45
Here there are three examples of locking mechanisms which are rare in comparison to the other key-types. All examples are in bronze, and are robust in their design. In the 1988 Corbridge report one such key has been described as 'Rectangular lock-bolt' (Bishop and Dore 1988, p167, fig.79), complete with a handle-like protrusion away from the key or bolt bit. Other good published examples can be found in the report on Roman Aldborough (Bishop, 1996, p77, fig.42) and again, the key has been described as a 'copper alloy lock-bolt'.

46 Fig.20 5851 Period V. Length 91mm. An almost complete copper alloy lock-bolt. This example is particularly unusual due to its two handle-like protrusions. Six of the cavities in the bit are of a simplistic square shape, with a larger rectangular cavity near the sloping end of the key.

47 Fig.20 6046 Period VI. Length 17mm. Only partial remains of this key/lock-bolt are present. The 'bit' part of the key has sustained damage in the past and is more intricate in design than the other examples from Vindolanda. A similar design in 'bit' can be seen in the example from Roman Aldborough (Bishop 1996, p77, fig.42).
48 Fig. 21 748 Period U/S. Vicus Length 45mm. A possible key or copper alloy lock-bolt. Only a small amount of this example remains intact.

49 Fig. 21 3421 Period VI. Length 94mm. An almost complete example of the key/lock bolt. This example is again made from copper alloy and the bit resembles that of a barb spring padlock key.

Fig. 21. Lock Bolts, nos 48-49
Bone and Wood Latch Lifters

The Bone latch lifter is a common find in Roman Britain, and Vindolanda has proved to be no exception to the rule. Other examples of 'bone latch keys' can be found at South Shields (Allason-Jones & Micket, 1984, p39, fig.22) and Corbridge (Bishop & Dore, 1988, p206, fig.9 & 10). The wooden variety of this key is not usually found, but this is due to preservation conditions more than to any other factor. Some excellent examples of this variety of key can be found outside the Vindolanda collection, most notably those on display in the Saalburg Museum in Germany, including a reconstruction of how the wooden 'key' might have worked (see wooden lock housing/lock).

Illustrations of the best examples are provided, and for convenience they have been divided into objects of bone and wood. The wooden objects only survive in the earlier levels of occupation at Vindolanda, because of the exceptional environmental conditions that prevail there, so a bias of dating for those objects to the early levels is shown.

Bone 'Latch Lifters'

50 Fig.22 6091 Period V. Length 123mm. This object is complete and has three teeth. The area around the handle is worn smooth, as is the hole or 'eye' within the 'handle'.

51 Fig.22 4249 Period V. Length 94mm. This example has only the three teeth remaining, none of which show any sign of the wear and tear that is customary from use in a lock or from a key.

52 Fig.22 6587 Period VI. Length 55mm. This incomplete object has three teeth remaining, each placed about between 15 and 20mm apart.

53 Fig.23 6495 Period III. Length 133mm. This complete example has the characteristic three teeth and handle with the 'eye'. Unlike some of the other examples in the collection, this 'key' shows minimal signs of wearing.

Fig. 22. Latch lifters in bone nos 50-52
54 Fig.23 W485 Period V. Length 114mm. This example is unusual because it has survived complete. As normal, it has three teeth, and the handle is complete with its 'eye' in a central position.

55 Fig.24 W59 Period III. Length 120mm. This large example is very similar to those in bone. It has three teeth remaining, and seems to have broken off at the handle end of the 'key'.

56 Fig.24 W653 Period IV. Length 104mm. This small example has only two teeth, and sports an unusual design of handle with the hole or 'eye' missing.

57 Fig.24 W582 Period III. Length 140mm. A complete example. This 'key' is unique in both the number of teeth and the design of the 'handle'. It is on this 'key' that we can clearly see that the end with the shaped hole in it is certainly a handle of some type, and not a fitting to be attached to something else.

58 Fig.25 W214 Period V. Length 75mm. A badly damaged object with only two teeth surviving intact and the other broken off. No handle remains.

59 Fig.25 W151 Period III. Length 50mm. The very end of this 'key' is all that remains, with two teeth surviving.

Fig. 23. Latch lifters in bone nos 53-54

Fig. 24. Latch lifters in wood nos 55-57

Fig. 25. Latch lifters in wood nos 58-59
Not Illustrated 5135 Period III. Length 141mm. This is a large example, now in two sections, with only part of the handle and a placement for three teeth showing on the 'key'. The handle is the characteristic shape but the place where one would expect to find the 'eye' is missing. The thickness of this 'key' is the same as for the bone varieties, and would not warrant its use in a sturdy manner.

