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THE LONG HUNDRED AND ITS USE IN ENGLAND.

CONSIDERABLE attention has of late been drawn to the "long" hundred (120) owing to recent novel theories of Old English measurements built upon the basis of this hundred. This long hundred is of very great importance, for it throws considerable light upon that early history of the European nations that is being gradually unfolded by the study of comparative philology. As such it has of late years received the consideration of several German philologists. One of the most eminent of these, Prof. Kluge, of Jena, has recently pointed out to me that the evidence of its use in England has never been collected. As I happened to have some notes by me concerning this long hundred, I have decided, at his request, to here put them on record.

This hundred of 120 was, there is every reason to believe, the original hundred of the Teutonic tribes. One proof of this is that sums expressed in this way form, almost without exception, the basis of the system of legal fines of the various tribes.¹ Another proof is that amongst the Teutons who longest preserved their native customs unimpaired by the influence of Latin Christianity, the hundred was generally the six-score hundred. It is only this Teutonic heritage that can explain the fact that in Old Norse the *hundrað* is, unless otherwise qualified, this long hundred. This qualification consisted of the neut. adj. *tió-ratt*, "decimal", to signify the short hundred, which, as Pal Vidalin concluded, was introduced amongst the Northmen in the train of Christianity.² A corre-

¹ Wilda, *Das Strafrecht der Germanen*, 125, 330, 358, 363; K. Lehmann, *Der Königsfriede der Nordgermanen*, 51.

² See the quotation from his *Skyringar* in Vigfusson's *Icelandic Dictionary*, s. v. "hundrað".

sponding adj., *tolf-rætt* (Icel. *tölf-rætt*), "duodecimal", was used in the few cases when it was necessary to distinguish a hundred as a long hundred. But, as Pal Vidalin remarks, this necessity seldom arose, for every one knew that the long hundred was meant when native measurements, etc., were in question. Indeed, so familiar were the Icelanders with this long hundred that the learned Are (*Are hinn fróðe*), in speaking of the reform of the Icelandic calendar, describes the year as consisting of 304 days, whereas it should contain 305 days.¹ Here the hundreds are obviously long hundreds ($3 \times 120 = 360$).

If we now turn to the oldest monument of Teutonic, namely Wulfila's Gothic Bible, we shall find that he renders *ἐκατόν*, when it occurs in the plural, by *hund*. In the singular he uses *taihun-taihund*, "tenth decade", and even translates *ἐκατονταπλασίον* by *taihun-taihund-falps* (*falps* = Eng. *fold*). This suggests that the Goths used a hundred of 120, and this view is supported by the translation of *πεντακοσίους ἀδελφοίς* of 1 Cor. xv, 6, by *fimf hundam taihun-tēwjam brōþrē*, where *taihun-tēws* means "decimal".² The *tualepti* of the *Lex Salica* has been cited to prove that the Salian Franks also used the long hundred.³

The Teutonic duodecimal system, which is so well preserved in the system of legal fines, is obviously the origin of this hundred of 120. Prof. Kluge, *Grundriss*, p. 405, explains it as arising from an amalgamation of the decimal and duodecimal systems, because, as the decimal hundred consists of 10×10 , so should the duodecimal one consist of 12×12 . But this explanation involves the difficult assumption that the Teutons compromised the difference between the (theoretically) perfect duodecimal hundred of 144 and the decimal hundred of 100 by reducing the larger

¹ *Islendinga-bók*, ed. Möbius, c. 4: "höfðo talit í tveim misserom fjóra daga ens fjórða hundraps," that is, having counted three complete hundreds, they went on to count four units out of the fourth hundred. *Ibid.*, in fine: "At retto tale ero í hverjo are v. dagar ens fjórða hunþraps," counting in the same way five out of the fourth hundred.

² Holtzmann in *Germania*, ii, 424. I owe this and many other references in this article to Prof. Kluge, who has armed me with an advance copy of his admirable article on the pre-history of the old Teutonic dialects, which will appear in the next part of Paul's invaluable *Grundriss der Germanischen Philologie*.

³ *Tualepti* is from a prim. Teut. **twalif-ti-s*, O.N. *tylpt*, a fem. noun corresponding to the Sanskrit fem. abstracts *shas-ti-s*, "sixhood" (O. Bulgarian *šestī*, O.N. *sētt*), *sapta-ti-s*, "sevenhood", *aśi-ti-s*, "eighthood" (O.N. *ātt* = **ah-ti-s*), etc., which came to be used, as *tualepti* seems to be, to mean decades. See Johannes Schmidt, *Die Pluralbildungen der Indogermanischen Neutra*, 14 294, n. 1, 298.

denomination to 120. In default of any other explanation, I venture to offer another solution of the difficulty.

