

SCOTS 'TRONE' WEIGHT: PRELIMINARY OBSERVATIONS ON THE ORIGINS OF SCOTLAND'S EARLY MARKET WEIGHTS

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One of the factors which restricts our knowledge of Scotland's medieval trade is uncertainty about the nature of the measurement units in which such trade was conducted. In common with other mercantile nations, Scotland had not only well-defined systems of weights and measures for external and internal trade, but also the legal and administrative structures for enforcing their use. The pressure for conformity in the use of weights and measures came from above: the king's revenue depended on the income from crown lands, from the rentals of his principal subjects and from the customs collected at the royal burghs, and his officials were concerned to maximise results. In turn, these pressures were transmitted down the administrative and social scale to be reflected in all aspects of trade and in all payments exacted in kind.

As might be expected, Scotland's weights and measures evolved over time and were influenced by the metrologies of her principal trading partners, notably by England, Flanders, the Hanseatic League and France. The Scottish system may well have been imported from England by David I and his predominantly Anglo-Norman followers in the twelfth century, replacing earlier measurement units of which only the slightest traces survive. Certainly, there are good reasons to suggest a common origin for the medieval metrologies of England and Scotland.¹

The first administrative document which describes the weights and measures of Scotland is an assize which has traditionally been ascribed to David I but which in fact has a more questionable status (Thomson and Innes 1884 [hereafter APS I], 673-4). The 'David Assize' appears in a number of the oldest and best respected manuscript compilations of the Auld Laws: undoubtedly its text is early and it may well reflect substantial aspects of the system in use in the period of David I or his immediate successors. However, our view of it must be tempered with the knowledge firstly that the version that has survived in these manuscript collections is similar to an English administrative document, the *Tractatus de Ponderibus et Mensuris*, datable to the mid-thirteenth century (although surviving in a form attributed to about 1300), and secondly that the David Assize also contains adjustments made to the text after the early fourteenth century.²

Little specific information about Scottish weights and measures is available in the legislative record until an important (but complex) assize of 1426 (Thomson 1814

[hereafter APS II], 12).³ This provides valuable evidence for the weight series then in use, and these weights can be seen to operate in different multiples from those in the David Assize. Such changes, which are broadly away from multiples of 15 and towards multiples of 16, mirror changes observed in the similarly incomplete English record. Taken together, the English and Scottish evidence points to a parallel evolution of the two metrologies through administrative changes of the mid-fourteenth century.

The difficulty facing the economic historian who wishes to use the information contained in these early Scottish assizes is that they cannot be applied at face value: they often appear internally inconsistent and they require to be placed in the context of prevailing custom and practice before they can be interpreted in a meaningful fashion. For example, a failure in the 1750s to appreciate that the early grain measures had been defined as dry determinations (in terms of grain fills from the pint rather than water fills) led to erroneous volumes being calculated for the old capacity measures; and this failure disguises the use of officially-tolerated heaping allowances which are not defined in the assizes themselves but nonetheless must be invoked to account successfully for the progressive enlargement of the measures (Simpson 1991, 3–4; Simpson 1992, 337–50).

The selective scope of assize legislation has proved to be a great obstacle. Nowhere is this more acute than with the Scots heavy-goods weight, called ‘trone weight’, used to regulate the normal traffic of goods in the burgh markets.

Trone weight is not mentioned in any of the early assizes, but it makes a solitary appearance in the reforming assize of 1618 – this was the last separate Scottish assize before English weights and measures were imposed (in theory at least) at the parliamentary Union of England and Scotland in 1707. Unfortunately, no useful information can be gleaned from the 1618 Assize about the use of trone weight: its inclusion is merely to allow its abolition to be recorded:

... that Wight called of old the Trone wight to bee allvterlie abolisched and discharged and neuer hereafter to be received nor vsed (Thomson 1816, 587).

Such a recommendation to abolish trone weight, confirmed when the Act was ratified by parliament in 1624, seems hopeless when the extent of its use is appreciated: as recently as 1613 the Scots Privy Council had described trone weight for the benefit of the newly-created Justices of the Peace as ‘the ordinar and proper wight of the kingdome’ (Hume Brown 1908, 333). The attempt at abolition was certainly unsuccessful – so entrenched was trone weight in market practice that its use soon re-emerged in official papers and it survived well into the nineteenth century. Indeed the heavy trone stones of the various Scottish counties proved to be the most enduring aspect of the old system and trone stones were still in widespread use in the 1840s (Levitt and Smout 1977, 146–52). A Court of Session case of 1894 even decided in favour of the legality of using Sutherland stones in a written contract (Owen 1947, 65).

Although this weight series was referred to in 1618 as having been called trone ‘of old’, the earliest use of the term that has been found is in the second half of the

sixteenth century.⁴ In spite of this difficulty, we can readily deduce that trone weight goes back at least into the fifteenth century, and in all probability is considerably older. Indeed, such a notion can only be strengthened by the association of trone weight, as the principal weight of the market place, with the 'trones', or public scales of the burghs (subsequently known as 'trons'). These large balances were originally installed for the weighing of wool for customs purposes by the king's officials at the royal burghs, and the procedures for operating the trones under the control of the Chamberlain are given in an Act attributed to David II and dated 1365 (APS I, 497: 5 December 1365). The regulations for the Chamberlain's regular inspections of the royal burghs called for the trone weights to be carefully checked against the weights brought by him and adjusted if necessary, and although these regulations are undated they are thought to be of the fourteenth century (*Iter Camerarii*, Ch. 15; *Fragmenta Collecta*, Ch. 50: APS I, 698 (Appendix IV, 334), 729 (Appendix V. 365)).

