

# JOURNAL OF THE PERTSHIRE SOCIETY OF NATURAL SCIENCE



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PERTSHIRE SOCIETY  
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# Contents

## **David Douglas**

*James T Aitken, Edinburgh*

## **Perth Building Survey**

*Jane Fielding and others*

## **Museums**

*Michael Taylor, Perth Museum*

## **Lochs of the Tay Basin**

*R W Duck, Dept of Geology, University of Dundee*

## **Crannogs**

*Nicholas Dixon, Institute of Maritime Studies,  
University of St Andrews*

## **How much does a Roman Urn?**

*Alison Reid, Perth Museum*

## **Obituaries**

## **Changes**

**Cover:** *Queen's View, Loch Tummel.*

*(Photo - Ian A McDougall)*

# Introduction

The Society, one of the oldest in the country, published Volume I of its Transactions in 1887. Many changes have taken place since that date but the Society continues to flourish and to provide extremely interesting lectures on a wide range of topics over the Winter session together with outings to places of interest during the Summer months.

In addition to the parent body the Society has Archeological and Historical, Botanical, Photographic, Geological and Ornithological Sections which provide specialist lectures and activities. Current total membership is around 420 but new members are always welcome. All meetings are held in Perth Museum, George Street, where further details can be obtained.

We wish to express our appreciation of the time, effort and expertise expended by all contributors to this journal.

The Editorial Sub-Committee.



## David Douglas

*James T Aitken*

Nineteen years after its foundation in 1804 the Royal Horticultural Society resolved to send a collector to New York to bring back fruits of American origin and other plants of the Eastern States. On the recommendation of Professor (later Sir William) Hooker of Glasgow University, then the leading botanist in Britain, the Society selected for this task David Douglas, a 24-year old gardener working on his staff at Glasgow University Botanic Garden.

David Douglas had been born on 25 July 1779 at Scone, Perthshire, the ancient crowning place of the Kings of Scots. His father was an estate mason and in due course, after schooling at the local school and at Kinnoull School, Perth, the young Douglas was apprenticed at eleven to the head gardener of the Earl of Mansfield at Scone Palace. In 1818 he joined the staff at Valleyfield near Dunfermline a noted garden long out of existence but significant as the only Scots garden designed by Repton the great English landscape architect. So this was an appointment to a plum post. After two years he secured a position in the Botanic Garden at Glasgow University where he attracted the attention of Professor Hooker. Soon he had obtained permission to attend Hooker's lectures and was accompanying Hooker on his botanical expeditions into the Scottish Highlands. Hooker was to refer to Douglas as 'his favourite companion' on such trips. The young man was obviously keen to learn, had great stamina, and had established a good relationship with his chief.

Originally it was to China that the Royal Horticultural Society intended to send its collector. But conditions there were not then suitable for plant collecting. So it was to eastern North America

that the society sent him for a year to collect in particular the cultivated varieties of hard fruits which already were becoming known as a significant crop.

In June 1823 he sailed from the Mersey and spent his 25th birthday—market day at Scone, he noted in his diary—at sea. Ultimately he returned to England in January 1824 having travelled through New England and up into Canada. He noted the vivid colours of the American fall, recorded the fine crops of Indian corn and marvelled at the quality and stature of the forest trees. Like the modern tourist he made the detour to see the Niagara Falls but noted only that he had been particularly impressed with a red cedar which grew out of the rocks and he ‘picked up an astragalus and a viola’.

The mission, according to the Society’s report, was ‘executed by Mr. Douglas with a success beyond our expectations’. He had secured many varieties of fruit and other trees not then known in Britain. He had also proved himself an able representative of the Society to the gardening elite of New York State. And he had done it very economically!

After six months in London Douglas was off again. This time with the co-operation of the Hudson’s Bay Company, Douglas was despatched by the Society to the west coast of North America. Following a nine month voyage he arrived at the mouth of the Columbia River in modern Oregon. He went upriver to Fort Vancouver on the opposite bank to the present city of Portland. This was to be his headquarters for the duration of this expedition. From there he travelled the surrounding country, sometimes alone, sometimes with staff or traders of the Company, sometimes with one of the few local settlers. They were robust these early pioneers but Douglas found himself equal to their hard life. Shelter at night could be a tent but was more likely to be a canoe upside down or a bark shelter or merely the blanket he carried. He journeyed on foot and on horse and frequently by canoe with Indian companions. Sometimes the natives were friendly—‘the man of grass’, one tribe dubbed him; other natives were dishonest and unfriendly. But Douglas was impressive to them. He was a sharp-shot—better with a rifle than the best. And his formidable stamina enabled him to stand the rigours of the primitive life.

His first expedition lasted till 1827. The total cost to the Society, including Douglas’s salary, was £400 and the Society considered that the discovery of the flowering currant, *Ribes sanguineum*, which he spotted on his first day ashore, was alone worth the cost. One of the other early plants he records was *Lupinus polyphyllus*, a parent of the modern Russell lupin. *Douglasia nivalis*—the first of the species and a tiny rock plant—he found in open pinewood at the Athabaska Pass on the watershed of the Rocky Mountains where from the lake there one stream flows west to the Columbia

River and the Pacific and another stream flows east and north to the Mackenzie system and the Arctic ocean.

To the native people plants were important as food sources. His first discovery of *Lewisia rediviva*—the sand hill rose of the Indians—was at the hut of a Scots-Canadian trapper whose supplies were low and who was subsisting on the starchy but nourishing flour made from its root. The tubers of *Camassia esculanta* were used like onions. Douglas disliked it. It gave him flatulence. His diary records that one night in an Indian hut he was 'almost blown out by the strength of the wind'!

*Erythronium grandiflorum* he found in lightly wooded country, in sandy soils. Often it was associated with the *Dodecatheon*, though he records this more on his journey over the prairies east of the Rockies to Hudson's Bay where he described it as 'imparting a grace equalled only by the European daisy or primrose'! The *Dodecatheon media*—the shooting star—he associated with marshy ground east of Edmonton. *Escholzia californica*, the Californian poppy he found on an early foray into that state with a Company party. On the same trip he records *Iris tenax* a ten-inch blue flower on river banks.

In September 1827 he left for London after trekking with a Company party overland from the west coast to Hudson's Bay. He was the first European not in Company employment to make the trip.

He was lionised on his return. The fruit of his expedition had been vast beyond expectation. His work had embraced the whole natural world. He recorded and sent home specimens of birds, animals and rocks as well as the plants for which he is notable. He carried out surveys and first mapped among other peaks that which he had called for his old Chief—Mount Hooker. He was elected a Fellow of the Linnean, Geological and Zoological Societies—a unique honour for a Scot of such humble origin. His views were sought by the Foreign Office, concerned about the status of British Canada and the Pacific North West and by the Admiralty. He was busy about the arranging and propagating of the plants he had brought or sent home.

