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UNMASKING MASCALL'S MOUSE TRAPS

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ABSTRACT: Twelve mouse traps described and figured by Leonard Mascall in 16th Century England are illustrated and interpreted afresh. Special attention is given to one that is also depicted on the Merode altarpiece, an important 15th Century Dutch painting. Since Mascall's era many of his mouse traps have virtually disappeared. Others have been made more effective by various design changes, including the incorporation of small powerful helical springs and improved release mechanisms, and by the greater use of wire mesh and sheet metal.

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INTRODUCTION

In the latter half of the 16th Century Leonard Mascall, Clerk of the Kitchen to the Archbishop of Canterbury, compiled a number of books clearly aimed at improving the running of more well-to-do English households. They covered such varied topics as compounding medicines, removing spots and stains from fabrics, cultivating fruit trees, keeping poultry, fishing and trapping. The last of these books (Mascall 1590) was published the year after the author's death, and comprised the second half of the volume containing the work on fishing. It is titled 'A Booke of Engines and traps to take Polcats, Buzardes, Rattes, Mice and all other kindes of Vermine and beasts whatsoever, most profitable for all Warriners, and such as delight in this kinde of sport and pastime'.

This 'Booke of Engines and traps', judging from the varied nature of its descriptions and especially its illustrations, is, like Mascall's other books, a compilation from earlier sources. Unfortunately these sources, at any rate in the case of the traps, no longer seem to exist. Thus while there are very occasional earlier depictions and descriptions of traps and some archaeological material, we are left with Mascall's book as the earliest substantial body of information on this topic. Since also, some 200 years were to elapse before further and generally much less comprehensive works on traps began to emerge (e.g., Roubo 1782), the importance of Mascall's book for understanding the history and development of traps is self evident. Nevertheless, although he may get an occasional reference in modern texts on trapping, Mascall tends largely to be ignored, no doubt mainly because of his difficult-to-read black-letter print and his often hard-to-interpret illustrations. However, with a little care, Mascall's book can be read and interpreted.

Altogether Mascall dealt with 34 different traps as well as 9 recipes for poison baits, but we are only concerned here with twelve of his traps, all of which were evidently intended for the capture of mice, although some of them were also used for trapping rats and other vermin. These twelve traps are all illustrated in Figures 1 and 2 with drawings from working models constructed by following Mascall's original descriptions and drawings. Only in two cases, mentioned later, was some slight modification necessary in order to make the traps work.

The traps are grouped according to their structure and mode of action and not in the seemingly more or less random order used by Mascall. But to help the reader refer back to the original work, comment on each trap is preceded by Mascall's

title for it and the numbers of the pages in his book on which it is figured and described. In these titles Mascall's varied and wayward spelling and use of capitals is retained, but elsewhere it is generally abandoned.

MASCALL'S MOUSE TRAPS

A Mill to take mice (77-78) (Figure 1a)

To fulfill its function as a trap, the 'mill', which turned freely on its spindle, was baited on both sides of each vane with a mixture of butter, oatmeal and sugar, and placed so that it overhung the edge of a table. On the floor beneath it was placed a pot of water to catch and drown any mouse that lost its balance and fell while trying to take the bait.

It is of course an indoor variety of pitfall trap and is apparently the earliest known example of an ever-set multi-catch mouse trap. This particular design did not persist, but the principle of precipitating unbalanced mice into water-filled containers continues to resurface from time to time in modern plastic traps, and seems to attract rather little public interest.

The mouce trap with a dish & a filboll (78) (Figure 1b)

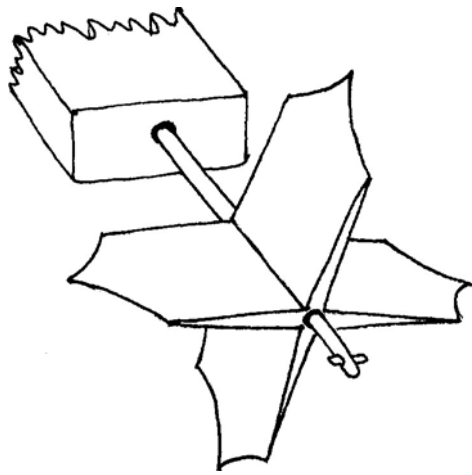
This trap is a bowl propped up at one point on its edge by a filboll. The filboll, as described by Mascall, is evidently a shaped thin slice of wood of a type used to fill puddings, and having a three inch long toil. The bait is attached to the end of the tail, which points in towards the middle of the bowl, so that when a mouse tries to take the bait the bowl is dislodged from the filboll and falls over the mouse.

