

A group of *cache* balls from St Andrews

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with a contribution by P Walton Rogers

ABSTRACT

A recent find, consisting of balls made of tightly wound yarn with leather covers, has been identified as a group of cache balls, used for playing the Scottish version of hand ball. Scientific analysis and circumstantial evidence suggest that the objects date from the 18th or early 19th century.

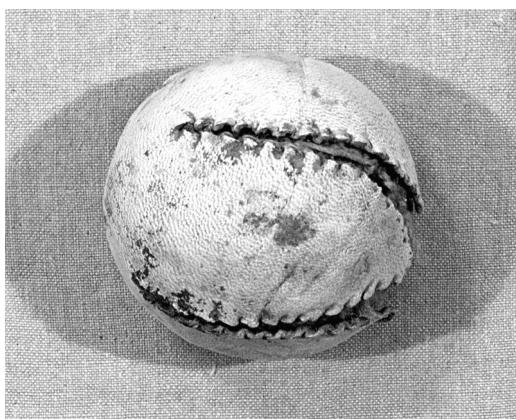
INTRODUCTION

In 1999 a small group of objects was rediscovered in the stores of the Library of the University of St Andrews and brought to the attention of the University's Museum Collections unit. The objects can be described as follows:

- A In a cardboard box labelled 'GOLF BALL/ Found in St Salvator's College Tower/July 1954', a single, complete ball, about 68mm diameter. The ball has a stitched leather cover, off-white in colour, partly loose (illus 1). The inside is composed of tightly wound yarn, mainly cream in colour, but with some dark fibres.
- B Wrapped in a piece of bleached, striped cloth, on a bed of scraps of yarn and fabric, a group of items (illus 2), as follows:
 - 1 ball, about 58mm diameter, with complete stitched leather skin, discoloured white. Where the inside of the ball is visible, at the seams where the stitching has come apart, fibres of blue and white yarn can be seen;
 - 2 ball, about 65mm diameter, half covered with an ochre leather skin. The inside shows mainly purple/blue yarn, with white fibres; also some white/cream yarn;
 - 3 ball of wound white and white/grey yarn, about 65mm diameter, with no cover;
 - 4 small ball of wound white yarn, about 36mm diameter. Under the yarn is a light brown woven fabric;
 - 5 small ball of wound white yarn, about 40mm diameter. Under the yarn is a light brown woven fabric;
 - 6 small ball, about 40mm diameter, of ochre and green yarn, with some white fibres, wound over a spherical cork. A fragment of dark red woven fabric underneath the ball may have been associated with it, though no fabric is visibly attached to the cork. The cork seems to have been drilled, suggesting possible former use as a fishing float?
 - 7 cylindrical cork 30mm long and 25mm diameter, covered in part with brown woven fabric;
 - 8 piece of cylindrical cork, 20mm long and 25mm diameter;
 - 9 cylindrical cork, 25mm long and 20mm diameter.

Where the covering skin is complete (ball B1), or nearly so (ball A), it is evident that a single piece of leather was used, formed into a sphere with four 'petals' stitched together to form a cross at one end. This feature, together with the presence of wound yarn inside each, confirms that balls A and B1 are similar objects, as also are B2 (partially covered) and B3 (uncovered) and the smaller balls of yarn and corks seem to be partially-made examples of