But he was ill at ease in London. There was no niche for him. He fretted to be off again. And in October 1829 he sailed back to his old base on the Columbia. To his earlier patronage by the Horticultural Society and the Hudson's Bay Company, he had added commissions from the Foreign Office and the Admiralty. He travelled now as a man of stature. 'Dr. Douglas' he was styled. On this second trip he travelled more widely, north up the Fraser, and south into California as well as in the Columbia basin. California was still under Spanish influence and the bachelor Douglas lost his heart to the Catalan beauties. But he sent home an

outstanding harvest, particularly of annuals—*Godetia*, *Limnanthis*, *Nemophila*, *Clarkia*, *Phlox drummondii*, *Heliotrope*, *Nicotiana*, *Antirrhinum* and so many others—the backbone of the annual border which till so recently crowned the summer garden. The greatest curiosity of his Californian collection was the winter flowering *Garrya elliptica* named after Nicolas Garry, Secretary of the Hudson's Bay Company. Then too he found the giant redwoods. Among them were *Abies nobilis*, said to be the tallest tree to grow in Britain and the tree which is most associated with him, the Douglas fir, now named *Pseudotsuga menziesii* (after Dr. Archibald Menzies from Aberfeldy who had been surgeon on Captain Vancouver's voyage of discovery in 1792).

He conceived the idea of returning by Siberia, travelling up the Fraser River into Alaska, thence over the Bering Sea and by Siberia and Russia to Britain. By this time his great exertions had already taken their toll of his health. He was arthritic and the sight of one eye had gone. He looked twenty years older than his thirty years. The Fraser trail proved immeasurably worse than he had imagined. Finally his canoe was wrecked; his specimens, diaries, seeds and papers lost; he and his companions survived, but only just, to struggle back to Fort Vancouver to await a ship for England. Eventually he boarded a vessel for Honolulu to await a connection there.

His harvest was enormous. He had in two short expeditions by his enormous exertions, his great dedication and his vast talent carried out the essential botanical exploration of the Pacific lands of North America.

In the garden his annuals wrought a revolution by providing the flowers for the bedding schemes of the Victorian and Edwardian garden—flowers at their most spectacular. The more sophisticated have his *Calochortus*, *Brodiaea*, *Scilla*, *Camassia*—the bulbs of the mountains. The shrub garden has *Berberis nervosa* (the Oregon grape), *Cornus stolonifera* and the huckleberry. The romantic musk—*Mimulus moschatus*—whose haunting fragrance was said to have been lost in the Great War was his discovery in the Cascade Mountains though his diary makes no mention of the scent. He found the madrona of the beautiful bark (*Arbutus menziesii*). He sent home eighteen species of lupin and five of evening primrose. His trees are the backbone of the lumber industry around the world. His own Douglas Fir he described as "one of the most striking and truly graceful objects in nature". He found it on thin soils in dry upland areas. The Sitka spruce (*Picea sitchensis*) which now clothes many Scottish hills he found in poor damp soils—'not so large or so beautiful' as the Douglas fir, but 'should thrive in Britain', he wrote in his notes. When he sent back seed of the Monterey pine (*Pinus radiata*) from California to his old chief

Professor Hooker he wrote 'You will begin to think I manufacture pines at my pleasure'. It is now the main commercial tree of the southern hemisphere.

Douglas was unable to wait inactive for his homeward ship. He went botanising in the interior of Hawaii. In July 1834 on such a trip he fell into a pit dug by natives to trap wild bulls and was most horribly gored to death. His little terrier dog was found sitting waiting nearby.

He was buried there in Honolulu where the local Burns Club erected a cairn in his honour. The North Inch of Perth contains a memorial garden. In the churchyard of New Scone in 1841 a monument was erected after public subscriptions and this monument is now in course of restoration.

But his true commemoration is in the flowers which grace the gardens of the temperate world and the trees which provide its timber crops. He was one of the world's greatest botanical explorers, a great son of Perth and of Scotland.

# Perth Building Survey

*Jane Fielding and others*

It is well known, perhaps even a commonplace, that Perth is a city both of beauty and architectural interest. However this is not confined to Marshall Place or Rose Terrace. Even from a casual stroll through the town it is obvious that there is also more than this to Perth, though sometimes it can be hidden behind a bright shop display or dingy tenement. It is worth pausing and looking up at the detail of the familiar building. There can sometimes be a pleasant surprise.

However over the past few years, due to the pressures of redevelopment, many of these older buildings have been vanishing, taking with them part of Perth's past.

Thus in May 1981 a Manpower Services scheme, sponsored by Tayside Regional Council, was set up under the Community Enterprise Programme to conduct a survey of Perth's historic buildings. The members of the team have been involved in producing measured drawings (plans, elevations and sections), doing historical research and making a photographic record of the buildings, priority being given to those threatened by demolition or alteration. To complement these detailed studies, other buildings in the town centre have also been recorded, photographed and had their original Dean of Guild plans located or sketch plans made.

However it wasn't always as simple as it first seemed—doors opened into dark and floorless rooms, crucial measurements were behind man-size nettles and unofficial inhabitants were unwilling to suffer disturbance.

The frequent presence of scaffolding in the High Street indicates that it has been one major area of activity for developers and a variety of methods have been used to record the buildings here. Rattray's distinctive tobacconists shop was the first property to be visited; plans were drawn and photographs taken of the interior fittings, some of which will be on display in the museum. It had a similar plan to another early 19th century building nearby, 130 High Street, now also demolished. This contained an elegantly curved stair and the original decorative details of moulded shutter and door surrounds, which gave charm to the interior of this otherwise plain building.

Wallace's buildings, demolished for the House of Fraser development, were recorded in a different way. The original plans, painstakingly drawn and coloured, for the part of the building on the corner of High Street and King Edward Street still exist, so these were supplemented by photographs and historical work. We discovered that it was built in 1905 for John Marshall by James Marshall of 28 Scott Street.

It is not only property waiting for demolition that has been studied. Many shops have empty flats above them and as these are usually unmodernised we had the opportunity to record the conditions in which the people lived, and then discover their names and occupations from street directories, giving a more complete picture of their lives than merely the empty rooms.

Sometimes interesting details can be hidden above modern shop-fronts. At 45 High Street, although the elevation and plans to first floor have been altered, if you look up you will see that the original window glass remains and inside it contains some of the original panelling, door surrounds and cornices.

The remaining buildings in the High Street have not all been drawn but recorded by methods similar to those used at Wallace's. An extensive search was made in the Dean of Guild records (from the 1870s these were submitted as the equivalent of today's Planning applications, for any new buildings or alterations and are a valuable source of information). To our relief, plans were found for a number of the large elaborate buildings, for example the Guildhall and the corners of Kinnoull Street and High Street, which would have given the most problems to record. For the buildings where no Dean of Guild plans exist and which are still in use, sketch plans were made and photographs taken. Most owners were very helpful and interested in the work.