**Initial Data Analysis and Conclusions**

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th></th>
<th>PERIOD</th>
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<tr>
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<td>1</td>
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<tr>
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Five basic conclusions can be drawn from the table:
1. With 20 examples, the L-shaped lift key is the most frequently found at Vindolanda.
2. Both L-shaped lift keys and slide keys (Manning Type 1) have the longest usage in the Vindolanda record, with examples from the beginning of the second century to the start of the fifth century.
3. Period VI has produced the greatest quantity of keys.
4. So far, the first period of occupation has yet to produce any evidence for the use of keys on the site.
5. 7 out of the 11 categories of key are not yet represented in the pre-Hadrianic era of the site.

**Analysis of Results**

The information presented in this table helps us answer some of the immediate questions that the collection poses. The complete lack of evidence for the use of keys in the first period of occupation at Vindolanda is most likely due to the limited extent of excavation in the very earliest levels of the site in comparison to the later levels. The extent of the excavation in Period I has so far been restricted to the western fort ditch of the Period I fort. The five unstratified keys in the table all come from the Vicus area, and so may be dated to the very last levels of occupation on the site, probably Period VII or VIII.

In chart 1 below, Period VI shows the greatest variation of locking devices in use at anyone time at Vindolanda.
In this Period, every key variety except the latch lifter is in use. This is most interesting as it displays the great variation of key-type available to the occupants of Vindolanda during the same Period of occupation. This must be balanced with the length of Period VI on the site. In the table Periods VI, VIA & VIB have been grouped together, giving a total of 50 years of occupation.

Although chart 1 illustrates clearly the dominance of Period VI in the Vindolanda dating, we can also see the steady comparison between Periods V, VII and VIII, highlighting the fact that in these periods we continue to see a great number of keys in the archaeological record.
What is made most clear in chart 2, is that at 20, the L-shaped lift key is the most frequently found in the archaeological record at Vindolanda. This fact would seem to support the mounting evidence from across Britain that during the Roman period that L-shaped lift keys were a widely used commodity, perhaps indicating a success story in the availability of this variety of key and associated locking mechanisms. This key design is one of the more simple, and was easy to make, even when including into its design up to five teeth on the bit. This chart also clearly shows the lack of evidence for intensive use of the T-shaped lift key. The reason for this may be the weight and unwieldy nature of this key, making it a far less attractive option in comparison to its counterpart.

The L-shaped lift key-type would appear in Table 1 to be the most consistent form of key to be found on the site, appearing as it does with varied frequency from Period II to Period VIII, over a minimum time-span of 310 years from AD 90 -AD 400 (if we were to take AD 400 as a convenient termination date of Period VIII). Slide key Manning Type 2 also shares a similar time period, although with far less frequency and gaps in the table when we have no evidence for this key's use. Perhaps the most striking point is that even taking into account the variation of the Vindolanda collection, with no less than 11 basic varieties of key present, only three of those key-types are represented in the pre-Hadrianic levels of the site. These are the slide key Type 2, T & L shaped lift keys. The explanation for this is hard to find. The lack of an extensive use of the latch lifter is also an interesting factor. On a military site such as Vindolanda it is perhaps not surprising that such a simple device as a latch lifter was not employed as heavily as it could have been. Security is barely an option with such simple locking devices, and the variety of keys so far implies that the people of Vindolanda were fairly security conscious.
This chart takes the three most frequently found key-types in Vindolanda's archaeological record and compares the numbers found of each variety in the different periods of occupation. As we can see from this chart, the longevity of the L-shaped lift key is clearly shown in comparison to the next most frequent key-type. However, the Barb-spring padlock key is only surpassed in numbers in Period VI, otherwise it would appear that it is as equally represented as in Periods VII and VIII, and clearly dominant in Period V. The reason for these fluctuations is not clear. No one variety is much more resistant to the effects of time than another, so we may presume that in some way the data presented show us the change in popularity of different locking devices and mechanisms in relation to each other. The sample is not large enough for this to be done with any degree of accuracy, so speculation as to what this may be telling us will have to remain just that for the present.
LOCKS REPORT

Bronze 'Lock-Pins'

Bronze 'lock-pins' are common finds on many Roman sites in Britain, yet our understanding of their exact purpose remains nebulous. Curle, in his report on the excavations at Newstead in 1911, was one of the first to associate the objects defined as 'lock-pins' with any form of locking mechanism, "A bronze bolt for fastening a lock plate" (Curle 1911, plate LXXVIII, no.10). Other explanations range from Kenyon's description in the Jewry Wall excavations knob, possibly a handle of box or drawer' (Kenyon 1948, fig.88, no.23) to other descriptions of possible decorations from wagon fittings (Webster 1958, p94, fig.8). More recent reports such as that on Bewcastle and Old Penrith, by Paul Austen, have supported the theory that the objects are connected to locks. The Vindolanda collection of these objects have been classified within the 'lock' section of this fascicule, albeit without conviction.