The exact shape of the filboll is not clear from Mascall's description and drawing, but probably it can vary in shape and size in much the same way as modern wooden kitchen spoons and spatulas. The word itself is of some interest, since it seems not to appear in any dictionary dealing with either modern or early English usage, which suggests that Mascall's book might also well repay study by philologists.

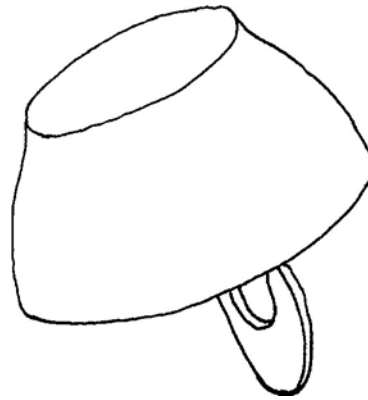
The principle of catching an animal alive by causing a container to fall over it continues in use to this day, but remains very uncommon in commercial traps.

The square boxe trappe (84) (Figure 1c)

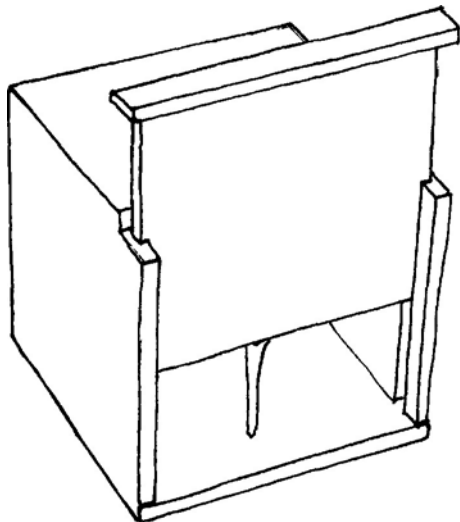
This trap is simply a wooden box set on one side, with its sliding lid held open by a notched stick. The upper end of the stick projects upwards inside the box and on it is stuck the bait - Mascall recommends the apparently already traditional cheese. When the mouse takes the bait, it dislodges the stick, and the lid falls and traps the live mouse within the box.