Thus at this time the opportunity existed to record a substantial number of buildings which, faced with the pressures of redevelopment, have already been demolished.

It is not just in the main streets that work has been taking place. A number of houses on the edge of the town centre have been demolished or remain boarded up.

Work was first concentrated in Canal Street (Plate 1). The large tenement block 31/33 has Dean of Guild plans. It was built for a Mr. Bell. Drawings were made of three of the other buildings representing different dates and plan forms.

Number 45/47 is dated to the mid 19th century and has a round headed window in the rear wall. Number 39 is set back from the frontage through a pend in the other building and has ornate iron railings. These minor features add interest and character to



Plate 1.

buildings which recently presented only a derelict and decaying aspect.

In the triangle—Canal Crescent, King Street, Charterhouse Lane—a further six buildings were recorded. All were in a decrepit condition due to development proposals for the area, but there were still traces of the original character of the area in the unpretentious dwellings with quiet garden areas. Further from the centre, the Whitefriars-Longcauseway tenements were demolished during 1982. They varied in date, though the majority were of the later 19th century. The large block again had Dean of Guild plans. These were built for the Co-op. Other buildings, including a substantial tenement built in the late 19th century, and an earlier cottage, had plans, elevations and sections drawn. The removal of these buildings enabled excavation to reveal traces of the Carmelite friary.

The boarded up houses in Keir Street were investigated and new plans were drawn for all five, as no plans existed. Of the five houses, two were plain early 19th century, fronting the street, and featuring a circular external stair. The other three comprised a substantial house, a cottage in the front garden of this house, and

a narrow building with a decorated projecting bay. This gave a large variety of building types in a small area.

However such complete records were not obtained in every case. One 18th century building in Speygate was rapidly demolished due to its unsafe condition and the only information to be gained was from the remaining gable wall.

In Kinnoull Street two buildings were due for demolition. Only one was recorded, the other having been demolished over the weekend.

Our study of Perth buildings not only fulfils the aim of providing an archive record for the future but also provides interesting information which can be used now to give an appreciation of the architectural history of Perth. For example the different types of plan form used in different periods or areas can be traced, or the amount of decoration and thus time and money spent on various properties can be determined. Also from the Dean of Guild plans, the changing style of successive buildings in a site can be traced. For example, in the High Street plans exist for a late 19th century replacement of a plainer Georgian building, which has now itself been superseded by Menzies' modern structure.

It is interesting to trace the growth of an area, as opposed to an individual site, from open ground to the buildings we see today. This can be seen on the lands of the King James Hospital as they change from garden in 1798, through an outline of streets and houses in the Feu plans of the first years of the 19th century, to the detailed elevations seen today. This reveals how the city gradually outgrew the city walls.

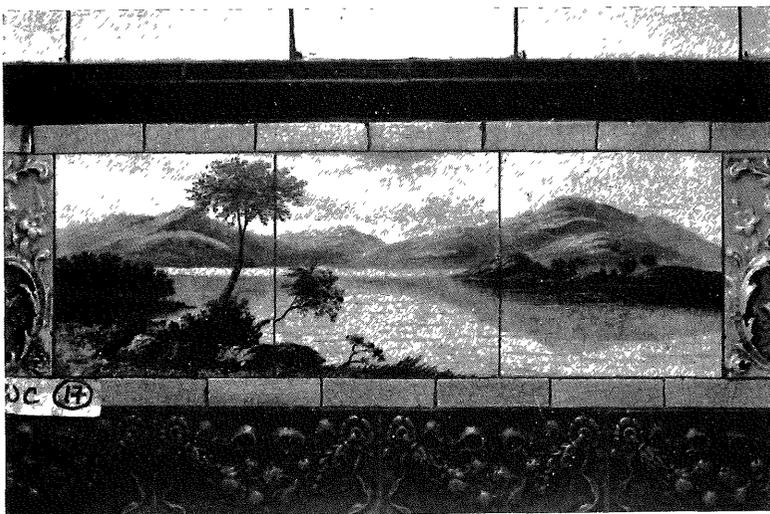


Plate 2.

Not all the buildings recorded have been residential, other aspects of Perth life have been covered. These included the tiled corridor in the Windsor public house (Plate 2). In addition to coloured and patterned tiles covering the walls there was a frieze of Scottish scenes encircling the corridor with a floor covering of mosaic tile patterns. The overall effect in a confined space was impressive.

Tiles depicting individual animal heads and rural scenes (Plate 3) were recorded in Mathieson's, the former butcher's shop in St John Street. These tiles may still be seen in the present shop.



Plate 3.

Another building undergoing renovation rather than destruction is the City Mills. The machinery is being recorded and restored and a new use as craft workshops has been found. Thus a seemingly redundant building has been given a new lease of life and has become an integral and economic part of Perth today.

Other buildings studied include the Central District School, recorded photographically as Dean of Guild plans exist, both for the original design and modified proposals. It contains a beautiful stained glass window and wrought-iron work. Ecclesiastical buildings were also covered including the chapel at 106 South Street and (further up the street) Wesley Court, with its prominent arched windows. A relic from Perth's past as a major railway centre, Princes Street Station was also drawn. It is a wooden structure with elegant 'Gothic' windows (Diagram 4).

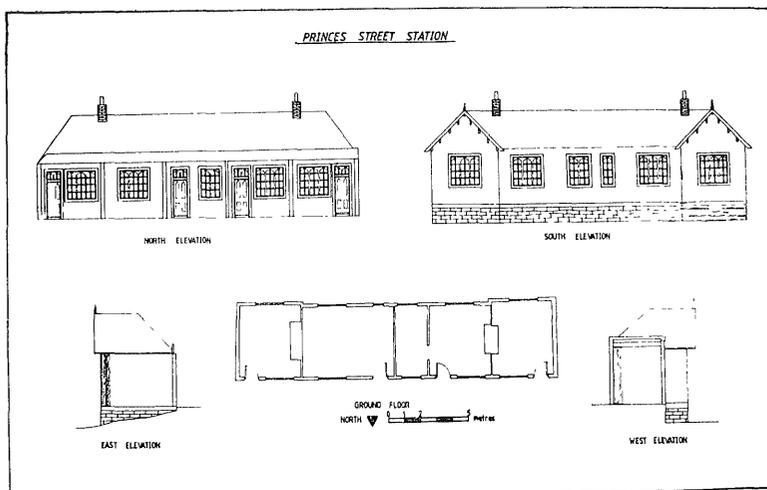


Diagram 4.

Architectural details, though best seen in context on a building, do emphasise the care and craftsmanship that went into many of the buildings. In addition to the architraves, cornices and other features already mentioned, fanlights and rainwaterheads enhance the exteriors of buildings.