60 Fig.26 385 Period U/S. Weight 19gms. Diameter 30mm. Length 19mm. Bronze 'lock-pin' with a large flanged circular head and tall central knob. In excellent condition and with a cavity on the underside into which the square shaped shank would be fitted.

61 Fig.26 643 Period U/S. Weight 12gms. Diameter 22mm. Length 20mm. Bronze 'lock-pin' with a circular head and central knob. This example is again in excellent condition, and the underside also displays the cavity into which the shank would be fitted.

62 Fig.26 34 Period U/S. Weight 7gms. Diameter 12mm. Length 11mm. A copper alloy 'lock-pin' with a wasted circular head, no remains of the shank survive.

63 Fig.26 2366 Period U/S. Weight 10gms. Diameter 22mm. Length 9mm. A bronze 'lock-pin' in good condition. This example distinguishes itself from the others in the Vindolanda collection due to its lack of the 'knob' feature: instead a small hole is inserted into the centre of this example. The characteristic hole on the base, complete with severed shaft, is also visible.

Fig 26. Lock Pins nos 60-63
64 Fig.27 228 Period U/S. Weight 36gms. Diameter 29mm. Length 40mm. Bronze 'lock-pin' with a flanged circular head and small central knob. A large part of the shank is still attached, but the circular head is damaged.

65 Fig.27 399 Period VII. Weight 27gms. Diameter 39mm. Length 32mm. Bronze 'lock-pin' with a large flanged circular head and small central knob. The head survives in good condition but only partial remains of the shank are present.

66 Fig.27 1659 Period U/S. Weight 21gms. Diameter 36mm. Length 25mm. A large example of a bronze 'lock-pin', in damaged condition. This example has a wide flanged circular top, with a large central knob that has been flattened.

67 Fig.28 671 Period U/S. Weight 15gms. Diameter 20mm. Length 45mm. A small bronze 'lock-pin', almost fully complete, and in excellent condition. The shank on this example clearly shows where the lock-pin could have been attached to the lock, with a well cut circular hole 4mm from the base of the shank.

68 Fig.28 742 Period U/S. Weight 96gms. Diameter 30mm. Length 65mm. An excellent example of a bronze 'lock-pin'. This sturdy example has survived in complete condition, and illustrates clearly the long shank complete with hole, and the circular head with central knob. The central knob in this example has been filed smooth on the top, rather than ending in a cone or point.
69 Fig.28 345 Period VII. Weight 32gms. Diameter 21mm. Length 40mm. Bronze 'lock-pin' with a small circular head and central knob placed within it. A considerable amount of the shank remains intact, with the hole to attach the lock-pin into the interior of the lock mechanism 50% intact at the base of the shank.

70 Fig.29 382 Period U/S. Weight 13gms. Diameter 22mm. Length 35mm. Bronze 'lock-pin' with a large flanged circular head with a central knob. In excellent condition with a 20mm section of the shank still attached.

71 Fig.29 505 Period VII. Weight 18gms. Diameter 21mm. Length 22mm. Corroded and bulky bronze 'lock-pin', part of the shaft remains corroded onto the base of the pin, and the other end of the pin is circular with a squat central knob.

72 Fig.29 685 Period VIB. Weight 21gms. Diameter 35mm. Length 15mm. A large bronze 'lock-pin', with a deep circular head into which a squat central knob has been placed. The base of the lock-pin has a cavity into which the shaft would be placed. This is clearly seen upon the illustration.

73 Fig.30 787 Period U/S. Weight 9gms. Diameter 21mm. Length 17mm. A small bronze 'lock-pin', in excellent condition. This example has part of its shaft remaining where it has corroded into the cavity into

Fig. 29. Lock Pins Nos 70-72

whack it was originally fitted. The Lock-pin has a small circular head with a dominant central knob.