Trone weight was larger than the ordinary commercial or merchant weight described in the various weights and measures assizes. From definitions recorded in the seventeenth century we can tell that the trone stone was one-and-a-quarter times the ordinary 'trois' stone, and similarly the trone pound was one-and-a-quarter times the trois pound. Since by this period a stone contained 16 pounds and a pound contained 16 ounces, the trone stone could be considered as 16 trone pounds or 20 trois pounds, and the trone pound was 16 trone ounces or 20 trois ounces. An indication of the area of application of trone weight was provided by a quasi-official source in 1624 as 'Butter, Cheese, Wooll, Tallow, and other such Countrie commodities as carryeth refuse': in other words the heavy trone stone was appropriate for coarse goods, with which a certain amount of wastage was to be expected (Huntar 1624, 2). The same source indicated that for some goods the use of trone weight was still officially tolerated, as for example in the weighing of lead, which was conducted in stones of 20 pounds – trone weight in all but name.

The practice of classifying certain materials as heavy goods, to be weighed by a different pound from that for fine goods, was widespread. For example, in both the cities of Florence and Venice, which exerted considerable influence over northern Europe through the wool trade and the international currency of their coinage, there was a 'sottile' pound of 12 ounces for fine goods and a 'grosso' pound of 16 ounces for coarse or heavy goods (Zupko 1981, s.v. *Libbra*). In these particular instances the heavy-goods pound was one-and-a-third times the merchant pound.

Assize legislation avoids describing units such as trone weight because, by convention, legal definitions are restricted to those given in troy weight. Troy is the type of weight used for bullion, but also reserved (in English legislation and therefore presumably in early Scottish practice also) for other specific functions such as the official determination of capacity measure. The English troy ounce is considered as comprising 480 troy grains, with 12 ounces to the troy pound. The grain (of 64.8mg) derives its name from the grain of barley, which by tradition (and with a fair degree of accuracy) has the same mass. Although recent work suggests that the troy system, based on the 480-grain ounce, was not formally introduced into English practice until

the mid-fourteenth century, it is nonetheless convenient to use English troy grains to describe all these early weights (Biggs 1990; Biggs 1993, 16).

In the Scottish weights and measures Assize of 1426 the pound was defined as of 16 ounces, and the volume of the pint measure was given in terms of its water content as 41 ounces, or 2 pounds 9 ounces. Because the relationship of the pint to the later standard pint can be established with confidence, we can be sure that these ounces are troy ounces of 480 grains. Although the Assize tells us that there are 15 pounds to the stone, it provides no information about the type of use of these units. We have to turn to a short preliminary Act, also of 1426, to learn that the stone was 15 'troy' pounds, but that in practical use it was divided into 16 'Scots' pounds. This smaller 'Scots' pound, which is mentioned nowhere else in the legislative record, was divided into 16 ounces, each of 450 grains.

The ounce of 450 grains is known from other contexts. In particular it is known in England as the 'tower' ounce – used to control the minting of coinage at the Tower of London. Twenty silver pennies were coined to the ounce, and the pound of 12 tower ounces therefore had the same mass as 240 pennies or one monetary pound. But the use of this ounce was not restricted to the operations of the English Mint, as is sometimes supposed: it had a very prominent European role as the ounce of Cologne, and was also used at Antwerp, one of the most significant centres of medieval commercial trade. The larger ounce of 480 grains had an equivalent status as the ounce of Bruges and the ounce of the Flemish mark for silver. (The mark was normally an 8-ounce unit, but in this case was a 6-ounce unit.) It is not surprising that the weight systems of England and Scotland should reflect so clearly the systems of their dominant European trading partners.⁵

A feature which characterises the Early English and Scottish weights is the use of pounds of 15 ounces for the bulk weighing of heavy goods. Thus it is 15-ounce pounds that are recorded in the David Assize and the equivalent English documents. In due course, however, these were supplanted for certain goods, including more costly imported goods, by larger pounds of 2 marks or 16 of the same ounces. This in part acknowledged the greater ease of calculation in the binary units afforded by factors of 16, but it also helped emphasise an emerging distinction between inland trade and external merchant activity (involving trade in foreign goods which were often already reckoned in factors of 16).

This transformation of the merchant weights had taken place by the mid-fourteenth century; and, with evidence for the formal introduction of troy ounces of 480 grains at about this time, the merchant pounds of both England and Scotland could be expressed either as 16 ounces of 450 grains or alternatively as 15 ounces of 480 grains. The former describes the method of use of the weights, but the latter is encountered in official definitions. We can appreciate therefore that the pounds of the 1426 Scottish legislation are specific to merchant and bullion activity and tell us little about Scotland's inland trade.

Larger merchant pounds of 16 troy ounces emerged almost simultaneously in English and Scottish definitions in the late fifteenth century, presumably in response to the increasing use of 16-ounce pounds in the Continental markets, and in Scotland

from the sixteenth century factors of 16 are almost invariably encountered (APS II, 226, 28 April 1491; Connor 1987, 127). In particular, the merchant version of the French pound that had evolved in the Burgundian Netherlands was widely used by the Scottish merchant community: this contained 16 ounces, and the sixteenth-century value of this ounce was about 474 grains. At the same time the ounce used in Paris had stabilised at the slightly lower value of about 472 grains. In 1511 the Scottish administration abandoned the English troy ounce of 480 grains and instead adopted the French ounce, as part of a shift of Scots policy away from England and towards France. Although the merchants probably continued to use the Flemish form, it was the Parisian version that was used for official standards initially. The Scots administration finally conceded defeat with the adoption of the Flemish ounce at the Assize of 1587.

With the change in the ounce basis from 480 grains to 472 grains in 1511, the masses of the official weights were reduced by a small amount and there is a record of this reduction being made in the Edinburgh weights (Marwick 1869, 133). As a result of this change the 'Scots' merchant pound, previously $16 \times 450 = 7,200$ grains, became $16 \times 442.6 = 7,082$ grains, and the official trois pound was reduced to $16 \times 472.1 = 7,554$ grains.