It is hoped that this article has given some idea, necessarily very limited, of the quality of the architecture in Perth left by past generations for us to appreciate. The object of the scheme was to ensure that some record of this was made for the future and all knowledge of it not lost. No provision existed to press for preservation but throughout the year we asked ourselves two questions. Firstly, is adequate care being taken of what remains? Sometimes old buildings were treated sympathetically, such as Mathieson's, but all too often 'old' seemed to be the reason for neglect or destruction. Secondly, what is this present age leaving for the recorders of the future? Would a similar scheme in another hundred or two hundred years be as rewarding as the present one has proved?

# Museums in Perth : A Short History on the Centenary of the Perthshire Natural History Museum

*Michael Taylor*

The history of Perth's museums is long, interesting and at times very complex. The story began in 1784 with the founding of the Literary and Antiquarian Society of Perth by the Revd. James Scott, Minister of West Kirk, St. John's. The Society was conceived primarily as a vehicle for the collection and study of historical documents and antiquities relating to this part of Scotland but it also had other objectives; in his "Preliminary Discourse" Scott said after 15 pages of text, in his concluding remarks:

"That the scene of our amusement may be more large and that useful hints may be suggested for the better culture or improvement of our country, it is proposed, that the Plan of our Society should extend to the various branches of natural history."

This treatment of natural history as either a harmless pastime or as a subject which could benefit agriculture in particular, is typical of the late 18th C and it was the reaction against this philosophy which produced the "enquiry for enquiry's sake" scientists of the 19th C.

In 1802 the 'Plan' on which basis the L & A. Society was granted a Charter stated that the purposes of the Society included the collection of:

"maps and descriptions, whether ancient or modern; topographical delineations; portraits of eminent persons; medals and coins; and curious natural productions whether of the animal, mineral or vegetable kind."

The emphasis is on the *curious* not the commonplace and among the early donations are a "very elegant grasshopper" and "a very singular animal resembling the dragons of fabulous history".

At this time the Society's collections were housed in a 'closet' adjacent to the Perth Library in St Anne's Lane but were moved to rooms in the Library building which was near St John's Kirk

in 1818. These were obviously not suitable and apparently many of the natural history specimens perished.

In 1822 however the subscribers to a memorial to the late Provost Thomas Hay Marshall, who was responsible for much of the new development in Perth at this time, offered to erect a new hall for both the L & A Society and the Perth Library. The building was designed by David Morison who is more usually thought of as a printer and publisher. This building too would prove unsuitable as a functional museum but for the moment the Society was well pleased.

Through the first half of the 19th Century, the Society had a steady membership, although they seem to have acquired some members at least by writing to them informing them of their election and asking for a subscription!

The Society seems to have played no part in the scientific renaissance of the mid-19th Century. Plans for a new educational institution, the Albert Institute to be built around the Marshall Monument, were put forward during the 1860's. Despite the purchasing of land, the plans eventually fell through. However, the idea was to rise again some fifteen years later.

Meanwhile Perth had acquired another Museum, this time at the Murray Royal Asylum. I would suggest that in a very short space of time this museum grew larger than the Natural History Section of the L & A Society Museum, but of its collections which seem to have been dispersed c. 1902, nothing substantial now remains. The man behind this museum was Dr Lauder Lindsay a scientist of some standing who believed in the therapeutic value of museums. He seems to have been very much a loner and did not join the L & A Society. Writing of it in 1868 he says:

“(It) appears virtually defunct, so far as concerns any positive contributions to either natural history, archaeology, or literature.”

This was also apparently the view of Dr Francis Buchanan White who at this time was a newly married M.D. of independent means just back from a tour of Europe. Dr White was obviously much impressed with continental museums, particularly that of Dr Schimper at Strasbourg. He was also aware of the growth of local natural history societies taking place at this time and of the lack of such a society in Perth. So, in 1867, he founded the Perthshire Society of Natural Science to which the following remarks were addressed:

“For some time past it has been the desire of the naturalists of Perth that their city, the capital of a county perhaps richer in its flora and fauna than any other in Britain, should have an

association, the members of which, by working together and mutually assisting each other, might advance the cause of those sciences which they love; and that the 'Fair City' should not, in this age of reform, be totally unrepresented in the scientific body of Gt. Britain. In Scotland, with one or two praiseworthy exceptions, such societies or associations are entirely wanting, while in England, especially in certain districts, every little town has its flourishing Natural History Society and Museum."

. . . and later . . .

"As regards the formation of a museum, the Society, while not neglecting to form a good typical collection, should more especially devote itself to the acquisition of as perfect a museum as possible of all the natural products of the county . . . Though we have no place as yet to hold a collection, in the meanwhile each member might easily collect and lay aside specimens for the museum; and thus when we obtain a suitable receptacle, we shall have the nucleus of a collection."

The formation of the PSNS galvanised the L & A Society into action. With Dr W. C. McIntosh of Murthly Asylum at the helm, additions were made to the collections which placed a strain on space at the Marshall Monument. Attempts were also made to absorb the younger Society but to no avail. The PSNS went from strength to strength collecting specimens and storing them in its rooms, coincidentally also in St Anne's Lane, for the great day when a museum building would be available.

The lack of space also forced the PSNS to consider the future of their collection in 1876, but it was in 1877 that Sir Thomas Moncrieffe put forward in detail the idea of the museum—preferably attached to a larger educational complex. This prompted the L & A Society to put forward their own scheme for the conversion of the old St Leonard's Free Church. This was rejected by the PSNS who in turn in 1878 put forward detailed plans for a purpose built museum in Tay Street which would, if the L & A Society wished, contain room for their museum. This offer was rejected by the L & A Society who nevertheless said that they would still welcome any PSNS members as members of their own Society. At this stage the two Societies went to arbitration. A committee of townspeople heard the cases of the two museum schemes and apparently decided in favour of the Tay Street Scheme. However, the L & A Society which was apparently not well represented at the meeting, rejected the decision and finally went their own way.

Here matters paused until the early death of Sir Thomas Moncrieffe in 1879. To further his plans, a memorial fund was established, subscriptions invited and detailed plans of the proposed museum drawn up. The major contributor was Robert Pullar who

in 1881 had finally fallen out with the L & A Society after their supposed misuse of his name in one of their attacks on the PSNS. He contributed £500 towards the total of £1800 which the project cost and the building was completed in a mere 7 months. On the 1st of October 1881 Robert Pullar received the deeds on behalf of the Trustees.

So Perth now had its third museum! This one however was soon to eclipse the other two and most references to it over the next thirty-odd years hold it up as a model provincial museum, indeed it was often referred to as the best in the country.

The L & A Society meanwhile pressed on with its own plans and held a large bazaar on 5-8 October just after the opening of the Perthshire Natural History Museum. This event was apparently very successful but the funds raised allowed the erection of a hall 50' × 25' (only half the size of the planned one) at the rear of the Marshall Monument at a cost of £862.11.1½d. At this time the L & A Society lost its major champion W. C. McIntosh who moved to St Andrews University to become Professor of Natural History. The Society then seems to have found the new hall rather an embarrassment. An exhibition of pictures was held there in 1887 and in 1901 there was a proposal to use it as a club for ladies. The L & A Society went downhill rapidly—in 1896 its subscription was thirty shillings—that of the PSNS was only five shillings! At this time the Natural History specimens were offered to the PSNS and St Andrews University. In 1914 the L & A Society gave its museum to the city and ceased to exist.

