“Changes in drainage of an area south of Maldon, Essex”

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Sheetlines
The journal of
THE CHARLES CLOSE SOCIETY
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Changes in drainage of an area south of Maldon, Essex

Peter Wynn

Ovenden\(^1\) stated that in the investigation of changes in drainage networks over time, the generalisations in their representation on one inch Ordnance Survey maps is too great. He also referred to the difficulty of establishing precise dates for revision information on the 1:25,000 series. These opinions were queried, at least as far as the Old Series one-inch maps are concerned, by Hellyer and Oliver who stated that the point needs more thorough investigation before any general conclusion can be reached.\(^2\) This article is intended as a contribution to that investigation.

Maldon lies at the head of the Blackwater Estuary about 10 miles east of Chelmsford (figure 1). To the south of the town there is an area of low-lying land, once agricultural but now subject to expanding urban encroachment. Although there is little early documentation, maps, including those of the Ordnance Survey, indicate changes in drainage patterns, including the naming of water courses, since the Eighteenth century.

Figure 1 (courtesy www.openstreetmap.org).

1721 Survey

Part of the study area, owned by Westminster Abbey, was surveyed in 1721 as shown in figure 2.\(^3\) It is possible to suggest that a stream flows north east from Mundon Road before entering a pond and turning south east towards South House Farm. The evidence for the southern limb is strong, being represented by a double line on the plan. The area adjacent to the sea wall described as “Waste Land” will be discussed further when the 1845 Tithe Survey is described.

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2 Roger Hellyer & Richard Oliver, The First Ordnance Survey Map, 96.
3 Westminster Abbey Muniments, 8134.
In 1759 it was reported that Joseph Pattison Senior took an underlease of Brickhouse Farm and Parsonage Marsh and subdivided the lower marshes in an attempt to more effectively drain them. The attempts were not wholly successful and it was stated that about 81 acres belonging to Brick House (Old Marsh, Great Marsh, Little Marsh, Twenty Acres and Small Gains) remained submerged in wet weather and that effective drainage would require co-operation between affected landowners.4

Figure 2  Brickhouse Farm & Parsonage Marsh Estate Survey (1721) (by permission of Westminster Abbey Muniments Document 8134).

**Chapman & André (1777)**

This map of Essex was produced on a two-inch scale as both an atlas of 25 sheets and as a wall map.5 Walker states that the map is legendary for its level of detail and accuracy. Figure 3 shows the major course of the Limebrook as initially

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flowing north-eastward from Woodham Mill before being joined by a smaller left bank tributary that had its origins close to Limebrook farm. After crossing the Fambridge Road the stream heads south-eastwards and enters the Blackwater Estuary at Limbourne Creek. A small right tributary enters about halfway along the south-eastwards trending part of the Lime Brook. The probable stream identified to the east of Brick House in figure 2 does not appear on Chapman & André's map.

![Figure 3 Chapman & André (1777)](image)

By permission of Essex Record Office Document MAP/CM/37/4.

**Ordinance Survey Preliminary Drawing (1799)**

The Preliminary Drawing for the One-Inch map (figure 4) shows the Lime Brook flowing eastward from Woodham Mill, past Maldon Jenking and entering the Blackwater Estuary at Limbourne Creek. Another un-named stream initially follows the eastwards path of the Lime Brook that had been shown on the 1777 plan but, instead of then flowing to the south-east, continues eastwards, passing to the south of Brick House Farm. Presumably this links, although it is not apparent from the map, to the watercourse that flows eastwards from Mundon Road to the pond. The latter corresponds to the watercourse and pond shown on the 1721 survey (figure 2).

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6 British Library [http://www.bl.uk/onlinegallery/onlineex/ordsurvdraw/m/zoomify82297.html](http://www.bl.uk/onlinegallery/onlineex/ordsurvdraw/m/zoomify82297.html)
**Ordnance Survey One-inch Old Series Sheet 1 NE (1805)**

The published version of the one-inch map (figure 5) shows a similar general disposition of watercourses to the Preliminary Drawing. However the courses are more irregular. Areas of marshy ground along the watercourses are more extensive than those on the Preliminary Drawing. The published map does not show the pond that was on the Preliminary Drawing.

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*Figure 4 OS Preliminary Drawing (1799)*  
*By permission of British Library Shelfmark: OSD 139 pt. 3; Item number 8.*

*Figure 5 OS One-Inch Old Series First edition Sheet 1 (1805).*
**Greenwood 1825 1:65,000 map**

This map (figure 6) shows the two watercourses broadly as the 1805 Ordnance Survey map and, as with that map, only the southern one bears a name, in this case Limburn Brook. Whilst the line of each is drawn more smoothly than on the Ordnance Survey map, it is made very clear that the northern stream flows to the west of Mundon Road before resuming an eastward path. It can also be seen that the northern stream runs alongside a track to the west of Fambridge Road.