The ten primary numbers were, there can be little doubt, regulated by the number of fingers. All other numbers arise from addition to, or multiplication of, these primaries. One obvious way of progression was to represent each primary number by a decade. Thus, the first decade being represented by the already existing primaries, two was represented by twenty, three by thirty, and so on. Consequently the decade answering to ten was 100, which is only accidentally a multiple of ten by itself. This is shewn by the fact that in the next stage of progression, that of representing each primary by a hundred, the head of the series is not 100×100 but simply the tenth hundred. The Aryan name for the hundred was the neuter **kmtó-m* (Skt. *çatá-m*, Greek *é-κατό-v*, Latin *centu-m*, Lith. *szimta*, Goth. and Old Eng. *hund*). But as this word is used to form denominations for the decades in Sanskrit, Zend, Latin, Greek, and Old English, it is obvious that it cannot have originally meant "hundred". It has long been regarded as a contracted or elliptical form, and the latest suggestion is that it represents an original **tkmtó-m*, from **dekmtó-m*, "tenhood", the words "of decades" being understood. In other words, *kmtó-m*, "hundred", is simply the tenth decade.

The Teutonic dialects preserve the common Aryan names for the primary numbers, but when we advance beyond these we find the Teutonic names differing considerably from those of the other Aryan tongues. The Aryan name for eleven simply expresses the addition of one to ten (Skt. *ēka-daçan*, Greek *év-δεκα*, Latin *undecim*, etc.), and twelve similarly records the addition of two to ten (Skt. *tvā-daçan*, Greek *δύ-δεκα*, Latin *duo-decim*). But in Teutonic this system does not, apparently, begin until thirteen = 3 + 10 (Goth. *þri-taihun*, O.H.G. *drī-zēhan*, O.E. *þrī-tēne*, O.N. *þrettān*). The Teutonic names for eleven (Goth. *ain-lif*, O.H.G. *ein-lif*, O.E. *end-leofan*, O.N. *el-lifo*), and for twelve (Goth. *twa-lif*, O.H.G. *zwe-lif*, O.E. *twelf*, O.N. *tolf*) clearly embody the names for one and two, but it is not certain that the suffix means ten. This suffix represents a Teutonic **līpe*, derived, by a second sound-shifting, from **līge*, which forms the suffix to the Lithuanian numeral names from 11 to 19 (*vėno-lika* 11, *dvy-lika* 12, etc.). Bopp was led by this Lithuanian use to suggest that this termination is a relic of a primitive name for ten, and Grimm, *Geschichte der Deutschen Sprache*, p. 246, favoured this view. But this is a mere hypothesis, having only the Lithuanian uses to support it,

The question now arises, Why has Teutonic preserved this obsolete and mysterious suffix in the case of 11 and 12 only? Grimm suggested that this was owing to the influence of the duodecimal system. The explanation that I now wish to propose is that the Teutons, under the influence of this duodecimal system, gradually came to regard 11 and 12 as primary numbers, and hence adopted for them a distinct suffix. Having come to look upon 11 and 12 as primaries, it was natural that they should, when they came to the decades, continue them to twelve. Thus where the older system finished the decades at 100 (10th decade), the newer one went on to 120 (12th decade). This explanation is, in some measure, countenanced by the fact that the Teutons continued the hundreds in like manner up to twelve, thus obtaining a thousand of 1200.

Further support for this theory may be found in the Teutonic names for 100 and for 120, which clearly expressed the meanings "tenth decade" and "twelfth decade". The decades are distinguished in Teutonic by the addition of the word *teğus*, "decade", connected by Brugmann with Skt. *daśāt*, Greek *δεκάς*. Thus we have for 20 Gothic *twaitigjus*, O.H.G. *zwein-zug*, O.E. *twēn-tig*, etc. When we reach 70 a change in the denominations occurs. Gothic drops the suffix *tigus* and substitutes *tēhund* of the same meaning (70 *sibun-tēhund*, 80 *ahtau-tēhund*, 90 *niun-tēhund*, 100 *taihun-taihund*). The new suffix represents, according to Prof. Kluge, an Aryan *dēkmta*, "decade", another form of *dēkmta*, which forms the decade-names in Sanskrit, Zend, and Latin (50 *pañcā-śāt*, *pañcā-satem*, *quinqua-ginta*), and, in Greek (*πεντή-κοντα*).¹ The latter form in the strong grade form (*d*)*komta*, is also preserved, according to Prof. Kluge, in the Old Saxon prefix to the higher decades (70 *ant-sibunta*). In O.H.G. the decades from 70 to 120 have in the oldest MSS. the suffix *-zo* instead of the *-zug = teğus* of the earlier decades. Old English, probably owing to some re-formation, preserves the suffix *-teğus* and prefixes, tautologically, *hund* (70 *hund-seofon-tig*, 80 *hund-eahta-tig*, 90 *hund-nigon-tig*, 100 *hund-tēontig*, 110 *hund-endleofan-tig*, 120 *hund-twelf-tig*).² The forms of the numerals in Old Norse have been levelled, but the old distinction in the naming of the earlier and the later decades is recorded in the adjectives signifying "containing or consisting of

¹ The first syllable disappears according to rule. See Schmidt, p. 295.