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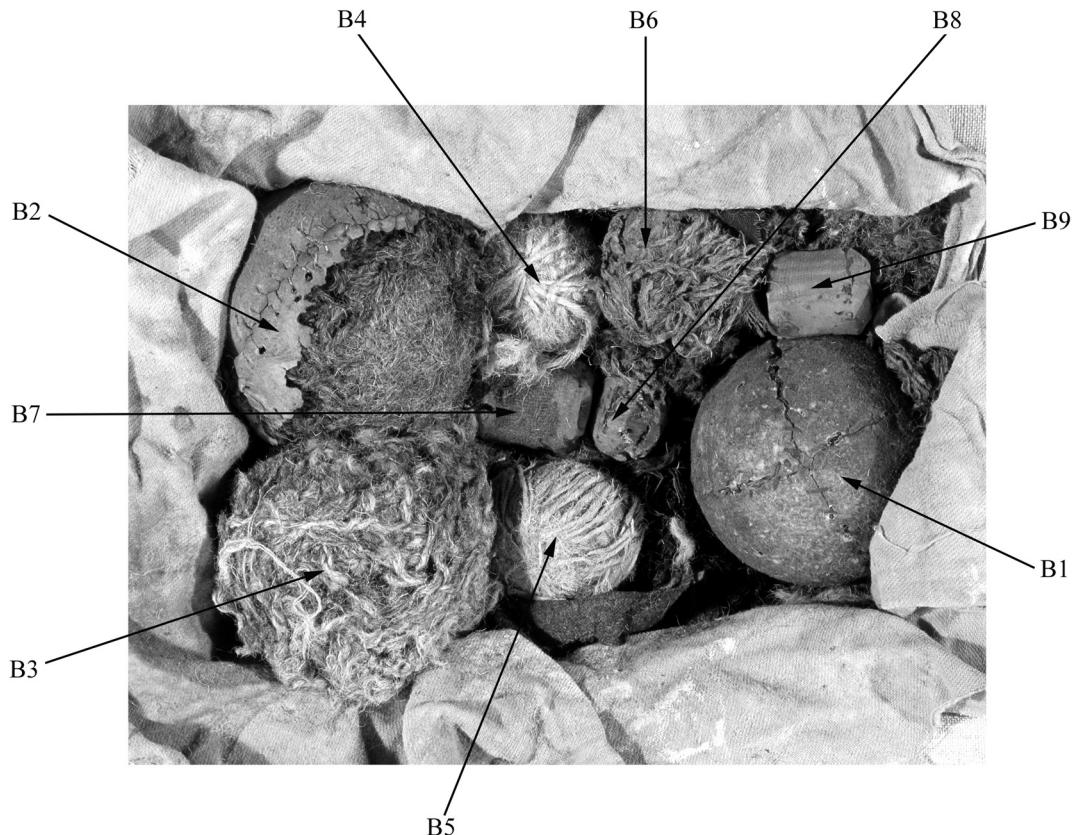
ILLUS 1 St Andrews *cache* ball A, before conservation (above) and after

the same. The numerous scraps of yarn and fabric in B, underneath the other items, are similar to the same materials found inside the more complete balls. Although the ball in the box was separate from the others, it is possible that all the balls and their fragments came from the same source, or at least shared the same context in their past and they may have all been discovered together in 1954, as described on the cardboard box. Most of the materials – cork, wool yarn and fragments of cloth – were never used in the manufacture of golf balls, and the complete balls were much larger than any known golf balls, and the old label was therefore clearly mistaken in describing the single ball as a ‘golf ball’. The true

nature of the balls was recognised immediately by John Burnett, curator of sport at the National Museums of Scotland, who identified them as *cache* balls.¹

CACHE AT ST ANDREWS

Cache or *caich* was the Scots name for a game which involved hitting a ball with the hand against a wall (Burnett 2000, 45–50). It is the ancestor of all similar games using racquets and it still survives in Ireland and the USA as *handball*. Other Scots names were *caitch-ball* and *hand-catch*, and in England it was called *fives* (Murray 1927, 427). *Cache* seems to have been played in Scotland from the Middle Ages until about the middle of the 20th century and there is literary evidence for the game being played in St Andrews from at least the 16th to the 18th century. There is mention of a *kaithspell* in the St Andrews Priory in a reference dated 1597 (Burnett 2000, 47). This would be the area used for playing the game, otherwise known in Scots as a *cachpoole* or *cachpule* (Burnett 2000, 46). In 1571 when the young James Melville went to study at St Leonard’s College in the University of St Andrews his father equipped him with the necessities for sport, ‘for archerie and goff I haid bow, arrose, glub and bals, but nocht a purss for Catchpull and Tavern’ (Kinloch 1829, 23). This reference implies a link between *cache* and gambling and there seems little doubt that it was not one of the University’s ‘approved’ sports.² However, whether it was allowed or not, the students of the University certainly played *cache*, or *handball*, as it was later called. In the early 18th century twin brothers Kenneth and Thomas Mackenzie were studying at St Leonard’s College and the correspondence between the boys and their father and between their tutor and their father provide some fascinating insights into college life of the period. In June 1714 the tutor, James Morice, wrote to Sir John Mackenzie, ‘The cough that Th: [Thomas] had in may was contracted by overheating himself at the handball when out