In spite of the fact that the Flemish weights were used in multiples of 8 and 16, the formal move to increase the Scottish stone to 16 trois pounds from 15 trois pounds (16 reduced 'Scots' pounds) only happened in 1563. This was coupled with a corresponding rise in the size of the trone stone, and the trone pound became 20 trois ounces. Trone weights from the last part of the sixteenth century survive (Fig. 2), and the mass of the stone is indeed that of 20 trois pounds based on the Flemish ounce.

For the period before these changes of 1563 we must rely on a single surviving standard of 1553. The standard known as the Craigengelt Weight (Fig. 1) is an impressive bronze weight with an iron ring handle. The gothic inscription cast in relief around its surface records its construction by Johannes Coqhren, who was a Flemish master-gunner at the royal artillery workshops in Edinburgh Castle, at the instigation of John Craigengelt, provost of Stirling (Cook 1897–8, 65–9; Hutcheson 1898–9, 5–6). Craigengelt was convenor of the meeting of the Convention of Royal Burghs held that year in Stirling to discuss control of the weights and measures held by the burghs, and this is undoubtedly one of the standards made as a result of their recommendations.

The mass of the Craigengelt Weight has previously defied explanation, but it fits perfectly with our present understanding of the ounce reduction in about 1511 and the official retention of the stone of 15 trois pounds until 1563. Its mass of 141,560 grains is only about 75 grains less than the mass of 20 of the reduced 'Scots' pounds, which represents an acceptable amount of wear. However, it is significantly different from the mass that would have resulted from an adoption of the Flemish ounce: we can be sure, therefore, that it was the true Paris ounce and not the Flemish ounce that was adopted for official standards, and this can be verified from measurements of the contents of surviving capacity standards of the period before 1587.



Fig. 1. The 'Craigengelt Weight', 1553: the earliest known Scots standard trone weight. Smith Art Gallery and Museum, Stirling, Inv. B.2980. (Photo. National Museums of Scotland)



Fig. 2. A group of late sixteenth-century standard trone weights, of 1 stone, 4 pounds and 2 pounds, with the double-headed eagle of the Royal Burgh of Lanark. Clydesdale District Council, Lanark. (Photo. National Museums of Scotland)

When the measurement standards were gathered together for Craigengelt's meeting at Stirling in 1553, they were brought by the representatives of the four royal burghs (previously members of the Chamberlain's Court of the Four Burghs) which had each been given the rights to maintain and issue recognised copies of one of the standards. The stone was entrusted to Lanark. But this was not the merchant or bullion weight of the assizes, as was assumed in the historical enquiries of the early nineteenth century, but the trone weight of the burgh markets.⁶ This was made clear by the Convention of Royal Burghs in 1578 when all the burghs were required to have standards of the stone, half-stone, pound and half-pound 'trone wecht, according to the stane of Laneark' (Marwick 1866, 76).

A very specific confirmation of the use of the Lanark stone was contained in another Act of the Convention which stipulated the type of trade to be conducted in each weight series:

... all Scottis wayris be ressauet, sauld, and delyuerit with the iust wecht, according to the stane of Lanerik, pund and half pund, and vtheris effeirand thairto, ... and the wecht of all forane wayris to be correspondent to the siller wecht, quhiik is saxtene vnce for the pund ... (Marwick 1866, 482).

Here the trone weight is contrasted with the 'silver' or bullion weight by which merchant produce was to be reckoned.

It is one of the confusing features of Scottish metrology that the troy or 'trois' label, originally applied to the bullion weights in the 1426 legislation, was used during the sixteenth century for any bullion or merchant weight series with a 16-ounce pound, whether to the French, Flemish or Amsterdam standards, or to the standard peculiar to the Scottish Mint. The form 'troys' is given in the 1618 legislation and the equivalent 'trose' is often found in the seventeenth century, but these spellings are interchangeable and they do not characterise individual weight series. However, one aspect is clear: we cannot interpret references to 'trois' as meaning the official bullion weight as we can with English weights when the word 'troy' is used.

Returning to the Craigengelt Weight, one important conclusion that can be drawn from its mass is that the 'Scots' pound of the 1426 Act survived into the sixteenth century. Whether or not it was still much used for merchant activity, it nonetheless formed the basis of a trone stone of 20 pounds. The same relationship between the merchant and the market weights seems to have survived the reduction in the ounce size in 1511. Indeed, the implication from the Edinburgh records is that the reduction made in 1511 was specifically to the market weights for internal use.

But if we are justified in taking trone weight back into the fifteenth century, are we justified in suggesting an origin that pre-dates the important 1426 Assize? At one level, we probably can suggest this, because the factor of $1\frac{1}{4}$ or $\frac{20}{16}$ that links the trone weight to the merchant weight almost certainly mirrors an aspect of early English metrological practice. This factor probably arises because it is also the relationship between the English heavy-goods pound of 15 ounces and the bullion pound of 12 ounces: $\frac{15}{12} = 1\frac{1}{4}$, so the heavy-goods pound is 5-quarters of the English bullion pound. In Scotland, the bullion pound was not set at 12 ounces in the David

Assize but at 15 ounces – the same mass as for other goods. This is the only significant difference between the weight definitions of the David Assize and those of the English *Tractatus*. It is not known why this should have been the case, although it presumably reflects an existing difference in commercial practice, such as continued dependence in Scotland on silver in ingot form rather than coin (Spufford 1988, 282–3). The trone pound emerges from this as a heavy-goods weight which embodies the appropriate relationship between the two weight series. Such a proposal implies that the trone stone was in use by the early fourteenth century.