Meanwhile the Perthshire Natural History Museum went from strength to strength and space rapidly became a problem. In 1892 fund-raising started for an extension and this (which cost twice as much as the original building) was completed in 1895. Sir Robert Pullar was again the major contributor. On 29th November it was opened by Sir William Flower of the Natural History Museum, London. His address at the opening is still standard reading for museum staff. Part of it reads:

“Some persons are enthusiastic enough to think that a museum is in itself so good an object that they have only to provide a building and cases, and a certain number of specimens, no matter exactly what, to fill them and then they think the work is done, whereas in truth the work is then only begun. What a museum really depends upon for its success and usefulness is not its building, nor its cases, nor even its specimens, but its curator. He and his staff are the life and soul of the institution, upon whom its whole value depends; and yet in many—I may say in most of our museums—they are the last to be thought of. You might as well build a church and expect it to perform the duties required of it without a minister, or a school without

a schoolmaster, or a garden without a gardener, as to build a museum and not provide a competent staff to take care of it. And yet how often is that done."

The PSNS had recently appointed Alex Roger as Curator on a salary of £110 per annum and could obviously not sustain this level of expenditure. It negotiated with the then Town Council and in 1902 the museum and the collections were passed to the city. In the 1920's, when the provision of bequests from Mr Robert Brough and Mr R. Hay Robertson enabled the Town Council to build an Art Gallery in Perth. The Tay Street site proved unsuitable for development. So the new galleries were built adjacent to the Marshall Monument which was considerably altered internally. The natural history collections were transferred from Tay Street to the new building where they have remained. The Perth Museum and Art Gallery was opened by the Duke and Duchess of York (later King George VI and Queen Elizabeth) in 1935, and the building has remained structurally unaltered since that date with the exception of the dome of the Marshall Monument. In 1953 the original lead and timber structure was found to be unsafe and was replaced after much debate by a lighter one of copper and steel.

The Museum and Art Gallery now contains three sections: Natural Sciences, Human History and Fine and Applied Arts, each with its own specialist staff. There is a programme of temporary exhibitions throughout the year and modern permanent displays of natural and local history are planned for the near future. Enquiries about the collections are always welcome and facilities are available for study by prior appointment.

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During the evening of Sunday, 1st July, 1984, a spectacular blaze gutted the three storey Victorian building on the corner of Tay Street and Canal Street. The buildings damaged by fire are adjacent to the Old People's Welfare Hall in Tay Street which, when first built in 1881 was the museum, library and lecture room of the Perthshire Society of Natural Science. The imposing group of buildings fronting Tay Street and extending into Canal Street were built to the design of Perth architect John Young and the four storey square tower on the corner was distinctive in Perth's waterfront as were the crowstepped gables and gablets. The corner building was purpose built as a public hall and was for ten years Perth Opera House where many well-known performers entertained.

The last performances were D'Oyly Carte's Gondoliers and Yeoman of the Guard in May 1891. Perth Opera House, erected at a cost of £9,000, was put up for auction by Messrs. Brady and Sons, High Street, and was bought by Perth Baptist Congregation for a fraction of the original cost. Members of the Baptist Church have worshipped there ever since. Due to the extensive fire damage the whole corner building had to be demolished. Regretfully no part could be saved. The site is in a conservation area and is of major importance on the riverside. Rebuilding is out of the question because of prohibitive costs. At present, proposals for the site include sheltered housing for which there is a demand within the area of the town's centre.

# Lochs of the Tay Basin

*R W Duck*

Department of Geology, University of Dundee

The River Tay and its tributaries drain a land area of some 2,500 square miles or 6,500 square kilometres into the Tay estuary. This area, known as the Tay basin (Figure 1), is the seventh largest drainage basin in the British Isles. However, the Tay is the foremost British river in terms of discharge. At the Tay-Earn confluence the combined average daily input of fresh water into the estuary is about 180 cubic metres per second (Pontin and Reid, 1975). Thus the Tay basin discharges more water than the Thames and Severn basins combined (Buller *et al.*, 1971). A total of seventy fresh water lochs are contained within the basin and through these pass the waters from more than a quarter of the area (Buller *et al.*, 1971). They range in size from large deep water bodies such as Loch Tay, Loch Ericht and Loch Rannoch, down to tiny shallow lochans.

Some of the first real scientific interest in Tay basin lochs, and indeed Scottish lochs in general, was shown by Mr. J. S. Grant Wilson of H.M. Geological Survey. He undertook bathymetric surveys of 'the chief Perthshire lochs'; namely Loch Tay, Loch Rannoch, Loch Earn and Loch Tummel, for which he recorded maximum depths of 510, 420, 268 and 124 feet, respectively. His bathymetric maps were published in the Scottish Geographical Magazine in 1888. In surveying these lochs the system he adopted was to take a series of soundings (50-80 yards apart) along parallel lines from one side of the loch to the other. These parallel lines were fixed at intervals of about quarter of a mile, and the observations were checked by other soundings taken on lines extending diagonally across several of the former. A steam launch was employed on Loch Tay, while for the other lochs a rowing boat proved sufficient (Grant Wilson, 1888).

In all probability Grant Wilson's work provided a stimulus to the mammoth project which was to commence a few years later in 1897 under the direction of Sir John Murray and Mr. Fred P. Pullar. The principal aim of this project was to survey the depths and produce bathymetric charts of all, or as many as possible of the lochs of Scotland—a formidable task.



The first lochs to be surveyed were those of the Trossachs and Callander district followed by the remaining lochs of the Forth basin. Attention was then directed to the Tay basin lochs and in particular to Loch Ericht and Loch Garry. In February 1901, with the latter two surveys having been completed and the number of lochs surveyed totalling fifteen, Fred Pullar lost his life under tragic circumstances. He drowned whilst attempting to rescue a number of people who had fallen through ice into Airthrey Loch, close to his home at Bridge of Allan.

At first it seemed that Pullar's death would signal the end of the loch surveys. However, his father Lawrence Pullar, insisted that the work should continue. Moreover, he donated a sum of £10,000 to provide the means for carrying on the surveys and assumed his late son's role as co-director. Now placed on a more secure financial footing the surveys were resumed and they continued until 1909 by which time a grand total of 562 lochs had been sounded, including 59 of those in the Tay basin.

The surveys were conducted from rowing boats along traverses between known end points. Depths were determined by means of a lead-line running through a winch system, designed by Fred Pullar, which recorded on a dial the length of line paid out. Uniform spacing of soundings was achieved by measuring the depth after every thirty pulls by the oarsman. Locations of soundings were fixed by sextant in some situations and in others by lines of sight on prominent shoreline features.