ILLUS 2 The group of items, B1–B9

of my sight; but he is now entirely free of it' (Dickinson 1952, 52). It is interesting that Morice noted how Thomas had been playing handball 'when out of my sight', implying that his participation in the game would not have gained approval (from the University, the tutor or his father). There is an obvious contrast with archery and golf. For these sports the twins' father was more than willing to provide funds for equipment and to sanction their participation (allowing them to play golf, for instance, twice a week). Another, less certain, reference to handball in St Andrews in the 18th century appears in Robert Fergusson's poem, *Elegy, on the Death of Mr David Gregory, late Professor of Mathematics in the University of St Andrews*:

Sae weel's he'd fley the students a',
Whan they was skelpin' at the ba'

These lines also imply official disapprobation of the game being played by these students at St Andrews during Fergusson's years there, 1764–8.

THE ST ANDREWS CACHE BALLS: RAW MATERIALS

When re-discovered, the *cache* balls were found in a poor and fragile condition, and it was decided that a textile conservation survey was required.³ This survey, conducted by Lynn Grant, Textile Conservation Officer of the Scottish Museums Council's Conservation Service, recommended a focus on preventive

conservation and research, rather than a primarily interventionist approach. Cleaning would be restricted to the removal of surface grime and the debris of past insect attack, while padded mounts would be prepared to secure the objects while on display or in storage and to facilitate their further study. Meanwhile, in order to help determine the original date of the balls, samples from the objects were taken by Lynn Grant and sent for analysis of fibres, fleece types and dyes, to a specialist unit in York, Textile Research in Archaeology (TRA). The following section is derived from a report by Penelope Walton Rogers at TRA.⁴

Microscopy revealed that the wound yarns used in the single ball (A) and in one of the balls (B5) in the group were both non-pigmented (white) sheep's wool, while the navy yarn from the group (loose, possibly from B5 or B6) was fine goat hair (for details of the microscopy, see the archive report). The sewing thread used in the single ball was a partially processed plant-stem fibre, probably flax, and the sewing thread used in a ball (B2) from the group was full-processed flax, from the plant *Linum usitatissimum* L. Finally, the textile in which the group of balls (B) was wrapped proved to be cotton, *Gossypium* sp and its sewing thread was mercerized cotton.

Fleece-type analysis, based on the measurement of fibre diameters, revealed similarities between the single ball and the group. The cream yarns in both (balls A and B5) were identical, being Hairy Medium in type, with 'kemp' present (kemps are wide, often flat, wool fibres). The ochre-green yarn (from ball B6) was also Hairy Medium, but rather finer than the others. The goat hair of the navy yarn (loose, possibly from B5 or B6) was mainly fine undercoat ('cashmere'), indicating that it had been combed from the animal's winter coat.

Dyes were analysed by absorption spectrophotometry and thin-layer chromatography (see archive report). Altogether nine samples were tested, one from the single ball, six from the group, and two from associated textiles. A

dark yarn from the single ball (A) and a purple-blue yarn from the group (ball B2) proved to be blends – that is, differently coloured fibres combined in the same yarn. The dark yarn was a blend of brown and white fibres and the colorants detected were weak concentrations of indigotin (a blue colorant derived from woad or indigo) and a brown dye too dilute to be identified. The purple-blue was a blend of reddish brown, blue and off-white in varying ratios, the blue being again indigotin and the red too dilute to be identified.

Indigotin appeared again in the two navy yarns from the group (loose, possibly from B5 or B6), but in one it had clearly been combined with a mordant dye. The behaviour of this sample during testing indicated that the vat dye (indigo or woad) had been applied first and the mordant dye second, so that the mordant had to be removed before the indigotin could be extracted for analysis. Indigotin was also present in an ochre-green yarn from the group (ball B6), but in that instance combined with a strong peach-yellow dye which was difficult to extract from the fibre. This second dye could not be confidently identified, but circumstantial evidence suggested that it might be one of the crottles. The crottles (Gaelic *crotal*) are native Scottish dyes derived from lichens, mainly *Parmelia saxatilis* (light crottle) and *Parmelia omphalodes* (dark crottle), and used for gold, ochre or orange-red (Grierson 1986, 185–7, plate 4; Bolton 1960/1982, plate 6).