² It is noticeable that the Lauderdale MS. of Alfred's *Orosius* sometimes omits the *hund* before the names of the higher decades.

so many decades".¹ Grimm suggested that this difference in the denomination of the decades before and after 60, or, in other words, in the first and second halves of the great hundred, is another relic of the Teutonic duodecimal system.

The preservation in O.E. of the term *hund-twelf-tig*, "twelfty", for the head of the series of decades is very remarkable, but there is every reason to believe it to be an ancient denomination. Indeed, Grimm, *Gesch. d. Deut. Sprache*, p. 251, supposed that the other Teutonic dialects had originally corresponding designations. The decade name "tenty" for 100 exists, as we have seen above, in Gothic, and also in O.H.G. *zēhan-zo*, later *zēhan-zug*, and in O.N. *tīu-tegir*, which has also *ellifu-tegir* for 110. But in O.N. *hundrað* has quite ousted the older **tolf-tegir* for 120. In O.H.G. the single hundred is invariably *zēhan-zug*, and plurals are sometimes formed by adding numeral adverbs, as *zwiro zēhanzug*, "twice tenty". But as a rule *hunt* is used for the plural, just as, in Gothic, this word coming into use in the singular at a very late period, whilst *hundert* does not occur until the twelfth century. Thus our evidence seems to shew that both 100 and 120 were known to the Teutons by decade-names, and it is possible that the use of the word *hund* for a plurality of hundreds was at first an elliptical expression referring to the *hund-twelf-tig* as the *hund* or decade *par excellence*. In translating Greek and Latin writers the word *hund*, although restricted to 120, might be used to translate *ἐκατόν* and *centum* in the plural, since in most passages it would make little real difference whether the short or the long hundred was understood by the readers. With constant use in this way, the word *hund* seems to have been also applied plurally by the Teutons to the short hundred, and eventually it came, as in O.H.G., to mean exclusively the short hundred. It was natural that it should also come to be used for the name of the single hundred.

The history here sketched in outline can be traced almost step by step in Old English. The instances of the use of *hund-tēontig* for 100 are very common, so that it will be necessary to quote very few examples. In the Laws of Ine, c. 70, § 1, we have *hund-tēontig æla* (100 of eels), and in 955 *centenis aestimatam mansiunculis* is translated þa *hund teontiga hida land-boc*.² The pannage of 100

¹ Thus these adjectives are for 20 *twi-tugr*, 30 *þri-tugr*, 40 *fer-tugr*, 50 *fimm-tugr*, 60 *sex-tugr*, but for 70 *sjau-ræðr* (*sjau-tugr* also occurs), 80 *ätt-ræðr*, 90 *ni-ræðr*, 100 *tī-ræðr*, 120 *tolf-ræðr*.

² *Cartularium Saxonicum*, iii, 83, 18.

swine is expressed in the same year as *hund-teontiga swina ingang*.¹ Ælfric, in his Latin grammar (*circa* A.D. 1000), in the chapter on numerals, renders *centum* (*C*) by *hund-tēontig*, the ordinal *centesimus* by *se hundtēontigoða*, and even *centumuir* by *hundtēontigra manna ealdor*.² But plurality of hundreds is represented by *hund*. In King Alfred's translation of Gregory's *Pastoral Care* 144,000 is translated by *hundtēontig and feowertig ond feower þusendo*,³ and he refers to the 118th psalm as *on ðæm eahta ond hundælleftiogoðan psalme*⁴ (in the eight and eleventieth psalm). In his Orosius, *hund* frequently translates *centum* in the plural, and is used occasionally in the singular.⁵ He, however, represents *centum* by *hundtēontig* in one case.⁶ In the translation of Beda attributed to Alfred *centum* in the plural is in the same way rendered by *hund*, as, *e.g.*, in giving the length of Britain,⁷ but in one case *hundtēontig* is used in a marked way for the decimal hundred.⁸ In King Alfred's will, 880-885, *hund* occurs both in the plural and in the singular, but a sword worth 100 mancuses is described as *on hund tēontigum mancusum*.⁹

So far the *hund* seems to be restricted to the short hundred, but it was clearly applied also to long hundreds. In the case of the Parker MS. of the Chronicle (A) the *mid CCL hunde scipa* of A.D. 893 and *sum hund scipa* of A.D. 894 may be either long or short hundreds. We have in the 894 case another early instance of *hund* in the singular. A clear case of *hund* meaning 120 is afforded by a charter of *circa* 984, wherein the contents of twenty-six estates belonging to Winchester are given separately in Roman

¹ *Cod. Dipl.*, iii, 283, 12.

² Ed. Zupitza, 281, 20; 283, 14; 28, 3.

³ Hatton MS., ed. Sweet, 409, 9.

⁴ *Id.*, 465, 23.