74 Fig.30 1564 Period VIA. Lock-pin Weight 25gms. Diameter 22mm. Length 30mm. A small squat bronze lock-pin. This example is in perfect condition, and is a good illustration of one of the smaller types of lock-pin. The flanged circular head and shaft are both typical of this design type.

75 Fig.30 1863 Period VII. Weight 9gms. Diameter 14 Length 27 A battered example of a bronze 'lock-pin' with a small circular head and partial shank remaining. The central knob is unusually pointed at its tip in this example.
76 Fig.30 2043 Period VI. Weight 6.5gms. Diameter 20mm. Length 9mm. A corroded example of which the majority of the circular head remains intact. The shaft has been broken at the point at which it enters the base of the 'lock-pin'.

77 Fig.31 2006 Period VII. Weight 8gms. Diameter 21mm. Length 17mm. A badly corroded example of a bronze 'lock-pin'. 95% of the circular head remains as does the central knob, the lower part of the lock-pin is very badly corroded and it is not certain whether any of the shaft survives visible or we can only see the effects of corrosion.

78 Fig.31 1857 Period U/S. Weight 13gms. Diameter 23mm. Length 17mm. Corroded bronze 'lock-pin'. This example has a small part of the shaft remaining in the underside, and 10% of the circular head of the lock-pin has corroded away. The central knob is a wider example than most, though this could in part be due to the effects of corrosion.

79 Fig.31 1873 Period U/S. Weight 16gms. Diameter 23mm. Length 17mm. Corroded bronze 'lock-pin'. This example has a small part of the shaft remaining in the underside, and 10% of the circular head of the lock-pin has corroded away. The central knob is a wider example than most, though this could in part be due to the effects of corrosion.

Not Illustrated 2857 Period U/S. Weight 37gms. Diameter 24mm. Length 51mm. This example is very heavily corroded. It also has the longest shaft in the Vindolanda lock-pin collection, at 35mm. Individual characteristics of this 'lock-pin' are hard to decipher from the corroded remains, yet it is obvious that this was of the central knob variety.
Latches

These are the objects believed to be the remains of door latches. All share a characteristic long shaft which ends at a turned point or tip. Beyond this shared characteristic there seems to be no uniformity, and they vary in size and shape to fit the needs of the individual doors and associated locking mechanisms (see latch lifters). The assumption has been made that most of the latches had a loop at one end of the latch and the turned point or tip at the other, but the only 'complete' example is no.3739.

80 Fig.32 4170 Period III. Length 174mm. Weight 38gms. An almost complete example with an unusual tip, probably the result of the latch being twisted or buckled either during operation or after, making the object unusable. This example is in good condition with only minimal evidence of corrosion.

81 Fig.32 6596 Period III. Length 160mm. A large, heavy duty latch, almost complete with little sign of corrosion. This latch has an unusually large tip, illustrating the potential sturdiness of the latch lifter and size of the door.

Not Illustrated 3739 Period VIII. Length 146mm. A complete example of a latch, in excellent condition, showing no signs of corrosion. The object is made from one piece of iron, folding into the loop at one end and the characteristic bent tip at the other.

Not Illustrated 5309 Period VI. Length 120mm. Weight 21gms. This almost complete example of a latch has a buckled tip, showing possible indications of having been forced at some point.

Not Illustrated 3353 Period VII. A Length 66mm. Only a small part of this latch remains intact, featuring a small upturned tip at its terminus.

Not Illustrated 3562 Period VII. Length 82mm. A
broken latch with only the tip remaining.

**Not Illustrated 3762 Period V.** Length 34mm. A heavily corroded latch tip, divided into three small corroded segments.

**Not Illustrated 3892 Period VI.** Length 90mm. A sturdy example of a latch, heavily corroded with only the tip end of the latch remaining intact. The groove in the tip of the latch shows signs of this example's frequent usage.

**Not Illustrated 5879 Period V.** Length 70mm. The twisted tip of a latch, this example is partially corroded.

**Locks And Lock-Plates**

This section comprises both locks and lock-plates, illustrating the fine examples that have been found at Vindolanda in the last twenty-five years of excavation. The collection varies enormously in both size and design, giving a good indication of the complexity and nature of locking devices and their associated parts. Two of the locks have been published in Bidwell 1985, and they represent some of the best barb-spring padlocks found in Britain.