Finally, a tannin-based dye derived from barks, nuts or oak-galls was identified in the brown yarn from the group (loose); and madder, from the roots of the plant *Rubia tinctorum* L was found in the red textile associated with the group of balls (possibly from B6). All these dyes are from natural sources, but the blue dye in the cotton textile wrapping the group of balls was a late 19th-century synthetic.

Some conclusions concerning date and origin may be drawn from these analyses. The white cotton fabric with blue stripes, used to

wrap the group of balls, is clearly a relatively late textile. Plain cotton textiles did not come into widespread use until the rise of the Lancashire industry in the 18th and 19th centuries and the use of mercerized cotton for the sewing thread places the stitching after the invention of the mercerizing process in 1844. The synthetic blue dye dates the piece some time after the 1860s and Naomi Tarrant, Curator of Costume and Textiles at the National Museums of Scotland, has said that the double-striped pattern is suggestive of shirting and this, and the wide-spaced machine stitching, would indicate a date within the first half of the 20th century.⁵

The balls appear to be earlier than the wrapper. The presence of natural dyes, such as red madder and brown tannins (and the crottle, if correctly identified), indicates that the balls pre-date the synthetic revolution of the 1850s and 1860s. The blue colorant indigotin is not datable and cannot even be distinguished from synthetic indigo, but its combination with natural dyes in several yarns implies that it, too, is probably from a plant source, woad or indigo. The identification of a mordant dye applied on top of indigo/woad is comparatively rare, but it has been noted before in a 17th-century Scottish sword-dancer's dress belonging to the Glover Incorporation of Perth (Dalrymple 1983; Grierson 1986, 37 and facing p 123).

The flax (linen) used to stitch the balls is no help in dating, as linen sewing thread was used from the medieval period until the 20th century. Wool and goat hair have also been in use in Scotland since the earliest times, as has the Hairy Medium fleece-type, but there was an increase in the number of white wools over pigmented (brown, grey or black fleeces) when improved stock were introduced during the Highland Clearances of the 18th and 19th centuries (Ryder 1983, 504–6).

To sum up, it has been difficult to find any clear-cut dating evidence for the balls, but in general terms they would fit most naturally in the 18th century, or the first half of the 19th.

The place of manufacture seems most likely to be Scotland. The wool, the goat hair, the flax and the dyes could all have been obtained there and the skills of native dyers would easily encompass the fast blue and ochre dyes and the blends. To this day, the attractive 'heather mixture' colour blends seen in the wound wool yarns remain a typical feature of Scottish knitted goods.

THE ST ANDREWS CACHE BALLS: PROVENANCE

The balls were found in the tower of St Salvator's College in 1954. The group of balls was wrapped in a piece of cloth that had been part of a shirt at the time of its manufacture, perhaps early in the 20th century, but was just a rag by the time it was used for wrapping round the balls. The cloth could have been added to the find in 1954, or earlier, but it is not likely that it was used to wrap the balls when they were first concealed, because this probably happened at least a hundred years earlier, long before the cloth could have been made. It is unfortunate that the circumstances of the 1954 discovery were not recorded. The only information available is that noted on the box containing the single ball. We do not know where exactly they were discovered, but the tower of St Salvator's College Chapel is a structure of considerable height and has in the past been used for storage. An earlier discovery of great significance, made in the tower around 1925, was that of a group of chemical apparatus from the 18th or early 19th century, including glassware, crucibles and earthenware retorts (Salmond 1950, 95). This apparatus is assumed to have been used in teaching chemistry in the 19th century and may have been transferred to the tower as 'redundant equipment' during removals that took place in the period 1891–1910 as new buildings for chemistry were provided. It is just possible that the exploration of the Tower and its 'hiding places' around 1925 was the occasion when the *cache* balls were wrapped in their

cloth. This, however, is pure speculation, and it is worth noting that the chemical apparatus would presumably have been stored more visibly than the *cache* balls, which, after all, were objects used in a once ‘banned’ sport.