⁵ "An hund monna," 70, 36 (an addition of the translator's); "an hund þusenda gehorsedra" = *cum centum millibus equitum*, 124, 34; "iiii. ond an hund scipa" = *centum et quatuor naves*, 176, 13; "M. wintra ond an hund," 288, 28.

⁶ "Mid xxx. elpenda and Cgum" = *cum elephantis centum triginta*, 178, 1. Cosijn, *Altwestsächsische Grammatik*, ii, § 67, explains the *-gum* as referring to the xxx (*þritigum*), but it is, I think, more probable to regard *Cgum* as an abbreviation of *hundtēontigum*.

⁷ "Breoton . . . is norð ehta hund mīla lang and twā hund mīla brād" = *Brittania . . . per milia passuum octingenta in boream longa, latitudinis habet milia ducenta*, "Hist. Eccl.", I, c. i. See also the Peterborough Chronicle (E), which copies Beda. In the above case there can be no doubt as to *hund* = *centum*, since the measurements were derived by Beda from Gildas, *Hist.*, c. i, who copied them from Orosius, lib. I, c. 2, § 76.

⁸ Lib. II, c. 11: "þusend wintra and hund-tēontig and feower and sixtig" = *millesimo centesimo sexagesimo*.

⁹ *Cart. Sax.*, iii, 179. No contemporary MS. is in existence.

numerals, amounting to 454 hides. In addition there is *an hund hida* at Chilcombe and *hundendlyftig hida* at Whitchurch, besides *oðer healf to Faleðlea*. The total is summed up as *fif hund hida and ehta and hund seofontig hida*¹ = five "hund" hides and eight and seventy. Taking the *hund* at Chilcumb to be 120, and adding the 110 at Whitchurch and the 1½ at Fawley, we get a total of 685½ hides, whereas if we calculate by the short hundred we should have 665½ hides against 578. It is therefore clear that, although there is a discrepancy in the figures, the *fif hund* of the total means five long hundreds. The total meant by the charter is accordingly 678. The *hund hida* at Chilcombe, which thus appear to be 120 hides, are called *c. mansis* in a charter of A.D. 909.² Again, in King Eadred's will, ante A.D. 955, we read *an ic ðam ercebiscop twa hund mancusa goldes beo hund twelftigum* = I grant to the archbishop two "hund" mancuses of gold by the twelfty (hund).³ Here also, it may be noted, the singular is represented by *hund twelftig*.⁴ As the singular is expressed twice by "CXX." in a contemporary Kentish charter of 805-810, whilst *ten hund* are also mentioned, it may well be that *hund* here means *hund-twelftig*.⁵ Five hides (*mansae*) are recorded in a charter of 959 to have cost 120 gold mancuses, and ten others cost 200 gold mancuses.⁶ We might hold that the *ducenti* here means two long hundreds, but the prices of the hides vary considerably in this charter, so that we cannot insist upon this instance. Enough has been here given to shew that *hund* sometimes meant 120, and, on the strength of the cases where we can prove what is meant by *hund*, it may fairly be argued that *hund* in other cases also meant 120.

¹ *Codex Diplomat.*, iii, 203. The Domesday entries of these estates, although they agree in many cases with the contents given in this charter, do not enable us to correct the figures of the charter.

² *Cart. Sax.*, ii, 283; *Cod. Dipl.*, ii, 153. The *c. mansae* in Downton and Ebblesbourne mentioned in this charter and in another of A.D. 932 in *Cart. Sax.*, ii, 381, must also mean 120 hides, unless we assume that C meant both 100 and 120 in the same charter.

³ *Cart. Sax.*, iii, 75, 26; *Liber de Hyda*, p. 153. The charter is thus from a late MS. The compilers of the *Liber de Hyda* have mistranslated this *beo hund twelftigum* by "twelfthy hundryd pund" and "mille ducentas libras". But the editor's translation, *Lib. de Hyda*, p. 348, is even worse: "I give to the Archbishop [Odo] two hundred of mancuses of gold [as archbishop,] besides a hundred and twenty [as bishop]"!

⁴ *Cart. Sax.*, iii, 75, 23, 28.

⁵ Sweet, *Oldest English Texts*, charter No. 37; *Cart. Sax.*, i, 459. Two long hundreds are expressed as "XL. et CC." in a charter of circa 831; *Ibid.*, No. 39.

⁶ *Cart. Sax.*, iii, 264, 29; 265, 3.

In the singular the head of the series of decades, which I have, for convenience' sake, here called by the later name of the "long hundred", was naturally known by its ancient name of *hund-twelftig*. Thus the Parker MS. of the Chronicle, A.D. 893, gives the length of the wood of Andred as *hund-twelftiges mila lang*, and Alfred twice translates *centum et uiginti* of Orosius by *hund-twelftig*.¹ In 1012 Queen Ælfgifu bequeaths two armlets and a neck-ring each of the value of 120 mancuses.² If, as I am inclined to believe, these ornaments were survivals of the old ring-money, it is natural that they should have been made of standard weights or values, as they were in Scandinavia.³ Originally 120 was selected, as it was in the fine system, because it was the highest fixed denomination known to the Teutons, *thousand* simply meaning, as recorded in Old Norse, an indefinite number of hundreds. In the O.E. laws fines expressed by 120 occur in almost every chapter,⁴ and values, measures, etc., are frequently expressed in this way in the charters.⁵

In later times it is obvious that *hund* became, no doubt owing to its constant use to translate *centum*, restricted to the short hundred. We have seen how the Middle English translator of the O.E. charters in the *Liber de Hyda* was puzzled by *hund twelftig*,

¹ Ed. Sweet, 124, 21; 174, 17.