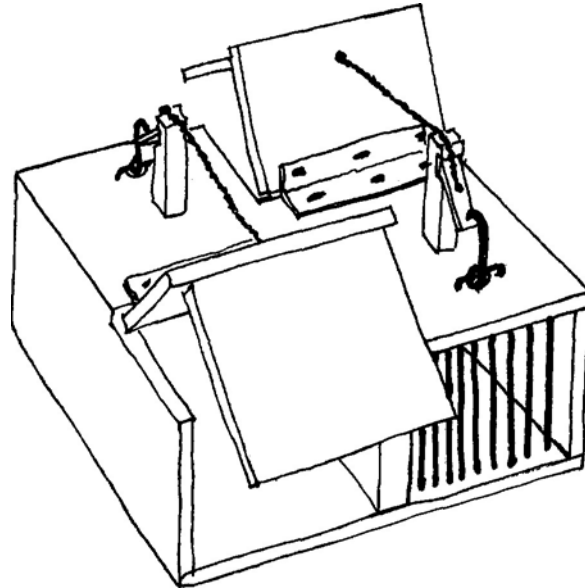
a. Mill to take mice



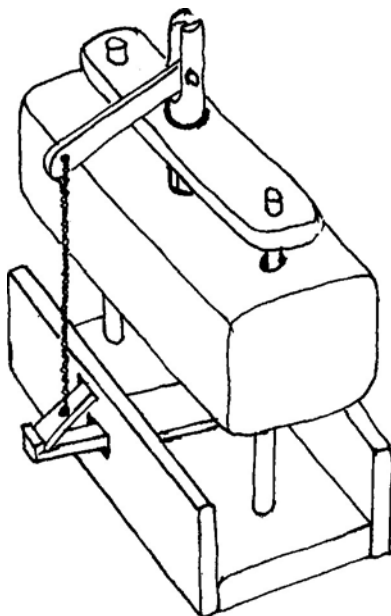
b. Dish and filboll



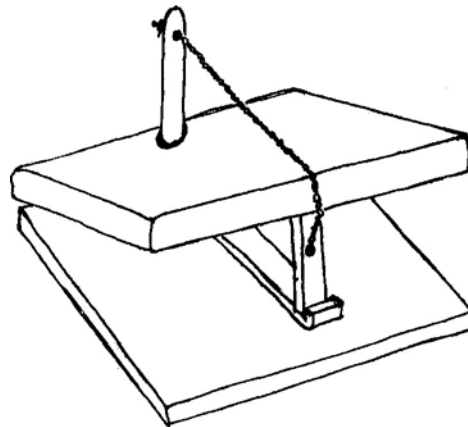
c. Square boxe trappe



d. Double trappe

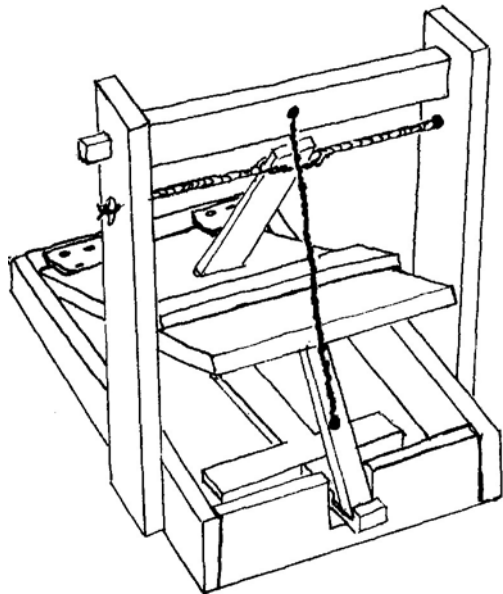


e. Fall

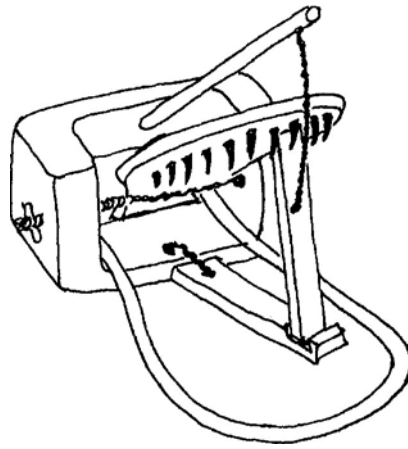


f. Square mouce trap

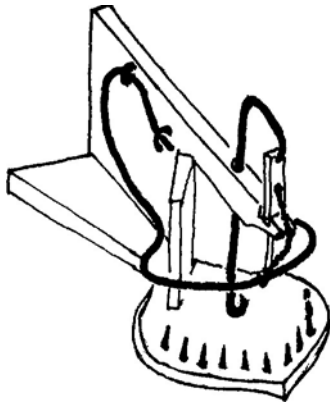
Figure 1. Some of Mascall's mouse traps.