The accounts of the various surveys were published in several journals but ultimately all the charts and descriptions of the lochs were collated and published as six volumes issued from the Challenger Office, Edinburgh, in 1910.

With a surface area of over 10 square miles, Loch Tay is the most extensive water body in the Tay basin. However, the Murray and Pullar surveys revealed it to be not quite the deepest. The maximum recorded depth of 508 feet was exceeded only in Loch Ericht where 7 soundings measured depths of up to 512 feet. Thus, according to Murray and Pullar, Lochs Ericht and Tay were respectively the fifth and sixth deepest lochs in Scotland. Their nearest Tay basin rival was Loch Rannoch which reached a mere 440 feet, some 20 feet more than the maximum depth recorded by Grant Wilson.

Since the days of Murray and Pullar the advent of hydro-electric developments has caused extensive modifications to the Tay drainage network, with the construction of many power stations, aqueducts, tunnels, weirs and dams. Several new lochs, such as Loch Errochty and Loch Faskally, have been created by damming of former river valleys whilst the levels of many existing lochs, such

as Loch Lyon and Loch Tummel, have been raised. In fact, only very few of the major water bodies in the basin, for example Loch Laidon, have escaped some form of control and/or enlargement as a result of incorporation within hydro-electric schemes.

Almost a decade ago, personnel from the Tay Estuary Research Centre (University of Dundee) became interested in the transport of sediment into the estuary by the Tay basin rivers. A natural progression of their studies was to focus attention on the lochs, which act as traps for sediment in transit through the river systems. A programme of re-surveying the lochs was thus instigated, principally to determine whether any degree of infill could be detected since the early surveys. To date, new bathymetric charts have been produced for Loch Earn, Loch Tay, Loch Tummel, Loch Benachally, the Lochs of Butterstone, Marlee and Lintrathen and the Backwater Reservoir (Figure 1). Of these, only the latter, formed in the late 1960's by the damming of the Melgam Water to provide water for the City of Dundee, had not been surveyed previously.

The present day surveying techniques differ markedly from those of Murray and Pullar—the lead-line being superseded by echosounders. These produce continuous records of the depths beneath moving research vessels which, needless to say, are no longer oar-propelled. Position fixing is now achieved by precision electronic apparatus utilising radio waves and accurate to within two metres. Although by no means the largest or deepest of the re-surveyed lochs, Loch Tummel has proved to be one of the most interesting. It was more than doubled in length when nearly 300 ha (740 acres) of land, along the course of the River Tummel, were flooded by the closing of the Clunie Dam in 1950. The associated rise in water level of just over 5 m (17 feet) resulted in the isolation of An Dun, formerly a rocky promontory at the eastern end of the loch, and the creation of the smaller, locally named, Gull Island, further east. Thus the famous 'Queen's View' was substantially modified.

The new bathymetric chart of Loch Tummel is presented in Figure 2. The 5 m contour line on this chart approximately marks the position of the old shoreline which is clearly revealed on echograms across the central part of the loch. Perhaps the most striking feature of Figure 2, however, is that the old meandering channel of the River Tummel remains essentially unaltered under water at the western end of the loch. Furthermore, echograms from this area show not only the preservation of the main river channel but also raised banks or levées, formed by deposition along its margins, and back swamp channel areas, formerly occupied by water only during periods of flood. Although submerged for over 30 years these features appear remarkably well-preserved, having been neither obscured by sedimentation nor 'planed-off' by flood waters as one might have expected.

Despite the obvious advances in surveying techniques the new bathymetric charts, in general, show very close similarities to their respective Murray and Pullar versions which “. . . leaves the modern surveyors with a profound admiration for the work of their predecessors . . .” (Al-Ansari and McManus, 1980). Differences in detail reflect the use of continuous echo profiles from closely spaced traverses.

In order to detect any infilling of the various lochs it is necessary to compare depths recorded at identical positions in both surveys. This, however is not easy in view of the different methods of survey employed, in which recorded depths do not necessarily relate to the same bed level. The Murray and Pullar lead-line method is subject to errors from at least two sources. Firstly, wind action may induce boat drift causing the sounding line to fall at an angle, resulting in an over-estimation of depth. Secondly, depending on the nature of the bottom sediments, the lead weight may sink into the loch bed for an unknown distance, again possibly over-estimating the depth. Grab samples, collected in conjunction with the recent surveys, have revealed that the central floors of the lochs are coated with gelatinous black muds of very high water content. Thus it is believed that the latter source of error would be particularly significant.

The presence of superficial fluid muds causes further problems in the definition of the “bed” of the lochs because it is not known what level within these mud layers acts as a reflective surface to echo-sounder signals. However, using echo-sounder and lead-line simultaneously in Loch Earn, both techniques “. . . seem to identify the same surface” (Al-Ansari and McManus, 1980).

Consequently, attempts have been made to compare depths recorded in the recent

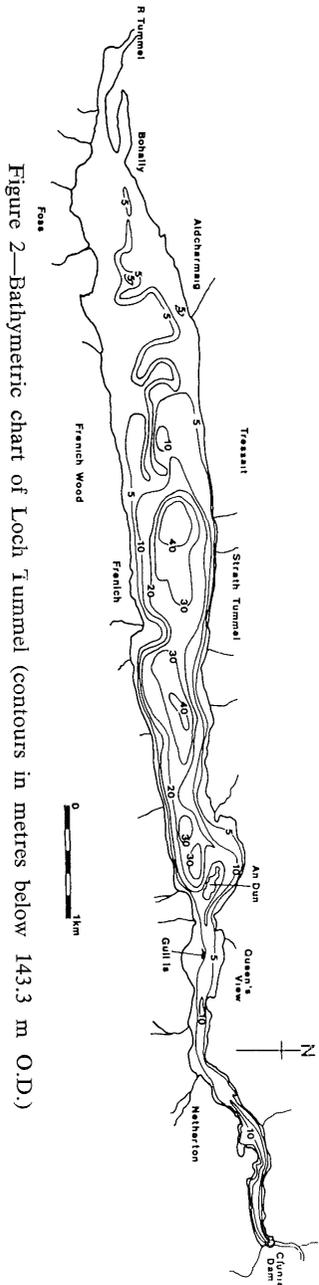


Figure 2—Bathymetric chart of Loch Tummel (contours in metres below 143.3 m O.D.)

surveys with those of Murray and Pullar. In each instance this has involved conversion of depths to like units and reduction to the same datum. Based on identifiable areas of flat bed, where soundings could readily be compared, depth variations range from -40 cm to +20 cm in each loch. This range, however can be accounted for by the different survey methods and positional errors resulting from chart comparison. Moreover, it cannot be regarded as any indication of either infill or scour in specific areas.