² *Cod. Dipl.*, iii, 360, 18, 23: "twegea bæagas, æigðer ys on hund-twælf-tigum mancussum . . . anæs swyrbeages on hund-twelf-tigum mancussum."

³ An undoubted instance of the use of a gold ring as money occurs in a contemporary Kentish charter of A.D. 822, wherein the king states that he made this grant to Archbishop Wulfred "nec non pro eius placabili pecunia, id est anulus aureus [h]abens lxxv. mancusas, ut ab eo accepi"; Earle, *Land Charters*, p. 101. A *bēah* or armlet of the value of sixty gold mancuses was bequeathed to Bath abbey in Æthelred's reign; *Cod. Dipl.*, iv, 293. Upon the use of neck-rings and arm-rings as money in the north, see Schive, *Norges Mønter i Mid-delalderen*, p. 2.

⁴ The instances are so numerous that it is not practicable to give them in an ordinary footnote. Sums expressed in this way may be found frequently in Ine's Laws and throughout the whole collection up to the so-called Laws of Henry I. The Teutonic duodecimal system of fines, above referred to, is well represented in the O.E. Laws, but a decimal system was also in use. See Mr. Laughlin's essay in the *American Essays on Anglo-Saxon Law*, Boston, 1876, p. 279.

⁵ A.D. 714, "cxx. mansae"; *Cart. Sax.*, i, 193, 30; 195, 5. A.D. 732, "centum xx. plaustra"; *id.*, 215, 19. A.D. 814, "cxx. libras"; *id.*, i, 490, 22. A.D. 832, "cxx. elmes hlafes", alms-loaves; Sweet, O.E.T., ch. 40, Earle, *Ld. Ch.*, 105, 20. A.D. 832, "cxx. mensuras"; *Cart. Sax.*, i, 558, 29. A.D. 833, "pastura centum uiginti porcis"; *id.*, i, 565, 16; 566, 22. A.D. 868, "cxx. denariis argenteis" (endorsed "wið cxx"); Earle, 140, 4. A.D. 875, "c. uiginti mancusas auri purissimi"; *id.*, 142, 8. A.D. 963-975, "hund-twelftig mancæs rēades goldes"; *Cod. Dipl.*, iii, 129, 19.

which he understood to mean 1200. There is a somewhat earlier mistranslation of a charter of 901-909, where "iiii. et c.xi. ueteres porci" are rendered by *feower and hund ændlæftig ealdra swīna*.¹ Here *ændlæftig*, "eleventy" (110), is treated as a compound of *hund* and of *endleofan*, "eleven", so that *hund* is obviously regarded as meaning only 100. Its restriction to the short hundred caused the formation of such new expressions for 120 as *hund-twentig*² and even *hundtēontig and twentig*³ = tenty and twenty! According to the old decade-system the first of these denominations would have meant 200.

The word *hundred* does not come into use until a comparatively late period.⁴ This fact is an argument against the early origin of the territorial Hundreds, just as the fact of the Northamptonshire *Hundredu* containing 100 hides each is proof of their late origin.⁵ In 1002 *ān hundred wildra horsa* are referred to in the interesting will of Wulfric Spott,⁶ but we cannot determine the size of this hundred. According to Domesday, *hundred* was used to mean 120,⁷ but as this evidence comes from such a Danish stronghold as Lincoln, it is not free from the suspicion of Danish influence. But when the *Dialogus de Scaccario* (12th cent.), l. i, c. 17, says that the hide "a primitiua institutione ex centum acris constat", it is clear, as Arthur Agarde contended three centuries ago,⁸ that a long hundred

¹ *Cart. Sax.*, ii, 282; *Cod. Dipl.*, v, 167.

² A.D. 965-975, "þæra hund-twæntiga hida æt Wyrðæ"; Thorpe, *Diplomatarium Anglicum*, 526, 32; *Cod. Dipl.*, iii, 127, 9. Thorpe impossibly translates this as "the twenty hides". *Hund-twentig* is also used by Ælfric.

³ Book of Martyrs, in Cockayne's *Shrine*, 85, 10. This obviously late expression is fatal to Cockayne's idea that this is a work of King Alfred's.

⁴ The quotation from the Peterborough Chron. A.D. 656 in Bosworth-Toller is from a 12th century translation of a spurious charter.