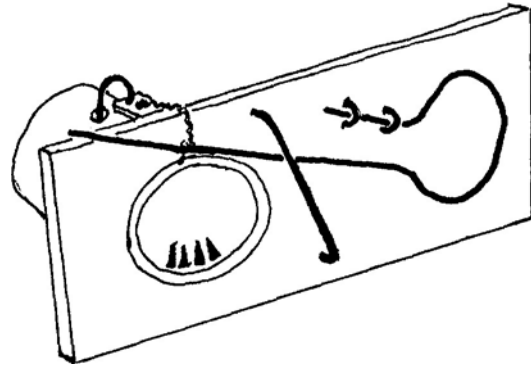
a. Following trappe



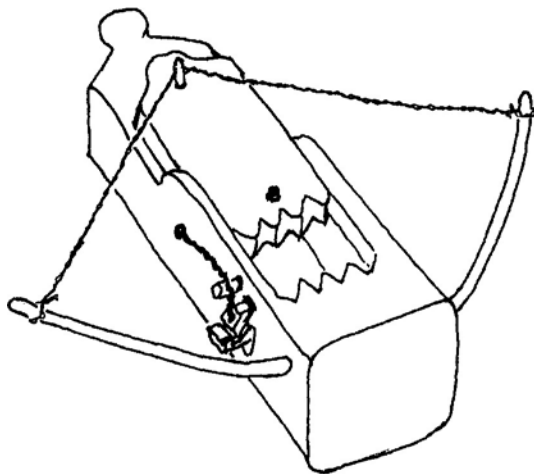
b. Dragin trappe



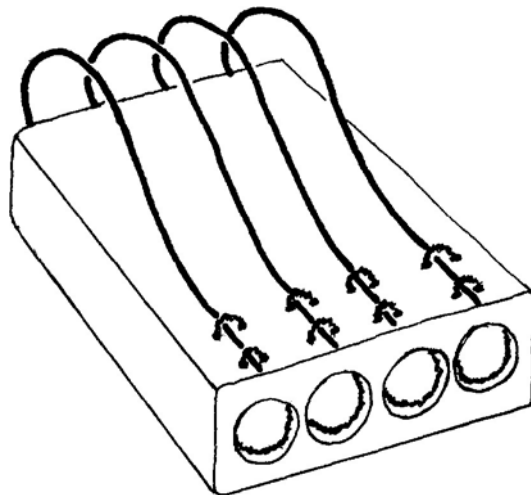
c. Dragin trappe with great wyar



d. Boxe trappe

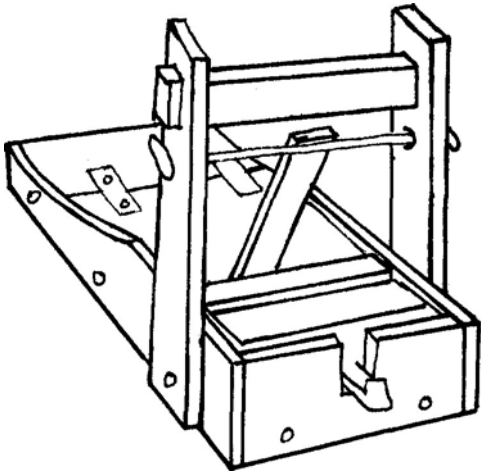


e. Bow trappe

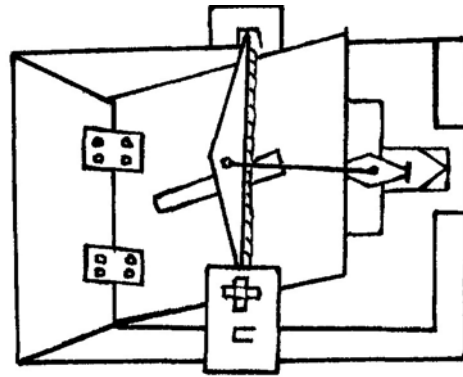


f. Spring trappe

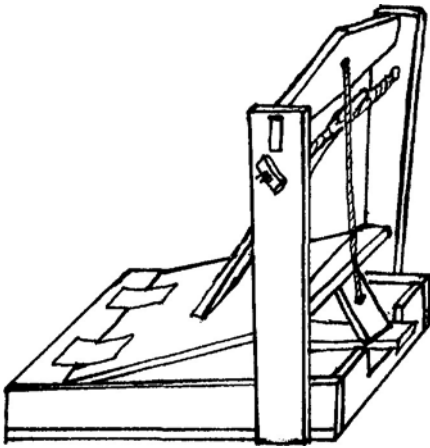
Figure 2. More of Mascall's mouse traps.



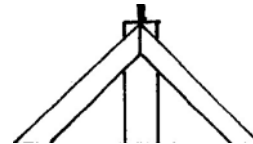
a. Master of Flemalle



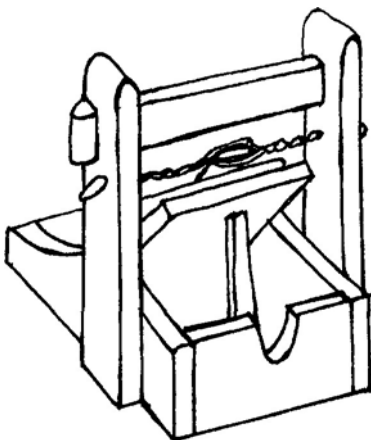
b. Mascall



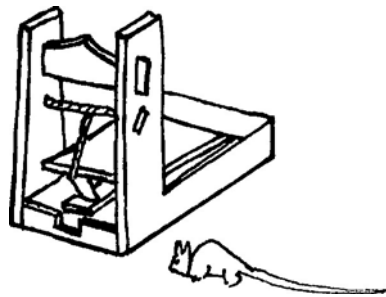
c. Roubo



d. Roubo—inside of trap with treadle



e. Bateman



f. Master of the mousetrap

Figure 3. Various depictions of the 'Merode' mouse trap.