No surviving Scots weights of the fourteenth or fifteenth centuries have been identified; so, in taking this further, we must rely solely on documentary sources. The body of evidence for such an early existence of trone weight is not strong, nor can it be interpreted unambiguously. It is to be found in three separate situations where documents refer to an unknown type of weight which is plausibly a precursor of trone weight. The first is well known to Scottish historians, and has most recently been commented on by Geoffrey Barrow: it is a group of ecclesiastical charters, of which the earliest is from the late eleventh century, which refer to allowances of cheese in units variously described as *chudremes* or *cudrinis*. The second also relates to cheese, this time in units of *codros*, in royal accounts submitted in 1326 and printed in the first volume of the *Exchequer Rolls*. Finally, there is another well-known reference by Sir John Skene in his *Regiam Majestatem* to the mysterious *pondus Cathaniae* or ‘Caithness weight’, which he attributed to the reign of David II and therefore to the mid-fourteenth century.

The earliest of these ecclesiastical charters is in the register of St Andrews and it records a grant given by Fodach, bishop of St Andrews to the church of St Serf and the community of Culdee monks on St Serf’s island in Loch Leven. The grant included what was described as the ancient *cain* (or land revenue) of the church of Auchterderran in Fife, about four miles from Loch Leven, namely ‘30 loaves baked with the ancient measure which is kept there and 30 cheeses of which each one makes a *Chudreme*’ (‘... *XXXta panes decoctos cum antiqua mensura farinae ibi apposita et XXXta caseos quorum quilibet facit Chudreme* ...’) together with quantities of malt (Lawrie 1905, 9–10, 239–40, No. 11; *St Andrews Liber*, 117). The charter has been dated between 1059 and 1093, and so it is of considerable significance in providing a view of an early metrology which must inevitably pre-date a system based on English practice introduced by David I and his immediate successors. It also provides an important context in the Celtic Church for the regulation of payments in kind, and the association with the Culdees may suggest that the sizes embodied in these church measures had pre-Norman origins.

The other early instance of a similar annual gift of cheese is in a royal charter of 1147 which records the gift by David I of the lands of Cambuskenneth, about a mile to the east of Stirling, to the Augustinian abbey church of St Mary of Stirling, subsequently known as Cambuskenneth Abbey. The gift included twenty *cudermis* of cheese from the king’s revenues of Stirling (Lawrie 1905, 140–1, 400–1, No. 179; *Cambuskenneth Registrum*, 71–2, No. 51). The terms of David’s charter were con-

firmed on a number of subsequent occasions, and although the clerks responsible for these later documents presumably copied from the earlier texts, transcription differences which indicate a latitude in spelling soon become apparent. Thus the confirmation of 1163–4 by Malcolm IV has *cudrinis*; that of William the Lion in 1168 has *cudermis*; and the Bull of Pope Celestine III in 1195 has *cudrumis* (Barrow 1960, 261–2, No. 241; *Cambuskenneth Registrum*, 70–1, No. 50; Barrow and Scott 1971, 160–1, No. 60; *Cambuskenneth Registrum*, 72–3, No. 52 and 42–6, No. 25). These differences are explicable in terms of contemporary Anglo-Norman scribal conventions, together with an allowable degree of latitude when dealing with vernacular forms, recognising that the sound-system and inflectional system are not the same as in Latin, the language on which the orthography is based. They also illustrate the problem of misreading (and particularly, confusion in the combination of the short minim strokes in the letters) in the transcription of a term in a language unfamiliar to the scribes.

When we compare the *chudremes* of the St Andrews charter with the *cudrinis* of the Cambuskenneth charters, it seems clear that we are dealing with the same term. The likelihood is that this is a Gaelic word for which there was no standard Latin equivalent, and so the clerk has provided a phonetic rendering.

In commenting on the Malcolm IV confirmation, Geoffrey Barrow initially suggested that the word might be derived from the (Early) Gaelic *cethramad*, or ‘quarter’, but subsequently revised this to an association with the (Modern) Gaelic *cudthrom*, which literally means ‘weight’ (Barrow 1960, 262; Barrow 1981, 173). The latter is a modern descendant from the Early Irish *cutrummae*, defined in the *Royal Irish Academy Dictionary* as a noun or adjective for ‘equivalent’ or ‘equal in weight’ (Quinn 1968–74, col. 638, s.v. *Cutrummae*). The descent is via a (linguistically reconstructed) Early Modern Gaelic form **cudram* or **cudrama*, which William Gillies regards as a plausible original for the charter spellings ‘*cudreme(s)*’ etc.⁷ The form *cutrummae* is an early compound of *con-*, meaning ‘together’, or ‘co-’, and *trummae* ‘weight’, from the Common Celtic adjective **trommo-* ‘heavy’ (from which arise, for example, the Early Irish *tromm* and the Medieval Welsh *trwm*) (Pedersen 1909–13, i, 132). The Modern Gaelic spelling ‘*cudthrom*’ reflects etymological consciousness of *trom* (the word in current Gaelic use), though it is phonemically /kudrəm/ and indeed occasionally spelt ‘*cudrom*’.

It is important to recognise that the Gaelic term described the concept of heaviness or having weight, and not physical entities which are the weights themselves. The type of use that might be expected would couple *cudthrom* with a term such as *clach* (earlier *clach*) ‘stone’ to mean a ‘stone’s weight’; so that a quantity of ‘X stones in weight’ might be described as *X clachan a [de] chudthrom*. However, although this usage is found in Modern Gaelic and Modern Irish, it is not recorded in the *Royal Irish Academy Dictionary* for Early Irish, and so it may be that this usage has resulted from the influence of English metrological practice. Conceivably, an earlier semantic shift may have been from ‘equivalent’ to ‘balance’, in the physical sense. Hence a commodity such as cheese could be described as ‘*cudruim*’ (in the genitive), so that ‘of equivalence’ might become understood as ‘of balance’ or ‘by the scales’. What is certainly the case is that by the late eleventh century the clerks, who were

administering the formal contractual arrangements for which these early ecclesiastical charters are the surviving evidence, understood the **cudram(a)* as a quantitative weight term, or at least interpreted it as such for contract purposes.