![Figure 6: C. & I. Greenwood 1:65,000 Map of Essex (Surveyed 1824 & Published 1825). Courtesy of Pierre Joppen.](image)

**Ordnance Survey One-inch Old Series 1844 Re-engraving and later editions**

The 1844 map shows the watercourses in the same location as the 1805 map. However as seen on figure 7 it is now the northern stream that is labelled as the Limebrook with no name given to the southern stream. This time the map makes clear that the stream to the east of Brick House runs adjacent to the west side of Mundon Road. Other differences include an altered alignment shown for the road south of the crossing of the stream close to Silly House.

![Figure 7: OS One-Inch Old Series re-engraving Sheet 1NE (1844).](image)

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The later edition used for the David & Charles reprint \(^8\) shows the railway from Woodham Ferrers to Maldon, opened in 1889,\(^9\) crossing the watercourses which are shown unchanged from those in figure 7. This is confirmation, if any is needed, that the revision was confined to the insertion of railways.

**Tithe Award Map of St. Mary, Maldon 1845**

This map (figure 8), produced at a scale of 1 inch to 4 chains, from a survey by Robert Baker, shows the three ponds that had appeared in the 1721 survey. It also shows the stream flowing from the easternmost of these ponds southwards towards South House Farm. However the northern stream initially flowing eastwards from the direction of Limebrook Farm. The course is almost straight until it reaches Fambridge Road, suggesting deliberate re-engineering. After passing Fambridge Road, the stream no longer follows its eastward course but instead is shown to flow south-eastwards joining the southern stream before discharging into Limbourne Creek. This course is generally similar to that shown on Chapman and André’s 1777 map. The Tithe map shows a pond to the south of Brickhouse Farm which appears to be on the former alignment of Lime Brook and in the same position as one had been shown in the 1721 survey. As Limbourne Creek is approached, it is clear that a number of the fields have “wet boundaries” with links into the system of borrow dykes or delph ditches landward of the seawall. The area shown as waste land in the 1721 survey now has the appearance of being a decoy pond and has several watercourses connected to it.

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*Figure 8 Tithe Award Map of St. Mary, Maldon (1845)* By permission of Essex Record Office Document D/CT 227B.
OS 1:10,560 Survey of 1873-1874 (1881) and OS One-inch New Series (1896)

On these maps none of the watercourses are named. The overall pattern is best viewed in the less busy One-inch map (figure 9). The general pattern follows that of the Tithe Survey. An exception is that the original course to the south of Brick House Farm continues to be shown, but is now cut off from the main flow at the point where the south-easterly diversion commences.

The detail from the 1:10,560 map (figure 10) shows the arrangement at the point of the diversion. The original easterly route remains south of Brickhouse farm as a ditch as shown on the larger scale extract. This runs adjacent to the eastern side of the Mundon road over part of its course. It can be noted that the depiction of the road south of Silly House has reverted to that shown prior to the 1844 map.

Figure 9  OS One-inch New Series Sheet 241 (1896) (NLS).

Figure 10  Detail near Brickhouse Farm from OS 1:10,560 Essex Sheet 54 (Surveyed 1873-4 & Published 1881) (NLS).
The Six-inch map reveals a series of ponds lying close to field boundaries south of the inn on Fambridge Road (see figure 11). Although none of the maps examined previously has placed a watercourse in this location, it is speculated that these ponds may represent a former stream. Such a stream may have formerly been used to define the Liberty and Parliamentary boundaries shown close by.

Figure 11  Ponds near Royal Oak from OS 1:10,560  Essex Sheet 54(10)  
(Surveyed 1873-4 & Published 1881) (NLS).

**Ordnance Survey 1:2500 Revision 1895 (Published 1897)**

It is necessary to resort to the 1:2500 map (figure 12) to view the next significant changes to the stream that had been cut off to the south-west of Brickhouse Farm. Its direction of flow has been reversed and has now been re-connected to the main channel flowing towards Limbourne Creek. A separate stream now flows eastwards from Mundon Road.

Figure 12  Background  1:10,560 with changes in detail from OS 1:2500  
Essex Sheet 54(10) (Revised 1895 & Published 1897) (NLS).
Ordnance Survey 1:10,560 Revision 1919-1920 (Published 1924)
The previous maps were limited because they did not show all elements of drainage. The 1924 maps show the direction of drainage in some ditches that formed field boundaries, even when they were not wide enough to be mapped as separate entities, and enable a more comprehensive picture of drainage patterns to be established (figure 13).

One-inch New Popular Edition (Fully revised 1930 and published 1945)
Apart from the omission of the more minor ditches, as shown in figure 14, this shows little difference from the larger scale maps of a decade previously.
**1:25,000 1983 Pathfinder and 1998 Explorer**

The expansion of the urban area has resulted in elements of the open drainage system being replaced by piped sewerage. Outside of the built-up area, as part of a scheme to improve agricultural drainage in the late 1960s/early 1970s, the sinuous course of the Lime Brook has been replaced by a linear section following an existing field boundary to the west as shown in figure 15 from the 1998 Explorer map.