The double trappe to take rattes or mice (64-65) (Figure 1d)

This is another largely wooden single-catch trap, or rather two such traps built into a single structure, so that they have one common side and their entrances are at opposite ends to each other. Of particular interest is the mechanism—string and clicket—which both holds the door open and permits its release. The clicket is a small length of wood, one end of which is lodged in a notch on a vertical post on top of the trap, while the other end is held under a piece of bent wire, the lower end of which forms the bait hook. At the center of the clicket is fixed one end of a piece of string, whose other end is attached to and holds up the open door. Thus when the bait is disturbed, the string and clicket are released and the door falls shut. A similar use of string and clicket will be seen also in most of the remaining traps (Fig. 1e & f; Fig. 2a, b, c, d & e).

The word ‘clicket’ is an old term apparently generally used for the latch of a gate, and Mascall's adoption of it to name part of a trap seems to have been unique. Nevertheless its use is retained throughout the present paper, firstly because it appears, both in its sound and its gate association, to be very appropriate, and secondly because there seems to be no generally accepted alternative.

Single-catch live traps for rodents are amongst the oldest known (Drummond et al. 1990) and they continue to be fairly popular today, although the materials from which they are made and their mechanisms have changed substantially from earlier times.

The fall for Rats or other vermine (72) (Figure 1e)

This dead fall trap is a heavy block of wood guided downwards by two upright posts projecting through it. The block is held up by a string and clicket and falls directly down onto any animal which steps on a treadle sited below it. It figures in manuscripts and paintings of the 15th Century (Warner 1920, Berg 1966) and judging from the number now to be found in the collections of folk museums, it remained popular for several centuries.

The square mouce trap (78) (Figure 1f)

This trap is essentially similar to the last except that the block or ‘upper board’ is a flat square piece of wood, retained at the back by a single upright post, and held up at the front, when the trap is set, by a string and clicket. Mascall describes and figures the clicket string as being secured to a small peg in the top of the upper board, but such an arrangement would not permit the upper board to be held up and in the reconstructed trap (Fig. 1f) the clicket string is lengthened and attached to the top of the upright post. In at least one earlier trap of otherwise similar design (Roth 1956), the clicket string, although not shown, was evidently attached to the center of a horizontal beam held firmly between two upright posts placed on either side of the upper board.

These types of killing traps requiring relatively heavy blocks or boards, even in the case of mouse traps, to catch the animal by crushing it, are now rarely used, being replaced by traps with much smaller and lighter striking components operated by springs.

The following trappe for mice (81) (Figure 2a)

The ‘following trappe’ represents an intermediate stage in trap design between the square mouse trap (Fig. 1f) and the

snap trap (Fig. 2b). It has an upper board held up by a string and clicket suspended from the center of an overhead beam, and released by a treadle. In addition, however, it also has a ‘following staffe’—hence apparently the name of the trap—a wooden rod that has its upper end inserted into a twisted cord (an early type of spring) and that follows the upper board down when the trap is sprung. The power provided by the twisted cord is imparted through the following staff to the upper board and makes the latter fall more swiftly onto its victim. It is also a function of the following staff to hold the upper board down against the trapped animal, an arrangement that suggests that the striking power of the trap was often not sufficient to kill a mouse outright.

This type of trap evidently continued to be used into the 18th Century since it is well illustrated and described by Roubo (1782). Its first known appearance however is in the right hand panel of the Merode altarpiece, a triptych painted in the early 15th Century by the Master of Flemalle, now in the Cloisters Collection of the Metropolitan Museum of Art, New York. It sits on Joseph's workbench, while a deadfall mouse trap is set out on his open window shutter. The symbolic nature of these two traps was discussed at some length by Meyer Schapiro (1945).