⁵ See the O.E. list printed in Ellis, *Domesday Book*, iv, lix; *Introd. to Dom. Bk.*, i, 184, and in Cockayne's *Shrine*, p. 184, who dates it between 1109 and 1118.

⁶ Earle, *Land Chart.*, p. 221; *Cod. Dipl.*, vi, 149, 25, where it is printed *an hundra*. Kemble, however, used a late transcript.

⁷ D. B., i, 336a, col. 1 and 2: "In ciuitate Lincolia erant tempore Regis Edwardi nouies centum et lxx. mansiones hospitatae. Hic numerus Anglice computatur, i[d est] centum pro C^{lum} xxi . . . Ex praedictis mansionibus quae tempore Regis Eadwardi fuerunt hospitatae, sunt modo wastae CC. Anglico numero, i[d est] CCXL., et, eodem numero, septies centum et lx. sunt modo hospitatae." The last figure appears to be a mistake for lxx.

⁸ In *A Collection of Curious Discoveries Written by Eminent Antiquaries*, [ed. by Thos. Hearne,] 1775, i, 45. From Agarde the statement has been copied by Kelham, *Domesday Illustrated*, 1788, p. 231, n. 1, and from Kelham it has descended to the local historians, e.g., Nichols, *Leicestershire*, i, xlvi b, Poulson's *Holderness*, i, 14.

is meant. For it is clear that the typical hide consisted of 120 acres,¹ there being a remarkable consensus of evidence, ancient and modern, as to this figure. Mr. Eyton and Mr. J. H. Round have both fixed the contents of the typical ploughland of Domesday at 120 acres.² This figure was, no doubt, chosen for the same reasons as it was for the basis of the fine system, *i.e.*, as the head of the series of decades. When Richard's commissioners in 1198 fixed the ploughland at a hundred acres, there is little doubt that the long hundred was meant.³ A later instance of the use of the long hundred in the same connexion occurs in notes on land measurement printed, from a late 16th century rental, at the end of Mr. Skaife's edition of Kirkby's *Inquests*, Surtees Soc., p. 444: "Memor[andum,] everie Knightes fee conteyneth in acres xxxii^{xx} [= 640], which is dxi^{tie} [5 × 120 + 40] at vi^{xx} to the cth."

It is probable that most of the numerous wares sold in the Middle Ages in England by the hundred were counted by the long hundred. *Fleta*, lib. ii, c. 12, tells us that, in the 13th century, the last of herrings contained ten *milliaria* or thousands, each of which consisted of ten hundreds of six score each, and that the *centena* or hundred of canvas, cloth, and such like, contained six score ells, and the load called a "seem" consisted of six score pounds. Prof. Rogers⁴ says that the long hundred was used in selling eggs, fish, stockfish, wainscot, nails, etc. In the case of stockfish⁵ and wainscot continental influence might be suspected,⁶ but this cannot be the case with nails. In this connexion it is interesting to reflect that the proverbial "tenpenny nail" was a nail sold at 10*d.* for the long hundred.

¹ In the *Historia Eliensis*, ed. Stewart, pp. 129, 130, upon the number of hides in an estate being measured to settle the disputed contents, it was found to consist of "unam hidam per sexies xx. acras", and the two hides at Wilburton contained 240 acres.

² Eyton, *Domesday of Dorset*, p. 22; Mr. Round in *Domesday Studies*, i, 208. Mr. Seebohm also decided upon the same figure.

³ Roger of Howden, iv, 46: "statuerunt, per aestimationem legalium hominum, ad uniuscuiusque carucae wannagium centum acras terrae." Dr. Bryan Walker, in his able article on the Cambridgeshire Survey, *Proc. of Camb. Antiq. Soc.*, v, 102, has already suggested that the long hundred is here meant.

⁴ *History of Agriculture and Prices*, iv, 209, 444, 455, 535.

⁵ According to *Fleta* the hundred of stockfish was 160.

⁶ Although the long hundred is now unknown in Germany, it was known to Adelung at the beginning of this century from the German dialects. Prof. Kluge quotes Nicholas Deter's *Arithmetica Nova*, Hamburg, 1654, as saying "ein Grosshundert ist 6 Steige als Bretter, Dehlen, Wagenschoss, Latten, Posen, Wallnüsse, Schullen, Ruchen, Klippfisch, Kese," etc. To this day deals are sold in England by the Petersburg Standard (Hundred) = 120 cubic feet.