**Barb Spring Padlocks**

This type of lock was used extensively throughout late Iron Age Europe and first appeared in Britain 'at the very end of the Iron Age, and a fragmentary example adapted for locking a shackle is known from Bigberry, Kent' (Manning 1985, p95). The basic design of the lock is fairly simple and normally made from iron. The padlock case has a rectangular hole at one end through which the associated bolt is pushed. The bolt itself has a central spine, riveted to this is one or more springs which flare out to give the appearance of barbs. As the bolt is pushed in the hole, the barbs compress then spring out on the other side, making it an difficult task to pull the bolt out.

To open the lock you must the insert an L-shaped key (see barb-spring padlock keys), through a slit at the other end of the case. The bit of this key usually has one or more square holes set within it, which when inserted slip over the bolt, compressing the springs and enabling the bolt to be withdrawn from the lock case. Some designs use more than one spine on one bolt, which means that the case will have two bolt-holes, commonly one set above another. The number of springs on a spine vary from one to four, two is the most commonly found. A helpful explanation of this system can be found in the 'Excavations at Fishbourne, Volume II' by Barry Cunliffe, a series of diagrams shows the locking process quite clearly (Cunliffe 1971, p142).
Manning (1985, p95-96), has classified two different varieties of barb-spring padlocks. Those that have a 'looped hasp' and those which have a 'straight hasp'. Vindolanda has clear examples of both varieties, and they are catalogued using the Manning system. All of the barb-spring padlocks in the Vindolanda collection are made of iron.

82 Fig.33 Bidwell no103 Manning Type 1 barb-spring padlock. Period VII. Bidwell reference 103 number, fig.54. Length 320mm. This example has the bolt in the locked position, with the terminal loop firmly slid over the straight hasp. The radiography clearly showed two sets of two barbs, positioned at right-angles to each other, one set on the main bolt, the other on a small rod which is pegged to the underside of the main bolt.' (Bidwell, 1985, p147). Other examples of this variety of lock can be found in Manning 1985, including examples from the Lakenheath Hoard and from Wylye, Wiltshire, as well as from Chilgrove 2.

83 Fig.33 1001 Manning Type 2 barb-spring padlock 1001. Period VI. Length 340mm. Barb-spring padlock with a 'barrel' case and a straight hasp. This example differs from the previous barb-spring padlock only in the shape of its case. Much less of the mechanism remains, but both locks are almost the same size, and the hasp is of a similar design. Also see Cunliffe, 1971 on the excavations at Fishbourne, (p141, fig.64, illustration 82).

84 Fig.33 Bidwell no 104 Manning Type 2 barb-spring padlock Period VII. Bidwell reference number 104, fig.54. Length 111mm. This padlock is of the second variety and has a looped hasp. The damaged slit of the keyhole is in the normal position to the back of the case. Above this can be seen the base of the 'bow shaped hasp which terminated at the other end in a rectangular loop, now broken, in front of the case end' (Bidwell, 1985, p147). The lock case appears to have been made from a single thin sheet of iron, the hasp then welded on to this.
Other examples of this type of lock can be found from Manning 1985, which includes examples from Icklingham and Great Chesterford.

**Not illustrated 2917 Manning Type 1 barb-spring padlock 2917. Period VII.** Length 307mm. This is an extensively corroded example, and has sustained too much damage to be worthy of much more than comment that it exists. It had a barrel design similar to that of Vindolanda 1001, and in overall appearance it would seem to be of the same design throughout.

### Padlock

**Not Illustrated 1927 Period III** Length 66mm. Width 64mm. Made from iron, it is the only example of a barrelled padlock from Vindolanda. The exact nature and function of this lock is difficult to determine due to the heavy corrosive damage sustained, which has fragmented the object into 8 parts. A possible comparison can be made to a similar object found at Birrens in Scotland (A. S. Robertson, 1975, p120-121, fig.38, 3), where the possible padlock has an associated lock plate. Interestingly, on the Vindolanda example the internal workings of the locking mechanism are made from iron rather than wood, whereas the Birrens example has the charred remains of wood within it.

### Lock Plates

The lock plates in the collection come in many shapes and sizes, illustrating the variety of locking mechanisms that the people of Vindolanda employed. Examples of published lock plates are not as plentiful as one might expect from Roman Britain, the objects being very convenient to melt down and re-use as something else.

**85 Fig.34 5355 Period VI.** Length 93mm. This iron lock plate example has all four of its bolt holes remaining, one in each corner of the plate where it would have been attached to the door. The lock plate has two possible key-holes, indicating that this lock required two separate keys. The larger of the two may have been an L-shaped lift key, or a L-shaped slide key.