Some twenty years later Irving Zupnick (1966) suggested that the object on Joseph's workbench was not really a mouse trap, but probably a carpenter's plane and gave his reasons in an article entitled ‘The Mystery of the Merode Mousetrap’. This article stimulated a number of correspondents to reaffirm, quite rightly, that the object in question was indeed a mouse trap, but unfortunately at the same time there arose a misconception about its mechanism, which it would seem sensible now to correct.

In his keenness to establish the nature of the Merode mouse trap John Jacob (1966) of the Walker Art Gallery, Liverpool, had a replica made of the trap. To do so he assumed that the treadle, the end of which protrudes from the front of the trap in the picture, was in fact a separate piece of wood that could be used to delicately prop up the upper board, which he then baited underneath with a piece of cheese attached by a nail. And what is more, he caught a mouse in his Gallery with this arrangement! Which I suppose only helps to show that almost any object of the right weight and shape, even a defective mouse trap, can be sufficiently carefully balanced and baited to catch a hungry and unsuspecting mouse. Jacob's setting mechanism was subsequently accepted and illustrated (Fig. 3e) by Bateman (1971) in his book on animal traps and trapping.

Those corresponding on the Merode mouse trap (Fig. 3a) during this period were clearly unaware of the works of Mascall (Fig. 3b) and Roubo (Fig. 3c and d), and therefore failed to recognize that the trap as painted was incomplete and lacked the necessary string and clicket to set it properly. Also that the notch at the end of the treadle was to hold one end of the clicket. The rest of the treadle hidden within the trap was provided with a cross bar and was attached at its inner end to the trap floor so that it could only move upwards and downwards and not backwards or forwards.

It was in fact not until some years later that the painted Merode trap was first seen to be defective (Klijn 1979). Does this mean that the art world will now have to reassess the symbolic significance of an incomplete mousetrap in the Merode altarpiece? Probably not. Klijn has already pointed

out that nothing could be more natural than a carpenter having an unfinished piece of work on his workbench.

My own view is that a state of recognizable incompleteness was not necessarily the intention of the artist. There seems no special reason to believe that artists pay much attention to the details of construction in their depiction of mechanical contrivances, provided it is identifiable for what it is by the intended contemporary viewer, even the 16th century artist, the 'Master of the Mousetrap', got some of it wrong.

The Master of the Mousetrap was so called because his customary signature was a mouse trap and Figure 3f is redrawn from the signature on his print titled 'Les deux armées' (Bartsch 1811). This signature shows a mouse trap of the Merode type in which the artist has correctly inserted the clicket between the treadle and the upper board, albeit at a rather odd angle, but then he has attached the clicket string to the twisted cord between the uprights and omitted the following staff altogether. Thus while the trap would probably be set off, the mouse would almost certainly go free!

The Dragin trappe for Mice or Rattes (71) (Figure 2b)

The Dragin trap is an early form of break back or snap trap, in which the striking frame is a flat racket-shaped piece of wood, held up by a string and clicket and set off by a treadle. The striking frame is powered directly by a twisted cord into which it is inserted, and along its edge it is armed with a row of metal teeth to help prevent any unkilld victim from escaping. Its name appears to be derived from these numerous small teeth that make it look like a dragin or harrow.

Traps of similar design were apparently widespread in Northern Europe until quite recent times, where they have been referred to as Nordo-Baltic torsion traps and may well have been derived from apparently similar traps depicted on the walls of the early Egyptian tombs at Beni Hasan (Lagercrantz 1964). An early European version (c.1450) of a double form of this trap can be seen in a German illuminated MS of a Hebrew fable, 'Mashal ha-Kadmoni', concerned with mice and weasels. Neither Roth (1956) nor Bateman (1971) were able to recognize the nature of this trap, and both were almost certainly in error in believing it to have been made of metal.

The Dragin trappe with a great wyar (75) (Figure 2c)

This dragin trap takes us a little bit closer to the modern snap trap, with its 'great wyar' not only forming a simple metal striking frame, but being all of a piece with its metal spring. But the metal teeth, now pointing up from the wooden base of the trap, again suggest that even a metal spring at this time was still not strong enough always to deal a lethal blow.