The St Andrews charter is not supposed to mean that the annual grant to the Loch Leven Culdees included cheese to the extent of 30 equal but unspecified quantities, the size of which might perhaps change from year to year. Instead, it indicated that the grant was of 30 (as opposed to, say, 20) quantities of an administratively verifiable form, which held good from year to year. When we come to examine early fourteenth-century sources it will be found that the clerks are transcribing the same descriptive Gaelic word as before, but its quantitative meaning has changed and it is identified, at least for these administrative purposes, as a much lighter weight term. To distinguish between these two sizes, and for this convenience only (recognising that the same name is applied to both), the earlier and heavier unit will be described as the Celtic weight, and the later and lighter unit as the Scots weight.

Whereas the Early Gaelic *tromm* has an ancient Celtic root, the Scots word 'trone' is considered to have derived from the Old French *trone*, with an origin in the Latin *trutina* (a balance or pair of scales): the evolution of the word would be '*trutina*' to '*trotina*', then '*trone*', with '*trona*' in Scots medieval Latin (Robinson 1985, 737, s.v. *Tron*; von Wartburg 1967, 342, s.v. *Trutina*). If this is the correct etymology of 'trone', then the likely introduction into Scots would be from the Anglo-Norman and would almost certainly post-date the St Andrews charter.

An Anglo-Norman introduction would imply that trone weight should also occur in the English record, and indeed this is the case. As in Scotland, the word 'trone' or 'tron' was applied to the large English beams and steelyards on which wool was weighed for exacting the king's customs, and this name was certainly in use by the late thirteenth century (Kingdon 1905, 26–8). However, there is also at least one instance of the use of 'trone weight' in an early English text. This occurs in an influential late thirteenth-century compendium of English law, known as *Fleta*, written in about 1290 by an unidentified but experienced lawyer who was confined in the Fleet prison in London. A section of *Fleta* devoted to weights and measures relates large units of bulk weighing in terms of the two constituent English stones of the period, of 12 and 12½ pounds; and in a definition of the 'char' (or load) of lead in terms of the 'wey' (or half-sack) of lead, the latter is stated to be 'by trone weight', or perhaps more accurately 'weighed by the tron'.⁸ This passage also appears in the *Tractatus*.⁹

The implication of *Fleta* and *Tractatus* is that the larger stone was considered appropriate for official bulk weighings at the English trones and that such weighings were necessarily in terms of sacks and weys. From *Fleta* it is clear that the particular wey being defined was the wey of lead, but the same arrangement applied for wool, except that wool was weighed with a larger pound of 16 rather than 15 tower ounces. There is no mention in *Fleta* of a different English pound for wool, but its existence can be recognised from the descriptions of the wool sack as 350 pounds: because the wool sack was an international unit, its size was controlled, and it would have been given as about 373 of the smaller 15-ounce pounds. It is suggested that the emergence

of the 16-ounce pound for official wool weighing, which may have happened towards the end of the thirteenth century, marked the separation of trone and troy units, with trone weight describing the 15-ounce units (as in *Fleta*) and 'troy' being applied initially to 16-ounce units.

The situation is complicated by a contemporary change in English weighing technique. Goods handled in bulk were weighed on large beam scales, and at least in the thirteenth century the bargain was struck when the beam inclined towards the goods pan. By contrast, pressure was building up during the second half of the thirteenth century for the official weighing of English wool at the trone to be conducted with the beam level, and the clear evidence for a change in official practice first emerges at about the time *Fleta* was being compiled.

Because a greater weight was required to balance a given quantity of goods when weighed by the level beam, larger stones of 13 pounds were used so that the number of stones in the sack was unchanged. The difference between the stones of 13 and 12½ pounds represented the so-called *cloffe* allowance of four parts per hundred for level-beam weighing. Thus the weight of a wool sack by the inclined beam was 350 pounds (each of 16 tower ounces), but to balance the sack with the beam level required an additional 14 pounds ($3\frac{1}{2} \times 4$ pounds), making a total of 364 pounds. These are equivalent weights, using the same pound but with different weighing techniques.

We can deduce that level-beam weighing was not yet employed at the trones in Scotland at this time: the David Assize gave the size of the wool sack as 360 pounds, which is the inclined beam weight used for the sack at Bruges, where virtually all exported Scottish wool was sold. Flemish weight regulated the size of the wool sack in Scotland, as may also have been the case in England before the introduction of the 16-ounce pound.

Trone weight emerged in Scotland as the weight used for all other heavy goods weighed at the trone scales, and this distinguished it from Scots troy or trois weight, which acted as a combined bullion and merchant weight. In England the situation was complicated by the maintenance of two types of weighing practice and by pressures from a greater number of external markets. In particular, the term 'averdepois' came to apply to the heavy-goods category: the 'averdepois' or 'avoirdupois' pound was probably acquired from the wool trade with Flanders, and instead of the 15 ounces characteristic of the earlier English heavy-goods pounds it had 16 smaller ounces to the pound. Because the averdepois pound came to dominate English heavy-goods weighing the traditional relationship between the heavy-goods and bullion weights was lost. In Scotland the relationship survived, with trone weight adjusting to take account of changes in trois weight.

Although there was a divergent use of the term 'trone weight' in England and Scotland, the fact that it occurs in the early English record indicates the likelihood of an Anglo-Norman introduction into Scots. But the Early Gaelic *tromm*, and hence also the *chudreme* weight term of the St Andrews charter, must be of considerably greater antiquity. There is some superficial similarity in the form and evolved

meaning of *trone* and *tromm*, but there is no currently recognised evidence that the Latin (and ultimately Greek) source of the Old French *trone* may be a cognate of the Celtic term (Pokorny 1959, 1072 (*trutina* and cognates), and 1095 (*trom* and cognates)).¹⁰ Certainly, each term has developed separately within its own linguistic tradition.

