3.70 21 MAY 1382 DOVER STRAITS

This was certainly one of the largest and most damaging earthquakes to have affected the British Isles, along with the 6 April 1580 earthquake, which it strongly resembles. The epicentre was offshore in the region of the Dover Straits, and the effects were observed both in SE England and the Low Countries, though there are fewer continental sources available. The event has been studied extensively in Melville (1982), Ambraseys and Melville (1983), SHWP (1995) and Melville et al (1996). The assessment here draws partly on the last two of these references, though care has to be taken to remove assumptions that the shock was necessarily felt at every place where someone who heard about the event made a note of it. Given that the shock was damaging in London, once can be fairly certain it should have been very perceptibly felt in, for instance, Leicester, though Henry Knighton's Chronicle, a contemporary source written in Leicester, doesn't actually record this (Lumby 1889). Similarly, one must be wary of assigning an intensity to Bruges on the basis of a chronicle *probably* written in Bruges, which says that several buildings were thrown down in *Flanders* (Melville et al. 1996).

While it is common in historical investigations of earthquakes in, say Italy, to look to records of repairs and related expenses as a primary source of information on earthquake damage, in Britain this type of information is almost never available. The 1382 earthquake is an exception, and some of the damage can be reconstructed from documents dealing with repairs. Grove (1981) made a study of Hollingbourne, Kent, and reports that the accounts of William Topclyve who farmed the manor of Hollingbourne for the monks of Canterbury include an entry recording that repairs to the great house and church of Hollingbourne after the earthquake amounted to 48 shillings and twopence. (Grove, 1981, notes for comparison, that in 1375, 25 shillings would buy 100 feet of ashlar stone from local quarries). Financial relief for the rector of Hollingbourne is ordered in a letter from the Archbishop, who indicates that the chancel of the church suffered "grave ruin", and Grove (1981) also notes the extreme thickness of the post-earthquake walls of the nave of the church, and the curious mixture of building materials in the chancel walls. Canterbury Cathedral itself was damaged: the east window of the chapter house, the west window of the church and several other stone buildings inside and outside the monastery were broken, the free-standing bell-tower was destroyed and damage was done to the iron screen of the organ (Davis 1934; see also Blore 1945, Gardiner 1945). Harvey (1945) reports that the Infirmary chapel was seriously damaged, also the east walk of the old cloisters; he suggests that the earthquake led to the stoppage of work on the new nave, in progress since 1378, and which was not resumed until the 1390s. Damage extended as far as London; the archives of St Paul's cathedral contain an indulgence from the year 1387 for the repair of the Cathedral cross from the earthquake damage of five years before (Sparrow Simpson 1880). The Chronicle of Bury St Edmunds states that both St Paul's and Westminster Abbey were damaged (Gransden 1964). An unreferenced memorandum in BGS archives that the church tower of St Bartholomew the Great, London, was destroyed by the earthquake seems to trace back to Webb (1921), who speculates that earthquake damage may have been the reason for rebuilding of the bell tower in 1405. Similar suggestions have been made with regard to other localities – Woodruff (1933) queries whether the rebuilding of the south-west tower of Canterbury Cathedral in 1424 was related to earthquake damage, and Grove (1981) considers that it may be significant that at about this time the church of St Mary's, Maidstone was pulled down and entirely replaced by the present church of All Saints'. Melville et al. (1982) make a similar speculation as regards building work at Saltwood.

Amongst the political songs of the time (Wright, 1859) is found a stanza that reads as follows:

For sothe this was a Lord to drede,
So sodeynly mad mon agast;
Of gold and selver thei tok non hede,
But out of ther houses ful sone thei past.

Chaumbres, chymeneys, al to-barst,
Chirches and castelles foule gon fare;
Pinacles, steples, to grounde [h]it cast;
And al was for warnyng to be ware.

Taking this to be a general description of the effects of the earthquake, most likely in London, one can draw the conclusion of considerable panic, fall of chimneys and other upper parts of buildings such as steeples and an intensity of around 7 EMS, or 6 if one allows for some exaggeration. Sources imply that damage was widespread, and while it is hard to assign intensity directly to the information from Canterbury and Hollingbourne, from comparison with other earthquakes that caused general damage to churches, it is likely that intensities were in the range of 7-8 EMS in Kent. It is quite likely that 8 EMS may have been reached somewhere. In Flanders, the shock was strong enough to cause several buildings to be thrown down, and many chimneys were overturned, suggesting intensities of at least 7 EMS.

The total extent of the felt area is not well documented, but may be assumed to be large. A book of hours in the Fitzwilliam Museum, Cambridge (James MS 57) contains an annotation mentioning the earthquake as “universal throughout the whole of England”.

Melville et al. (1996) consider that in view of the strength of shaking in Flanders and the Netherlands, which is rather better reported than effects in Northern France, the epicentre was most likely north-east of the Dover Straits, offshore from the North Foreland, and this conclusion is endorsed here.