The boxe trappe (73) (Figure 2d)

Mascall's so called box trap is in reality a guillotine-type trap, in which the mouse puts its head in a hole to get the bait and thereby released the wire which strikes it across the back of the neck. Otherwise it has many similarities with the last snap trap, including a simple metal spring, string and clicket, and upwardly pointing teeth. However, subsequent improvements to design never managed to match those to the snap trap, and the guillotine trap more or less completely disappeared early in the present century, at any rate for the purpose of mouse control.

The bow trappe for Rats or other Vermine (69) (Figure 2e)

This is undoubtedly an earlier type of guillotine trap, in which the victim put its head down into the hole and the striker was a solid piece of wood powered by a wooden bow. Downward pressure on a treadle released the clicket, which in turn released the action of the bow.

An interesting point to note is that the string is made to change direction just above the treadle, so that the clicket can fit firmly between the treadle and the body of the trap and not be pulled sideways. Mascall provides two drawings of the trap, but only in the second is the route taken by the clicket string correctly shown. It is also worth drawing attention to the fact that the bow has the potential for delivering a much more powerful striking action than that of any of the other traps considered here and it was probably generally used for trapping vermin larger than mice.

The spring trappe for Mice (74) (Figure 2f)

Mascall's spring trap for mice is by no means the earliest choker trap in which the victim puts its head in a hole to reach a bait, and thereby raises a noose which throttles or chokes it. Such traps were used in the Indus Valley during the 3rd Millennium BC (Mackay 1938). It is however the earliest record of a choker trap in which the animal releases the noose by gnawing through a string which obstructs its path to the bait. Such a gnaw-string release mechanism for choker mouse traps is still common in some European countries. It surely must also have existed at some period in the USA, but there seems to be no record of it.

DISCUSSION

It would appear from Mascall's work that the would-be mouse catcher of 16th Century England had at his disposal a relatively large number of different types of traps. In contrast, the English householder of today has only a choice of four snap traps, all rather similar in design, and one single-catch box trap. There is little doubt that most of this great difference between the two periods is the result of incorporating the improved technology of the intervening 400 years into current mousetrap design and manufacturing processes.

There is not space here to explore all the changes that took place, many of which were initiated in the USA in the late 19th Century. It will be worthwhile however to mention briefly some of the main aspects of change that led to the eventual demise of many of Mascall's mouse traps and to the improvement of others.

Helical springs

In Mascall's day the source of energy used to operate traps included gravity (Fig. 1a-f), wooden bows (Fig. 2e), twisted fibre (Fig. 2a and b) and simple metal springs (Fig. 2c, d and f). Such sources of energy tended to lead to rather large clumsy designs or to traps that did not act quickly or strongly enough to be sure of catching their intended victims. All this gradually changed however with the introduction of helical springs. The earliest evidence of their use for traps appears in an early 17th Century Dutch engraving of a choker mouse trap (Brummel 1949), but it was not until really strong miniaturized versions were developed that they really came into their own. They were then used in choker traps and single-catch live traps and played a particularly vital role in the development of modern snap traps.

Hinged clickets

As has already been noted, the most common mechanism for releasing 16th Century traps was the string and clicket used in conjunction with bait hook or treadle, and this occurred in no less than three quarters of Mascall's mouse traps. In later centuries it was replaced in such traps by the simpler hinged clicket. This latter clicket is no more than a rigid piece of wire hinged at one end to the body or frame of the trap, and held at the other end by bait hook or treadle when the trap is set. Somewhere along its length, generally close to the hinge, it holds in check the power of the spring, until released from restraint by a potential victim stepping on the treadle or moving the bait hook.

It should, however, be mentioned that a short robust form of hinged clicket already existed in the 16th Century and Mascall himself describes and figures it in his 'griping trappe made all of yrne', a trap intended for much larger animals than mice. It only needed reshaping and repositioning to be used effectively in later mouse traps, especially in snap and choker traps, in conjunction with a helical spring.

Wire mesh and sheet metal

The most common material used throughout Mascall's mouse traps was wood and even today wood remains the main material for the base or body of most snap and choker traps. However for those traps in which it is intended to catch the mice alive, wire mesh cage traps or sheet metal box traps have now largely replaced wooden designs. Attempts in turn to replace metal by plastic have not always met with much success. An early use of wire to form the end of a trap can be seen in Mascall's double trap (Fig. Id), but its use to replace wood here was primarily to reveal what had been caught rather than to prevent the captive's escape.

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