Mr. Pell has jumped at the extraordinary conclusion that because the Anglo-Saxons by a hundred meant 120, therefore they increased every unit in the same proportion. That is, they called 60 fifty, 6 five, and, consequently, when they said 1 they meant $1\frac{1}{5}$. The astounding statement here put last is no deduction of mine, but is an actual assertion of Mr. Pell's. Nothing but the most complete and unassailable evidence would induce us to believe that any body of sane men ever hampered themselves with a double system of numerical notation such as Mr. Pell so confidently asserts the English did. The practical result would be that if A said he held 60 acres, B might consider he was using the ordinary notation and therefore meant fifty, whilst C might consider he was using the Pell numeration and therefore meant 72. Mr. Pell asks us to believe that the double system of notation existed without the Domesday commissioners uniformly adopting one or the other. Canon Taylor, in his eagerness to embrace any new theory, good, bad, or indifferent, has adopted Mr. Pell's monstrous theories, which, thanks to him, have been embalmed for the wonderment of future generations in the *New English Dictionary*. In this monumental work we are told, *s.v.* 'Carucate', that "the normal carucate is either 120 acres or 80 acres by the Norman number (5 score to the hundred) and 144 acres or 96 acres by the English number (6 score to the hundred)." That is, what the English called 120 and 80 acres was really 144 and 96 acres ($1 = 1\frac{1}{5}$)!

Now let us examine the basis of this strange theory. It clearly depends upon the fact that the Anglo-Saxons called 120 a hundred, and upon the assumption that they divided this 120 into 100 parts, so that 1 meant $1\frac{1}{5}$. This is as much as to say that, because we call 112 lbs. a hundredweight, we call 56 lbs. fifty, and so on. Apart from the intrinsic improbability of 1 ever meaning $1\frac{1}{5}$ with any race of men whatever, it is evident that the whole theory rests upon a misapprehension. It is, as will be seen above, hardly correct to say that the Anglo-Saxons called 120 a hundred. The real name was the decade-name *hund-twelftig*, which obviously depends upon a normal unit of $1 = 1$. In the whole range of the A.S. charters, which I have been constantly using ever since I read Mr. Pell's papers in 1885, there is no instance that proves that they ever used 5 to mean 6, or 1 to mean $1\frac{1}{5}$, but there are several instances to shew that they gave them their proper and natural value. Mr. Round, in his scathing exposure of Mr. Pell's figures and theories, has not examined this *Anglicus numerus* theory, but his strong common sense has instinctively led him to

question Mr. Pell's use of it. In the November number of this *Review* Mr. Pell triumphantly parades his proofs of the existence of this practice of calling $1\frac{1}{2}$ one. They are ludicrously inadequate to support any such extravagant assumption. His chief proof, which has already appeared twice in this *Review*, is a table shewing that certain holdings in Great Shelford, Cambridgeshire, described respectively as containing 15 acres and $7\frac{1}{2}$ acres in the Hundred Rolls, are said, in the Ely survey of 1277, to consist of 18 and 9 acres respectively. This is proof, in Mr. Pell's eyes, that the English, even so late as the thirteenth century, called 18 fifteen and 9 seven and a half. It, of course, proves nothing of the kind. The Hundred Rolls are returns of services, etc., due to the King, whereas the Ely survey deals with services due to the Abbot of Ely. Now if Shelford were a case in which beneficial hidation existed—that is, in which the assessment for geld had been reduced by the simple process of reducing the number of hides upon which it was paid—it is obvious that the Hundred Rolls would give the reduced estimates, whilst the Abbot's survey would give the full contents. In other words, it is a parallel to a house being valued at £25 in the overseers' books and at £30 in the landlord's books, and Mr. Pell might just as reasonably argue that this modern practice proved that we still mean thirty when we say twenty-five. This reduction in area in answering to the King does not rest upon presumption, but can be proved. In the Ramsey Chartulary, i, 475, Barton, Bedfordshire, is said to answer to the King for 10 hides, but to the Abbot of Ramsey for $11\frac{1}{2}$ hides and half a virgate, in addition to the croft and cotland. In the Domesday Survey, i, 210 b, col. 2, the manor is entered as answering to the King for 11 hides, although it contained 12 ploughlands, which is just about the figure at which it answered to the Abbot according to the Chartulary. In the same Chartulary, vol. ii, p. 4, we read that Cranwell, in the same county, answered to the Abbot for its actual contents of 11 hides, $1\frac{1}{2}$ virgate, and a cotland of a third of a virgate, besides the demesne of the court, whose contents were unknown. The whole of the manor answered to the King for 10 hides. This is precisely the number of hides given in Domesday (*ibid.*), although there were 12 ploughlands. We see in both these cases that the reduction in estimate agrees with that in the Survey. Now let us take Mr. Pell's instance of Great Shelford. It is entered in the Survey at vol. i, fo. 191a, col. 2, as "Escelforde". We there read that, although there were eleven ploughlands cultivated by eleven teams, the manor was only

assessed to the King at 9 hides and 24 acres. Calculating the ploughland at what all evidence shews to be its normal contents, viz. 120 acres, and deducting a sixth from the eleven ploughlands, we have a result of 9 hides 20 acres. The disparity between this and the 9 hides and 24 acres of Domesday is so trifling,¹ that we may fairly claim that in this manor the assessment was reduced by one-sixth. This is precisely the difference between the two sets of figures given by Mr. Pell, and it is therefore clear that they have no connexion whatever with the imaginary practice of calling 6 five, etc. Mr. Pell's only other evidence, apart from his own calculations, which rest on air, is that the compiler of the *Liber Eliensis* states that Æthelwold bought 12 hides from Leofric, and that the King's charter mentions only 10 hides. It never seems to have occurred to Mr. Pell that the land bought about A.D. 970 as 10 hides might in 1105 or so, owing to extended cultivation, represent 12 hides. But even if this instance were stronger than it is, it would not be strong enough to prove that the English ever called 12 ten. All the fanciful calculations that Mr. Pell has based upon this assumption, including even his delicious "Ready Reckoner" (p. 258), may therefore be safely left to slumber in oblivion by the Domesday student who does not wish to waste his time.