In order to consider when the *cache* balls might originally have been deposited, it is necessary to outline briefly the history of the College buildings, particularly the Chapel Tower. The Collegiate Church was part of the original college construction, dating from the 1450s. Its magnificent tower, still one of the most impressive landmarks in St Andrews, originally finished in a flat summit. A spire was added in the 16th century and the parapet that stands today, in 1846. The tower contains five storeys between the pend below and the belfry. After the Reformation of 1560 the College Church ceased to be used for worship, and from 1563, when the Church began to be used by the Commissary Court of St Andrews, until 1761, when the Church was reopened for worship for the new United College and the parish of St Leonard’s, it is difficult to imagine to what purposes the Church Tower was put. The most important rebuilding that took place during this period was undertaken under Alexander Skene, Provost of St Salvator’s College 1680–90. His reconstruction and repair work, which included re-roofing of the church and re-pointing of the church and steeple, was so comprehensive that it has been said of Skene that, ‘so far as the buildings are concerned, he was really the second founder of St Salvator’s College (Cant 1950, 209). Skene’s reconstruction work possibly provides a terminus post quem for the concealment of the *cache* balls. Following Skene’s period, the college fell again into a state of disrepair. A description by John Macky, who visited in 1723, is typical of the period, noting that the chapel and cloister were ‘entirely neglected’ and the ‘Apartments for the Masters and Scholars, all built of Free-stone, but unaccountably out of Repair, they being hardly at the pains of keeping out the Rain or mending the Windows’ (Macky 1723, 85–6). In such an environment it is easy to

imagine the young students playing handball. After the unification of St Leonard’s College and St Salvator’s College in 1747 the latter’s buildings were selected for the new United College. Various repairs and piecemeal additions were made to college buildings and the church was brought back into religious service, as noted above, though parts of the college (notably the east buildings) remained in a ruinous state. Thus, when the University Commissioners visited St Andrews in 1826–7 they remarked on the decayed state of the college and it was not long before a comprehensive rebuilding began. Between 1829 and 1831 a new east building was constructed, between 1844 and 1846 a new north building was added and at the same time the old Hall and School on the west side of the quadrangle were demolished and the present cloister was added to the north side of the church, in addition to other decorative embellishments to the church. Further restoration work, mainly to the church windows and interior, took place under Principal Forbes in the 1860s, but the present appearance of St Salvator’s is largely the result of the work of the second quarter of the 19th century. It is difficult to imagine students playing handball in the new quadrangle and since the date of its completion roughly coincides with the date that *cache* is thought to have died out in the east of Scotland (Burnett, pers comm), this would seem the likeliest terminus ante quem for the concealment of the St Andrews *cache* balls.

The final aspect to consider here is the nature of the deposit. The group of balls is particularly interesting because it contains a mixture of complete and partially made balls. The widely differing conditions, from bare ‘inner’ corks to complete balls, cannot be explained entirely by decomposition within the group. While B2 and B3 look like balls that have ‘exploded’ out of their skins (though B3 has left no skin), and have since partially decomposed (producing much of the debris under the group), the smaller balls and corks would have produced, if they had decomposed

from complete balls, much more material (leather, yarn and fabric) than is presently visible. These may therefore have been stored in roughly their present condition; and if this is the case we can only assume that this group belonged to a *cache* ball maker/repairer. The find, incidentally, also provides important information on the composition of *cache* balls. Its deposit within the tower of St Salvator's would clearly suggest a University context and the University was one of the likeliest environments in St Andrews for *cache* to be played, since it provided both the courts (ie walls) and the potential players (students). Students undoubtedly played the game, but would they have made the balls? And would they have been able to secrete them in the College tower? We have no evidence for the identity of *cache* ball makers in St Andrews, though the town was a centre of golf ball making, and it is very likely that, given the similarity of the skills involved, the local golf ball makers might also have been able to produce *cache* balls when requested. Ball makers came from the same community as the University servants and the latter would have had access to the College tower.⁶ It is therefore possible that a college janitor was making *cache* balls for students as a sideline, though this is pure speculation. Another possible scenario for the deposition of these balls in the tower is that they had been confiscated by a University master.