Place	*Latitude*	*Longitude*	*Intensity*
Brussels	50.83	4.33	F
Canterbury	51.27	1.08	7-8
Douai	50.37	3.07	5
Flanders	51.00	4.50	~7
Hesbaye	50.58	5.25	F
Hollingbourne	51.25	0.65	7-8
Leiden	52.15	4.50	5
London	51.51	-0.08	6-7
Maidstone	51.27	0.52	D?
Picardy	50.00	3.50	F
St Omer	50.75	2.25	F
Saltwood	51.08	1.08	D?
Tournai	48.82	0.05	5
Utrecht	52.08	5.13	~4
Ypres	50.85	2.88	5-6

Table 26 - Data for the earthquake of 21 May 1382

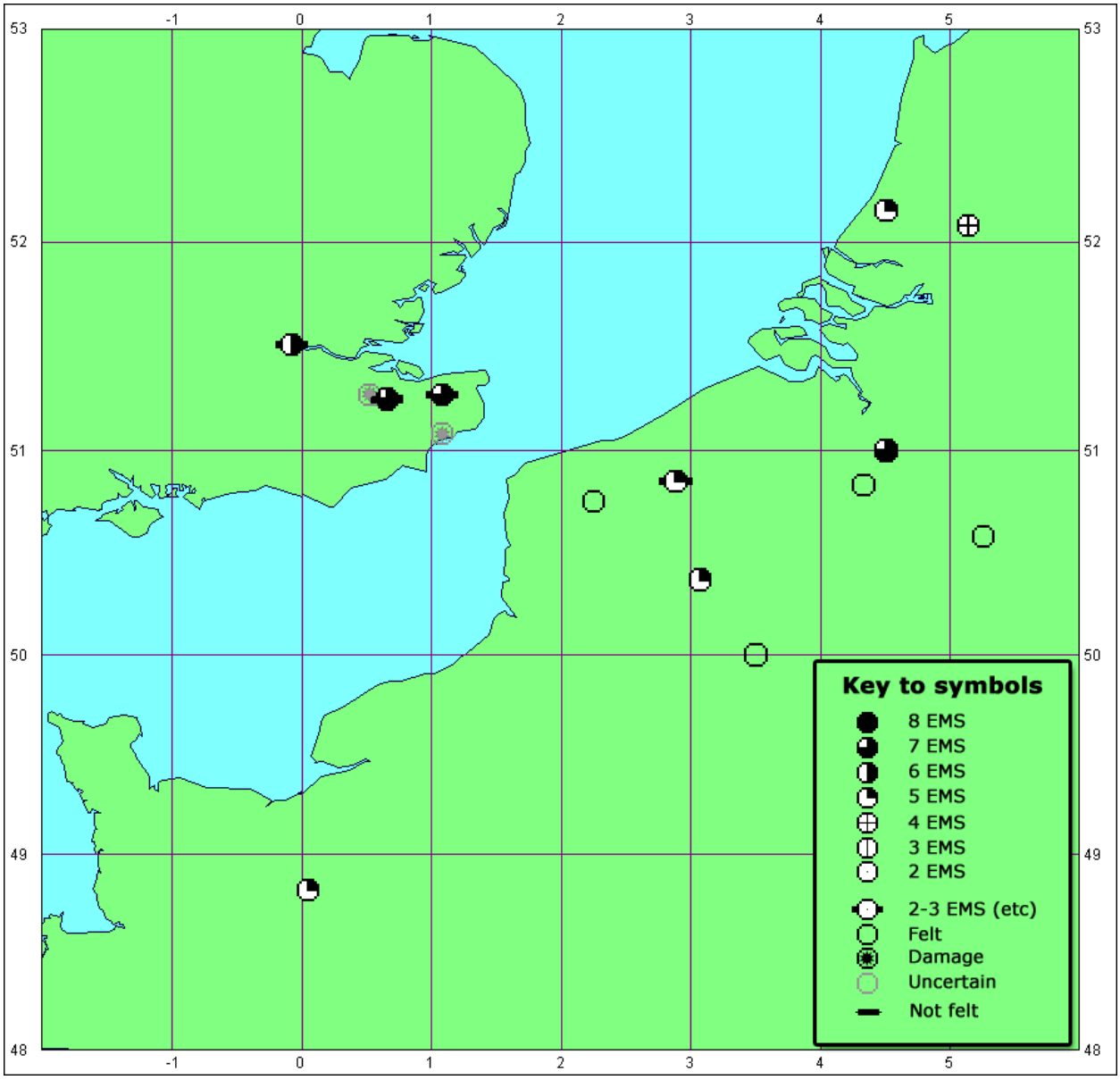

Figure 25 - The earthquake of 21 May 1382