In the Cambuskenneth charters we see the collision of these two traditions – the Celtic and the Old French. In both, what had probably begun as a qualitative expression had come to assume a specific quantitative meaning in a trading or administrative context. In the case of the Early Gaelic term, the '*chudreme*' of the charter may strictly have meant little more than 'of equivalence', but it has been coined or adapted as a response to metrological demands. There is no particular reason why quantitative values adopted in the Celtic and Old French usage should be related, and it would certainly be unreasonable to assume that these values should be identical. In fact, it will become apparent that the earlier Celtic unit was considerably larger than the unit found in later Scots sources.

The evidence for this is by no means conclusive, and is based on a revised charter granted to Cambuskenneth Abbey by Alexander II in 1232. In this charter David I's original grant from his rents of Stirling, described as twenty *cudrinis* of cheese, was revoked; it was replaced by another of twenty '*cowgall*' of cheese to be delivered by the king's sheriff at Stirling from the rents of royal lands at Tullymurthac (*Cambuskenneth Registrum*, 316–7, No. 224).¹¹

The '*cowgall*' is the same as '*cogall*' or '*tonegall*' the initial letter of the last, being calligraphically similar to 'c', probably indicates a transcription error perpetuated by scribal copying) which are found in accounts in the *Exchequer Rolls* for royal lands in Kincardine and Forfar around the second half of the thirteenth century. In 1266, 50 *cogall* of cheese from Kincardine (recorded in this instance as 50 *cogañ*) was valued at £7.10.0, so that the value of one *cogall* of cheese was 3 shillings (Stuart and Burnett 1878 [hereafter ER I], 21).¹² In 1290 the accounts of Kincardine also recorded that a '*tonegall*' of cheese was worth 3 shillings (ER I, 49).¹³ In the same year the accounts of the sheriff of Forfar contain the specific information that the '*tonegall*' was 6 stone and that the hundred for cheese was a long hundred of 120 (ER I, 50).¹⁴ This can also be deduced from the revised Cambuskenneth charter of 1232, which is entitled 'a gift of a hundred stones of cheese': if 20 *cowgall* is 120 stone, one *cowgall* is 6 stone.¹⁵

Geoffrey Barrow has associated the '*cagall*' with the wooden vessel in which the cheese was pressed (Barrow 1960, 173). However, the '*cog*' has not been recorded by the Dictionary of the Older Scottish Tongue before about 1500, and it is unlikely that a cheese as heavy as 6 stone (nearly 40kg) could be pressed as a unit; in practice, this quantity of cheese would have to be made up of several individual cheeses, each pressed in a smaller vessel (Craigie 1937 [hereafter DOST], s.v. *Cog*).

We have no option but to assume that the replacement grant to Cambuskenneth was equivalent to the previous grant, and therefore that the *cowgall* was approximately the same size as the *chudreme*.¹⁶ The aspect that is important is that the text of the original grant has been repeated verbatim, but the new grant is consciously

couched in terms of a new unit. By this time the form of trone weight imported with the English system introduced by David I and his successors must have been well established and it was no longer acceptable to initiate contracts in the Celtic unit.

The new trone unit, termed the '*codrum*', appears in the accounts of John de Lany, constable of the royal castle of Tarbet, Kintyre, in 1326. The value of payments in kind, made in cheese from Islay, were recorded for work on the castle and for expenses in connection with the recent visit of Robert the Bruce when he circumnavigated the Mull of Kintyre to complete his formal right of possession (ER I, lxx-lxxiii). Most references record *codros* of cheese at a value of 7 pence each (although one gives 6½ pence and another 8 pence), and one is the reasonably large quantity of 28 *codros* at 7 pence each (ER I, 53-7).¹⁷ Of the Latin entries in these accounts, only one is for a single unit – a '*codrum*' – of cheese. This spelling suggests that the same Gaelic term as before has been used but interpreted by the clerk as a Latin noun, giving rise to the accusative '*codros*'. In one instance two payments in *codros* are associated with payment in *petras* (the latter being a part-payment for a building contract as opposed to wages), and from this the value of the *petra* (stone) of cheese emerges as 6 pence (ER I, 53).¹⁸ This is the same unit value as that already cited for 1290, when 6 stone was valued at 3 shillings.

Although it is perhaps dangerous to argue from such slender evidence, it would appear that the Scots *codrum* was a weight unit comparable in mass to the stone but a little larger. When it is noted that 1¼ times the stone's value of 6 pence is 7½ pence, the Tarbet figure for the *codrum* and *petra* can be seen as compatible with the subsequent relationship between the trone and the trois weight series. The *codrum* weight can then be understood as providing early (albeit indirect) evidence for the Scots trone weight; but although its mass associates it with the Scots weight, its name is clearly derived directly from the Gaelic.

Returning to the *cowgall* of 6 stones, we can appreciate that it also comprised 5 units of one *codrum*.¹⁹ Although the etymology of '*cowgall*' is unclear, one intriguing possibility is that it is based on the Gaelic *cóig* for 'five', combined with a word suitable for contraction in this fashion.²⁰ Replacement of the Gaelic *chudreme* weight with another which was overtly a multiple of five smaller units would strongly suggest that the normal manufacturing unit for cheese was one trone stone.