*Figure 15 OS 1:25,000 Explorer Sheet 176 (1998) showing new course of Lime Brook following late 1960s/early 1970s drainage scheme.*

**Discussion**

Ovenden suggested that One-inch OS maps, especially those postdating the Old Series, were too generalised for detailed study.\(^{10}\) Hellyer and Oliver speculated that this statement might be applicable to those after the Old Series mapping, but more thorough investigation was needed before conclusions could be reached on the Old Series.\(^{11}\) I believe in view of the current study the reputation of the later mapping can be redeemed and present as my evidence an annotated version of the Environment Agency’s Main River Map (figure 16).

The 1799 Preliminary Drawing and the 1805 Old Series One-inch map show a watercourse A-B-C-D-E-F-G from Woodham Mortimer passing to the north of Maldon Jenking farm and discharging into Limbourne Creek. The 1825 Greenwood map also shows this but with a simplified line, calling it Limburn Brook. Subsequent OS mapping, shows little change to the route of this watercourse and, within the limitations of scale, the one inch maps are a reasonable representation. One aspect that the recent mapping cannot show is

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that this watercourse no longer discharges into Limbourne Creek at Point G. As a result of the late twentieth century drainage improvements, discharge is now at Point H.

The Preliminary Drawing and the 1805 Old Series map shows a northern unnamed watercourse from Limebrook Farm following the line I-J-K-M-N-O-P. It must be assumed that this linked, perhaps by a ford along the road, to position Q from which the watercourse continues to a pond shown on the Preliminary Drawing at position R. The 1825 Greenwood map and the 1844 re-engraved One-inch map make clear that these watercourses are linked by a channel to the west of Mundon Road. It is not possible to say whether this corrects previous mapping or represents the construction of a channel to replace the conjectured ford. Neither of these maps show an outlet from the pond at R. However the 1721 survey by Westminster Abbey, not only showed the section between Q and R, including the pond, but also an outlet from the pond to positions S and T. The section R-S-T reappears on the 1845 Tithe map, the Six-inch sheet surveyed in 1873-1874 and the 1896 One-inch map as well as the New Popular edition. As the current Main River map shows the section R-S-T in apparently the same location, albeit in culvert beneath a former twentieth century landfill between R and S, as in the 1721 survey, it seems unlikely that it ceased to exist for a period during the early nineteenth century. In this respect the later One-inch maps appear more reliable than the Old Series.

The straightening of the watercourse between J and L shown on the 1896 one-inch map is also shown on the Six-inch map (surveyed 1873-1874) and is thus
genuine, not just a simplification. In 1844 and 1896 the OS have transferred the name Limebrook to the northern watercourse.

From the 1845 Tithe map it is apparent that the northern stream had been diverted at Point N to flow southwards to join the southern stream at Point E. It is notable that this map no longer shows a watercourse between N and P. However it does show a pond at a point along that former line, in a position similar to that on the 1721 survey. By the time of the 1873 survey a watercourse had been restored between points N and P and that water flowed between P and Q on the east side of Mundon Road. The 1895 large scale mapping shows a subsequent reversal of flow the drainage direction of the portion of the northern stream between Points N and P had been reversed and that this truncated section was now a tributary to the diverted main watercourse. The New Popular edition of the one inch map also showed this reversal. The 1983 *Pathfinder* and 1998 *Explorer* maps accurately reflect the new cut southwards of point M.

Turning now to the 1777 Chapman and André map: this did not show the B-C-D-E-F-G portion of the southern watercourse. Instead from B it is shown following the approximate dashed path between B and K where the northern stream joined it as a tributary. The combined stream then flowed eastward to around Point L before heading south-eastwards along the approximate dashed line to Point X, then following the path X-E-F-G to Limbourne Creek. The Chapman and André map also shows as a tributary the section V-W-X. This does not appear on the 1799 Preliminary Survey, nor the 1805 and 1844 Old Series maps, nor the Greenwood map but is shown on the 1845 Tithe map, the Six-inch map, surveyed 1873-74 and the subsequent revised one-inch sheet of 1896. It remains on the New Popular edition and forms part of the Main River, Woodham Mortimer (alias Hazleigh Hall) Brook. Again it adds confidence to the post-Old Series one-inch maps for historical studies.

From the foregoing it would appear that the 1896 Revision and New Popular Editions of the OS One-inch maps present, within the limitations of scale, a reasonable representation of the watercourses but that the Old Series cannot be relied on to show all the watercourse features.

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*That calls for a drink ...*

Members numbers 1 and 2, Dr Yolande Hodson and Dr Christopher Board, raise their glasses in a belated toast to celebrate the fortieth birthday of CCS (which was actually in 2020, but went unmarked - apart from a ‘birthday edition’ of *Sheetlines* - due to the pandemic).  
[Photo: Chris Dean]