On the basis of direct measurements of mud volumes deposited in known time periods on the floors of temporarily drained reservoirs it is possible to estimate the erosion rates in their catchment areas (e.g. Cummins and Potter, 1967; Lovel *et al.*, 1973). Conversely, an estimate of the erosion rate in a catchment, if available, may be used to predict the amount of material entering a water body each year.

An estimate of the rate of erosion is available for the Tummel-Garry catchment. Here the average amount of material removed annually is estimated to be 104 tonnes/km<sup>2</sup> (Al-Jabbari, 1978). On the basis of this figure it has been demonstrated that the rate of infill of Loch Tummel would have been almost 2 mm/year prior to damming and less than 1 mm/year thereafter (Duck, 1982). Thus accretion of just over 10 cm would be expected between the Murray and Pullar and recent surveys. Similar calculations suggest a maximum accretion of some 12 cm over the floor of Loch Earn in the same period (Al-Ansari and McManus, 1980). The above figures are in good agreement with those obtained by bathymetric chart comparison.

Thus the information available on the lochs of the Tay basin indicates that, in general, they are experiencing very low rates of siltation. Moreover, despite considerable advances in surveying techniques, only minor bathymetric changes can be detected since the surveys of Murray and Pullar over seventy years ago.

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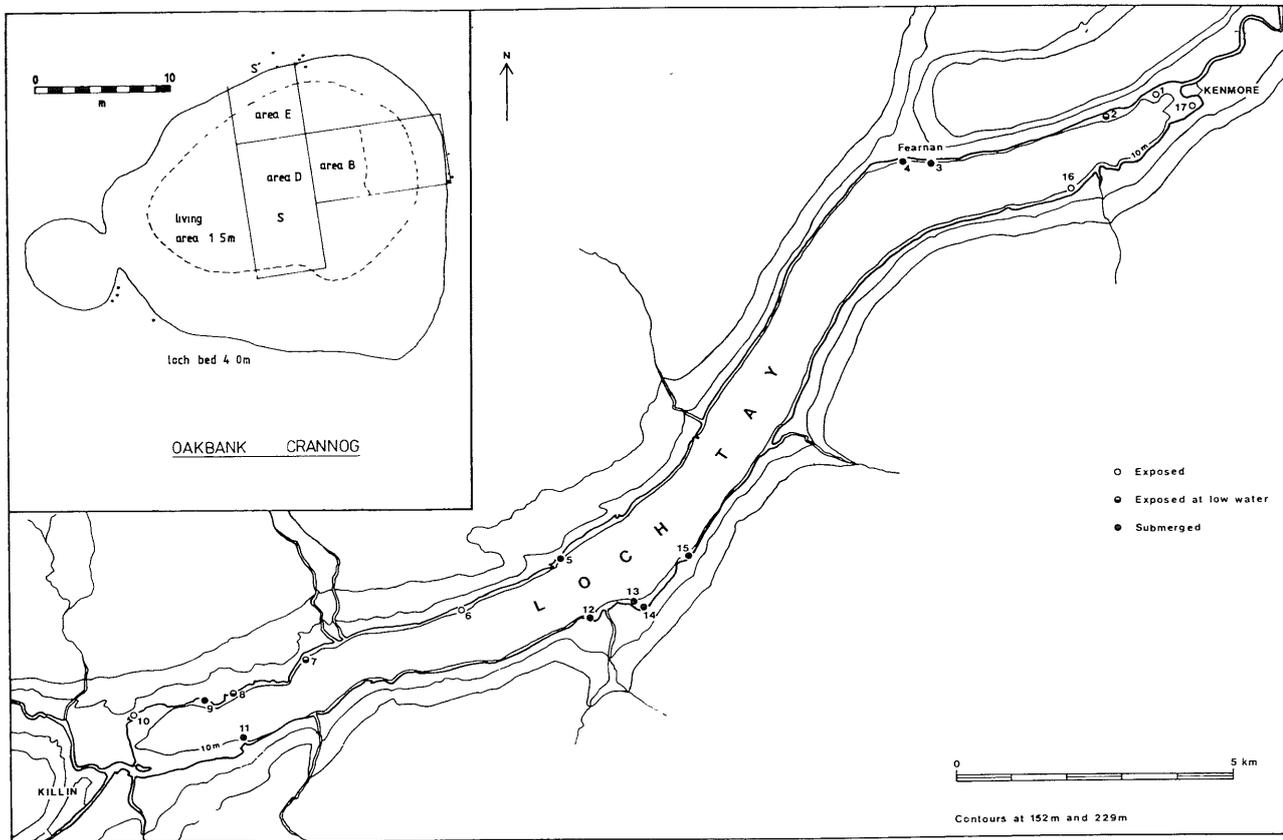
# The Crannogs of Loch Tay

*Nicholas Dixon*

In 1978 a survey of the crannogs (ancient dwellings built on artificial platforms in the water) in Loch Tay was carried out by members of Edinburgh University Department of Archaeology and Edinburgh University Subaqua Club. This survey followed basically the same procedures as that carried out by Drs. I. Morrison and D. McArdle in Loch Awe in 1973 during which 20 crannogs were identified. During the Loch Tay survey 17 definite crannogs were recognized and recorded (see distribution map). One of these, situated off Oakbank Cottage in the village of Fearnan on the north shore of the loch, included the remains of a causeway to the shore and an extended area on the west side suggested the remains of a landing stage. Timbers, both vertical posts and horizontal planks and beams, were observed on many parts of the site. Two of these timbers were sampled for radiocarbon datings prior to the survey.

The remains of most crannogs are now submerged, as attested by the Loch Tay and Loch Awe surveys, where 25 of the 37 sites are completely underwater either all year round or for most of the year. In the past this has made excavation impossible, except in the case of sites drained for agricultural development or hydro-electric power schemes, but with the development of underwater working techniques in the last 20 years such excavations have become not only viable but, in the case of crannogs, desirable. This desirability is a result of two things. Firstly, the fact that the major parts of these sites are of timber construction, and secondly, the excellent preservation of organic materials, including the timbers, due to immersion in the cold, peaty water of the lochs. The timber parts of the structure are, of course, waterlogged but while underwater they weigh very little and put little strain on delicate stratified layers or fragile artefacts. The same timber out of water assumes a very much greater weight, mainly due to the substantial amount of water it contains, and exerts damaging and distorting forces upon the archaeologically important features of a drained site. Also, when a crannog is exposed to the air, deterioration of the organic remains begins immediately and either part or all of those remains will be destroyed.

Excavation has now taken place at Oakbank Crannog over three seasons starting in 1980 (see plan). The first season was a period of five weeks when systematic stripping took place exposing an array of soft- and hardwood piles embedded in a matrix composed



mainly of bracken, fern, moss, twigs, leaves, seeds and excreta. This material extended to a depth of c. 0.60 m and probing suggested a total depth of c. 1.50-2.00 m.