Another possibility which might be advanced speculatively is that '*cowgall*' is not a weight term as such, but is characteristic of the nature of a transaction. John MacInnes has tentatively suggested that it might arise as the compound of *con-* and *geall*, which in Modern Gaelic is *coingheall* (of which there is a southern dialect pronunciation /kɔ̌jjaL/), meaning a succour, subvention, service or act of mutual help.²¹ The wide semantic range indicated might nonetheless accommodate the idea of provision destined for the support of the court, of royal officers and those providing military service. The word might carry no particular weight connotation, but the associated numerical quantity would be interpreted in terms of the accepted appropriate unit.

The third separate documentary source for the Scots trone weight is the so-called 'weight of Caithness'. This curious reference occurs in the first printed edition of the collection of the Auld Laws, the *Regiam Majestatem* of Sir John Skene, published in 1609. Skene, who was appointed Clerk Register with responsibility for the state papers in 1594, also served as a Lord of Session, sitting as Lord Curriehill. He had assisted Sir James Balfour of Pittendreich, an earlier Clerk Register who had been deeply involved in the collating and printing of the Statutes, and Skene himself had printed an edition of the Parliamentary Acts from 1424 to 1597. His edition of the *Regiam Majestatem*, published in Latin with a translation in Scots in the same year, therefore carried considerable authority.

In the section of his work devoted to the legislation of David II (1329–71) Skene printed an Act entitled 'Of Weichts in Bvyng and selling':

It is statute be king *David*, that ane comon and equall weicht, quhilk is called the weicht of *Cathnes* in buying and selling, sall be keiped and vsed be all men within this Realme of *Scotland* (Skene 1609a, ii, f.39v).

In Skene's Latin version, the weight is described as the '*pondus Cathanie*' (Skene 1609b, ii, f.51r).

The Act is included in the standard nineteenth-century edition of the *Acts of Parliament of Scotland*, edited by Thomas Thomson and Cosmo Innes, but it has been attributed by them to David I. The clause naming the weight – 'the quhilk is callit the wecht Cathan' – has been enclosed by Thomson and Innes in square brackets, presumably to indicate that it does not appear in all the manuscript sources cited for this particular Act (APS I, 324, Ch. 31). Indeed, the clause was only found in one of these manuscripts, a mid-fifteenth-century compilation in Scots, which names it the 'wecht cathan' (with no abbreviation indicated), and this must be appreciated as Skene's most likely source (NLS, MS Adv. 25.4.15 (previously W.4 ult), f.103v, Ch. 14). It is perhaps significant that the Act does not appear at all in any of the three important fourteenth-century manuscript compilations of the Auld Laws – the Ayr, Bute and Cromartie manuscripts – which are the best early sources for the legislation of David I.²² It therefore seems much more plausible that Skene was correct about the dating of the Act, namely that it is from the reign of David II.

The advocate John Swinton, who was closely concerned with moves to revise Scots and English metrology in the late eighteenth century, disparaged Skene's identification of the weight with Caithness, and we can see that the one identifiable manuscript source provides Skene with little support. However, Swinton was clear that, whatever the origin of their weight, it was defined as the ordinary weight of the marketplace for inland trade and was therefore the weight used at the trone (Swinton 1779, 133). Skene has apparently found '*cathan*' and, perhaps influenced by an inadequately understood association with Gaelic, he has transformed this Scots form into '*Cathaniae*' to provide an accepted Latinised form of an appropriate geographical location.

On the basis of this single occurrence, we cannot judge whether the '*cathan*' of the fifteenth-century manuscript is an adequately representative spelling, and if so whether it might have undergone a similar transformation from a Gaelic form (such as the Latinised '*codrum*') into Scots. There are linguistic problems with linking these two terms, and although sound substitution may perhaps have played a part, a basis for associating the terms cannot yet be established. The situation is complicated by the existence of other similar weight terms in contemporary use in Scots. The *caslamos* and *castelaw*, known from Exchequer references of 1326 and 1505 respectively, can be shown to have masses closely equivalent to that of the *codrum*.²³

It should perhaps be emphasised here that the context for the use of the weight terms is not in burgh administration but in the collection of rentals and the payment of accounts on crown estates. It is much more likely therefore that terms derived from Gaelic would be in familiar use for produce in these landward areas. However, the David II Act must be considered as applying throughout the kingdom, and is therefore directed principally at the (Scots-speaking) burghs. In the one instance recorded above, the uniform burgh weight standard has been described informally as '*cathan*'. In the circumstances, it seems that *cathan* weight should be identified with the mass that was common to all these weight terms, namely the trone stone that I have argued was influenced by Anglo-Norman practice. Considering the latitude in Scots spelling at this period, '*cathan*' would be considered a possible if not particularly likely variant spelling in Scots for the Gaelic weight term.²³

The end of David II's reign was a period when there were a number of administrative changes in Scotland's metrology. It has already been noted that trone scales were required at the burgh markets for wool weighing from 1365. It is also apparent from the records of the Scottish Mint that the English troy ounce and pound were adopted for coinage control in 1367.²⁴ This corresponds with (and presumably follows from) the formal adoption of the troy ounce in English metrology, and this seems to mark the emergence in England of a general merchant pound of 16 tower ounces, defined in terms of 15 troy ounces. If the Scottish 16-ounce pound – described as the 'Scots' pound in the 1426 Act – also dates from this period, then it is probable that this marks the increase in the trone weight to 20 ounces. Skene's Act promulgating the '*wecht cathan*' can then be seen as the start of two hundred years of stability in the mass of the trone market weight.