![Fig. 34. Lock Plate No 85](image)
86 Fig.35 2970 Period VII. Length 82mm. This iron lock-plate was fastened to the door in the usual fashion, with four bolts, one in each corner of the plate. The key used in this lock was a lever lock key. For further information about this lock-plate see Bidwell 1985, p150, fig.108.

Fig. 35.
Lock Plate
No 86

87 Fig.36 4187 Period VII. Length 194mm. This iron lock-plate is the largest in the Vindolanda collection. It is possible that this lock was operated by a T-shaped lift key similar to those already illustrated. One of the three square bolts remain in place, and the holes where the other two fitted remain intact. This plate has corroded into three segments. The reverse side shows where part of the fitting was attached to the bolts in the lock-plate, with two smaller studs visible.

Fig. 36.
Lock Plate
No 87
88 Fig. 37 4194 Period V. Length 56mm. This iron lock-plate is badly damaged and only one small bolt remains to show how this object was kept in place.

89 Fig. 38 4302 Period VII. Length 64mm. Very similar to no. 74 on the same plate. This example has only two bolt holes remaining. The shape of the keyhole suggests that a L-shaped lift or slide key was used.

90 Fig. 38 5621 Period V. Length 92mm. A sturdy lock-plate, similar in size to no. 74, and probably using the same key (L-shaped). Three of the sturdy bolts remain and two bolt holes, suggesting that the original compliment of this lock-plate was of five bolts.
Wooden Locking Device

91 Fig. 40 W1132 Period IV. Wooden lock housing/lock. This object is the remains of a wooden part of a large locking mechanism - a survivor of the oldest form of lock, generally known as an Egyptian lock. Few other examples are to be found in Roman Britain, and the best example comes from the Roman *Limes* in Germany, at the Museum of Saalburg. A diagram of the simpler Saalburg locking mechanism below shows how the lock is believed to have operated, using two bone or wood latch lifter keys.

Fig. 39. The Saalburg Lock

Fig. 40. The Vindolanda Wooden Lock
The solid wooden object appears to be complete and has been fashioned from a single block of wood, with the overall dimensions 270mm x 80mm x 20mm. The outer surface is slightly convex and has been moderately pared by a carpenter's plane. There are single fixing holes of 1.5cm diameter each at both ends of the object. From left to right on the drawing the inner surface consists of a flat block circa 70mm wide to accommodate a fixing hole. This gives way to a hollowed 50mm wide rectangular channel which is a uniform 20mm deep. The right hand side of the channel has a wear mark consistent with a sharp (metal ?) edge making occasional and possible unintentional contact with the surface over a period of time.

From the right of the above channel three further narrow channels, of width varying between 14mm and 10mm and depths of between 15mm and 20mm, extend towards the right hand outer edge of the object to a consistent length of 110mm per channel. The narrow channels produce a feature of four projecting fingers or blocks of wood. Three of these display shallow rectangular grooves, each 20mm in width with depths of between 30mm and 50mm. The central part of the three blocks is noticeably higher than its neighbours and shows a slight surface wear on the base of the groove. The fourth block has two very narrow grooves of 4mm in width and 3mm in depth set 12mm apart. The outside edges of all of the above grooves are aligned with one another.

The remaining part of the object is solid, with a slight natural curve of the wood, and is designed to take the second fixing hole. The object has been reasonably well made and it could be stated that the composite effect is one of uniformity without precision. This may indicate that this object was used as a casing or housing for some internal mechanism which required only that the holding grooves of the projecting blocks between the narrow channels were well aligned and that the broad channel was of uniform dimensions.
Final Results

The table below shows all of the finds in the fascicule in relation to each other, and is perhaps the best indicator of what may be discovered from the Vindolanda collection. As before, when the keys were examined in table 1, the later periods of occupation, Period V to Period VIII, show the greatest variety of keys and locking devices, with most types represented in this time-span of occupation. Period VI remains the best represented in the collection, and there is yet to be information upon locks and keys from Period I in any capacity. This is most likely due to the confinement of Period I excavation to the Period I fort ditch, an area which is perhaps least likely to produce the evidence for locks and keys.

The 120 items do provide a rare view of this category of find, as they represent one of the more complete collections to come from anyone site, and the northern frontier in particular. The credit for this must rest upon the excellent preservation conditions present at Vindolanda, famed for producing objects such as the writing tablets, but also excellent for the preservation of iron, leather and environmental data.

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<th>Key/</th>
<th>PERIOD</th>
<th></th>
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<td>V</td>
<td>VI</td>
<td>VII</td>
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