The only abiding principle underlying Mr. Pell's calculations is that the figures in Domesday, or wherever found, have to produce a certain total that Mr. Pell has already fixed upon. To do this virgates may mean hides, carucates may mean virgates, and, in short, anything may mean anything else. This is well exemplified at p. 249 above. Here we have a clear statement that two hides contained 240 acres ("duas hidas duodecies xx. acrarum arabilium"). But this entry has to be made to fit in with other figures previously determined upon, in an equally reckless way,² by Mr. Pell, and so the 240 acres are transmuted into 576! To reach this result, he coolly reads the passage as meaning two hides *each* of

¹ In the *Inquisitio Eliensis*, 501a, the figures are 9 hides 14 acres, but 24 acres in MSS. B and C. The *Inquis. Comitatus Cantabrig.*, ed. Hamilton, p. 47, give 9 hides and 29 acres. The Domesday figures appear to be the correct ones, and this supports Mr. Round's contention that the *Inquis. Com.* is a copy of, and not the original, returns of the Survey.

² That is, Mr. Pell evolves a total of 864 acres "as nearly as possible" from the survey of 1277, whereas the figures given in his original paper only shew, when reckoned at their ordinary value, a total of 596 acres 3 roods, or, accepting Mr. Pell's estimate of the cotters' lands and of Penny Croft, 608½ acres and 3 roods.

240 acres, making 480. It should be pretty clear to anyone that these hides of 120 acres are hides by the great hundred or "hund-twelftig". But not so with Mr. Pell. He says the imaginary hide of 240 acres is reckoned "*Anglico numero*", and he accordingly, on his theory that one means $1\frac{1}{5}$, increases it to 288 acres. And so these houses of cards are built.

It should be stated that the liberties here taken with the figures are palliated by another delusion that plays almost as great a part in Mr. Pell's calculations as the *Anglico numero*. This is that the term *wara* means the idle shift or fallow land of a manor, assumed, when necessary for his theories, to be untaxed, so that an acre of *wara* is—to put it in its native absurdity—"Anglico numero" $1\frac{1}{5}$ acre + $1\frac{1}{5}$ acre. That is one is $2\frac{2}{5}$! The basis of this theory, which is stated by Mr. Pell most dogmatically as a fact, is a guess that *wara* is equivalent to the Low Latin *warrectum*, "fallow land". Not a vestige of proof, other than the superficial resemblance of the two words, is adduced to prove that this is the meaning of *wara*. Yet Mr. Pell goes on contentedly building vast edifices of calculations on this shadowy basis. Even if the guess were true, Mr. Pell's application of the *wara* theory in the case of Wilburton would still be wrong. His survey of 1277 shows that the arable land of the demesne lay in three fields of nearly equal extent. This is pretty good evidence that the manor was in a three-course system of cultivation,¹ so that only one third of the arable land, not one half as Mr. Pell calculates, lay fallow in one year. In the next place *wara* is most certainly not connected with *warrectum*, which is merely a Latinization of the Old French *garect*, *gareit*, etc. (modern French *guéret*). This is derived from the Low Latin *ueractum*, the descendant of the *ueruactum* of Cato and the writers on husbandry. *Wara*, on the other hand, is merely a Latinization of the Old English *waru*, fem., "defence, protection", which is used in Domesday to mean land in a village belonging to a distant manor. From the point of view of the manor such land might be considered as out-lands (*ūt-warū*, *ūt-land*), whilst in the village in which it lay it could be described as inland (*in-warū*, *in-land*) to such a manor. Both these terms, as well as the uncompounded *warū*, occur in the O.E.

¹ He admits this himself, at p. 251 above, where he asserts that the king's officers reduced the assessment of Wilburton of the *wara* lands by one-third. Yet, such is Mr. Pell's inconsistency, that the very same land, p. 249, is assumed to have had half deducted for *wara*. This is how he converts the $608\frac{1}{2}$ acres 3 roods of the survey of 1277 into 864 acres.

charters. This connexion with the O.E. *waru*, which probably obtained in later times the meaning of "inclosure", just as *frid*, "peace, defence", did, inclines me to believe that the *wareland* of the 13th century was arable land which was, as it were, "in defence" and not commonable when the crops were off it. This is precisely the opposite to the meaning given to *wara* by Mr. Pell.

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