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NOTES

- ¹ Such issues will be explored in R.D. Connor and A.D.C. Simpson, *The Weights and Measures of Scotland* (HMSO and the National Museums of Scotland, forthcoming).
- ² The text of the *Tractatus* is given in Connor 1987, 320–1, Appendix A(d). (But for the substitution of troy for trone in this transcription see note (9) below.) Although this particular text is attributed to 1302/3, similarities with thirteenth-century sources (notably the White Book of Peterborough Abbey of about 1253 and the '*Compositio Mensurarum*', attributed to 1266) suggest to Connor an origin about 1250. The surviving text of the David Assize contains information on coin weights of the reign of Robert I (1306–29).
- ³ It has been concluded from manuscript versions of this assize that the version published in Robertson (ed.) 1804, 63, most accurately represents the original Act. The background to this issue is discussed in the forthcoming *Weights and Measures of Scotland*. A preliminary Act of 1426 which provides some further details of the weight system is printed in APS II, 10.
- ⁴ Royal contract of 26 August 1565 with John, Earl of Athole, licencing him to extract lead from the mines at Glengonar and Wyndock (in Lanarkshire) for export to Flanders, requiring payment to the Exchequer 'for everie thowsand stane wecht – trone wecht as said is – of the same leid ure, fiftie unces of fyne silvir' (Burton 1877, 373–5).
- ⁵ A further examination of European trading weights in the early fourteenth century is in progress.
- ⁶ For this erroneous view, see in particular the conclusions in Buchanan 1829, which contains the reports of the county juries asked to examine the relationship between local weights and measures and the new Imperial Standards.

- ⁷ Personal communication from Professor William Gillies, Department of Celtic, University of Edinburgh, who notes that the spellings may include reflections of inflected forms of the base-form **cudram(a)*.
- ⁸ The char (or load) of lead was defined as 30 fotmals, each of 30 pounds of 15 tower ounces, or by a different method as 12 weys (half-sacks) 'et hoc secundam trone ponderacionem' (Richardson and Sayles (eds.) 1955, 118–9). Chalmers used this reference to demonstrate that trone weight was not indigenous to Scotland (Chalmers 1807, 815). Philip Grierson and Christopher Brooke have kindly confirmed that the literal meaning of this term is 'weighed by the tron': personal communication from Professor Philip Grierson, Gonville and Caius College, Cambridge.
- ⁹ Three early manuscript versions of the *Tractatus* have been published: *The Statutes at Large*, i (London, 1763), 148–9 (from the British Library MS Cotton Claudius DII, f.259); *The Statutes of the Realm*, i (London, 1810), 204–5 (from BL MS Liber Horn., f.123); Hall and Nicholas (eds.) 1929, 9 (from BL MS Reg. 9A.11, f.170).
- ¹⁰ I am grateful to Professor William Gillies for this reference.
- ¹¹ '... viginti cowgall casei . . . de firma terre nostre de Tullymurthac, . . . pro viginti cuddrinis casei . . . ex donatione regis Dauid et ab antecessoribus notris eisdem canonicis confirmatas . . .'. There is an isolated mid-fourteenth-century (reign of David II) reference to 'Tullimuchache', but otherwise the location is unrecorded (Thomson (ed.) 1912, App. ii, No. 1306, 600).
- ¹² 'Redditus casei. Inde venduntur 1. cogañ pro septem libris et decem solidus'. The Forfar accounts for 1266 consistently use 'cogall' as the plural form (ER I, 6).
- ¹³ 'Tonegall casei venditum pro iij solidis'.
- ¹⁴ '... tonegall valet vj petras . . . vj^{xx} tonegall pro quolibet centrum'.
- ¹⁵ 'Donatio centrum petram casei de Tullymurthac' (*Cambuskenneth Registrum*, 316). The first to comment on this was Chalmers (Chalmers 1807, 433). Unfortunately he interprets the hundred as 100, to derive the *tonegall* as 5 stone.
- ¹⁶ The weight should not be associated with the much smaller 15-pound stone of the David Assize, as noted by Barrow (Barrow 1981a, 173).
- ¹⁷ The accounts include seven payments where the values of cheese in *codros* can be separated: 2 *codros* for 14d. (7d. each), 2 for 13d. (6½d.), 1 for 7d., 4 for 2/8 (8d.), 6 for 3/6 (7d.), 28 for 16/4 (7d.), 3 for 21d. (7d.).
- ¹⁸ '... per vndecim petras casei vs vjd' or 11 stones at 5/6 per stone. It must be emphasised that we have no independent evidence for the mass of the *petra* stone. It does not necessarily follow that it is the 15-pound stone of the David Assize: it is conceivable that it is the 'London stone' of 12 pounds mentioned in some versions of the Assize (notably in the Bute MS, National Library of Scotland MS 21, 246).
- ¹⁹ Five units of 1¼ stones (assuming the value of the *codrum* of cheese to be 7½ pence) is 6¼ stones. Alternatively, if the *codrum* is worth 7 pence, then 5 *codrum* stones is 35 pence, whereas 6 *petra* stones at 6 pence is 36 pence.
- ²⁰ Personal communication from Professor William Gillies, who, however, feels that the *cow-* and *tone-* <**cone-* suggests *comh-* on first guess. For a recent discussion of this prefix see Barrow 1981b, 1–24.
- ²¹ Personal communication from Dr John MacInnes of the School of Scottish Studies, University of Edinburgh.

- ²² The early fourteenth-century Ayr manuscript is at the Scottish Record Office; the Bute and Cromartie manuscripts, both of the latter part of the fourteenth century are in the National Library of Scotland, MS 21, 246 and Adv 25.5.10 respectively.
- ²³ Personal communication from Professor Robin Connor. He cites the same Tarbet accounts of 1326, '... et xiiij d., per duos codros casei ... per viginti caslamos casei et farrine, xj s. viij d.' (ER I, 55); and later Kintyre accounts of 1505, '... castellau farrine albe venditur pro octo denariis; castellau casei pro octo denariis' (Burnett (ed.) 1889, 698). See also *DOST*, i, 457, s.v. *Castellaw*.
- ²³ Personal communication from Marace Dareau, Dictionary of the Older Scottish Tongue, Edinburgh.
- ²⁴ This will be discussed in the forthcoming *Weights and Measures of Scotland*.

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