CONCLUSIONS

These objects provide the first material evidence for the playing of *cache* at the University of St Andrews, confirming the documentary evidence that already existed. They also provide a significant addition to the meagre surviving evidence for the history of this game in Scotland.

The discovery of these balls in the tower of St Salvator's College suggests a University context for their use. The University authorities frowned on the game, at least during some periods, though there is documentary evidence

that students played *cache* and these balls were probably used by students of St Salvator's College or its successor, the United College. The likeliest time frame for the depositing of these balls in the tower was between the 1680s and the 1830s, according to both the evidence of scientific analysis of their material and the circumstantial evidence of the history of the game, the University and its buildings.

Perhaps the most significant contribution made by these items is that they reveal very clearly the process of manufacture. They show that the balls were made from re-used materials: corks from bottles (and one a fishing float?), scraps of cloth and dyed wool yarn, presumably from old woollen garments (there would have been no point in dyeing the wool for its use within a *cache* ball). Further investigation of other examples would be necessary to determine if the composition of these balls is typical. The only published Scottish *cache* balls of which I am aware are two examples in the collections of the National Museums of Scotland (H.1995.225 and 226) which appear in SCARAN (Scottish Cultural Resources Access Network: www.scran.ac.uk). These balls were discovered in a hole in a wall in Advocates Close, Edinburgh, during building work and are dated 1600–1800. They are described as having hand-stitched leather skins, 'stuffed with straw'. However, 'worsted balls' were apparently commonly used in Britain two hundred years ago for children's ball bouncing games, and these were 'made by binding worsted wool around cork' (Opie & Opie 1997, 130). Interestingly, another hand ball was found recently (1999) in York Minster, in a context which suggests it might have been deposited in the first decade of the 19th century. Fortunately, this ball was also analysed by TRA and the following notes are based on the report by Penelope Walton Rogers.⁷

The York Minster ball was smaller, at only 40mm diameter, than the St Andrews balls, though was nearly complete (two patches of the leather cover remained attached). Inside it

was composed of two layers of wool yarn, tightly wound over a ‘small spherical core made of a black crumbly material of uncertain origin’. The outer layer of yarn was ochre and its dye proved impossible to remove from the fibre in all solvents and acids, a reaction similar to that encountered before with Scottish ‘crottle’ dyes and paralleled in the analysis of the similar dye in one of the St Andrews balls. The inner layer of yarn was a dark grey wool, which, under the microscope, proved to be a blend of brown, blue and white fibres. The only dye detected in this yarn was indigotin, the brown and white fibres being undyed. The sewing thread of the outer cover proved to be flax. The analyses of the York Minster ball thus revealed at least some similarities between this and the St Andrews balls.

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NOTES

- 1 Originally in a telephone conversation, later confirmed when the objects were taken to the SMC conservator at the NMS.
- 2 The University Commissioners of 1642 mentioned ‘gouffe, archery, and other [recreations] of that kynd’ as ‘lawfull exercises’, whereas ‘carding, dyceing, amongst the students, or exercises of that kynd. . .are forbidden by the laws of the University’ – quoted from Dickinson, 1952, xxxix, no 5.
- 3 Initial conservation advice (1999) from Will Murray, Antiquities Conservator, Scottish Museums Council.
- 4 The full report on the analytical work is held in archive at the Museums Collections unit,

University of St Andrews, or may be obtained from the author at Textile Research in Archaeology, Marketing House, 8 Bootham Terrace, York YO30 7DH.

- 5 Information included in Lynn Grant’s Textile Conservation Report, 20 June 2000.
- 6 An example of overlap between the University and ballmaking is provided by the Balmannos: Richard Balmanno, apprenticed under Robert Armit, ballmaker in St Andrews, for seven years from 1704 (St Andrews Burgh Deeds, 1 August 1707: B65/5/2 p42), was the son of John Balmanno, University postman.
- 7 Made available by kind permission of the York Minster Archaeologist, R A Hall, and the Dean and Chapter of York Minster. The full report is available from Textile Research in Archaeology, Marketing House, 8 Bootham Terrace, York YO30 7DH.

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