The deposit was sampled at all levels and seeds of bramble, raspberry, wild cherry, hazelnut and flax, among other types, were discovered. Pollen analysis established a high herbaceous content with good evidence for cereal cultivation. Animal bones were very badly preserved except for teeth which were all bovine, although significant amounts of sheep or goat droppings were recovered from the site. Wood types included oak, wych elm, field elm, rowan, alder, hazel, Scots pine, ivy, dogrose, pear and apple. Artefacts included wooden pegs, points and stakes, a spindle-whorl, whistle and one stave of a small bucket. Stone hammers, pounders and whetstones and one piece of coarse pottery were also uncovered. Two piles were sampled for radiocarbon determination and dates were 460+ or - 60bc (GU 1325) and 595+ or - 55bc (GU 1323). On exposure most organic materials were very fresh and exhibited natural colours but after about 15 mins. they faded to a dark grey. The area excavated in the 1980 season is area B on the plan.

The 1981 season saw excavation in an area abutting the previous year's work. It was hoped that this would include the area of the hearth and the major part of the domestic interior of the dwelling. (Areas D and E).

Removal of the large boulders covering area D exposed, as in 1980, a layer of smaller fist-sized stones with occasional timbers showing through. On the north side in a band about 2 m wide the majority of the exposed timbers were vertical piles while the adjacent 2.5 m wide band to the south was composed mainly of horizontal timbers in a parallel array. These timbers appeared, superficially, to have been flattened on the upper surface. This proved to be evidence not of cut planks but of round logs abraded flat by the action of the water. Some small posts have the appearance of partition or wall uprights delimiting the area of horizontal timbers. The impression of a laid log floor with a wall along the side is unmistakable.

On the south side of the horizontal timbers the organic matrix appears to dip down underneath much larger boulders. It was expected that the laid floor and the organic matrix in which it is set would extend much further to the south and this abrupt change to boulders is an anomaly which will require further excavation. Finds in this area were sparse, a stone spindle-whorl and remains of two dung beetles being the only significant discoveries among the mass of organic debris and timbers! The upper floor timbers have been removed to expose a similar layer beneath. That layers of timbers were laid down to form the inner domestic base of the

site is not unusual and can be seen in the site plans of previous crannog excavations (Munro, 1882: pl. II; Piggott, 195: fig. 6, etc.). In this area the remains of a mortise joint could be seen in the end of one of the timbers.

It was decided to open area E, extending area D to the north, in order to throw some light on the peripheral limits of the site and how they were established. Organic debris—seeds, teeth and timbers—were noticed on the loch bed around the edge of the crannog. Area E was to establish whether this material extended from underneath the surrounding boulders or whether it had spilled over the top of them.

In area B, excavated in 1980, a band of stones c. 3m wide appeared to encircle the crannog and this was also evident in area E. These boulders appeared to be more systematically laid than those on top of the mound and there were substantial air spaces between them, although this is not surprising with stones this size. There was little apparent build-up of silt in the spaces between the boulders. On removal of the boulders it was found that they overlay a sloping deposit of organic material, piles and horizontal timbers. The organic material appeared to have collapsed out from the major part of the crannog structure, and interleaved layers from different phases blended to a fine coating on the sand of the loch bed at the outermost edge of the stones. Some of the timbers embedded in the organic matrix were substantial oaks and three of them were mortised at the end to accept tenons. Although no tenons were observed on the upper parts of vertical timbers this is not surprising since presumably most of them would have rotted or eroded away. The mortises were c. 0.10 m square and would have formed strong joints showing, in part, how the massive timber framework of the structure was linked together for corporate strength.

In some places the different layers were very distinctive, changing through extremely soft, fine, sawdust material to very hard, fibrous material which could only be disturbed with tools such as trowels. Normally hand-fanning was sufficient to move material. These differences are similar to those seen during excavation in the lower parts of layer 4, area B in 1980.

Some interesting finds were discovered in area E. A jet ring possibly from a necklace, a very small, finely perforated stone bead from a bracelet and a number of larger perforated stones which were probably net-weights. One stone looks like the centre of a broken rotary quern or it may be a worn-through pivot stone for a door or gate.

Organic finds from the area included a very finely cut wooden plate. The rim combines aesthetic quality and strength and the base is less than 0.5 cms thick. It is a nice piece of craftsmanship, considering it is carved and not turned. A larger, coarse dish with

sloping sides, triangular section and rectangular shape also came from this area but need not be contemporary. From the same locale as the finer plate came a canoe paddle c. 1.35 m long. On all of these finds, particularly the outer edge of the plate and the paddle, there is clear evidence of cutting with sharp tools.

Both the cut marks on wooden artefacts and finds of whetstones from various parts of the site show clearly that either bronze or iron tools must have been used on the site. Iron slag fragments from the 1980 excavation would suggest the use of that metal but unfortunately no tools of either bronze or iron have yet been found. During the 1981 season, results came through of two radiocarbon dates from two of the four stakes excavated in 1980. These stakes were driven into the organic matrix to a depth of only 0.10-0.20 m and were apparently some of the latest remains on the site. This view was upheld by dates of 410 + or - 60bc (GU 1463) and 455 + or - 60bc (GU 1464) and they tie in well with a date of 460 + or - 60bc (GU 1325) from a pile related to an extension on the crannog on the west side.

A month of work was completed on the site during June and July of 1982. The aim was to clarify some of the points and features observed in the two previous seasons, to establish a clear section through the organic deposit, to take a substantial sample from top to bottom of the deposit with a view to pollen analysis and to attempt to make some sense of the jumble of piles and beams observed in the past work.

In most of these aims the excavation was successful although it is still difficult to see how all of the timbers related to each other before collapse of the different phases. Distinct phases could be distinguished in some cases by the comparison of characteristic timber types or working techniques but the most promising results should come from site-specific dendrochronology to relate piles and beams.

One small problem arose with the finding of a finely-retouched, quartz, barbed and tanged arrowhead which would be more appropriate on an Early Bronze Age site. It may have been picked up by the inhabitants of the crannog and lost again on the site. It is not likely to have been accidentally redeposited as it was found in a clean organic layer not closely associated with other stones. The end of a flint knife or scraper was also found.

These finds must necessarily throw doubt on the earliest radiocarbon date being the earliest construction of the site. The timber it came from was a very large, solidly-set oak which would have been difficult to incorporate into the site after the initial construction but it may not be primary after all. The truth of the matter will have to await further excavation and more radiocarbon dates from archaeologically secure primary structural elements.

The excavation of Oakbank Crannog is by no means complete. The lowest habitation floor is still embedded in organic material and only some 20% of the site area has been opened to date. Continuing work will rely upon the problem of continuing finance but it is certain that a great deal of important archaeological information awaits excavation.

Interesting though the structural remains of the site are the true importance is in the information which can be added to the archaeological record of Late Bronze Age and Early Iron Age Scotland as a complete entity. After all if the house at Oakbank had not been built on an artificial platform in the water it would have resembled round timber houses common throughout Britain at that time. There is little reason to suppose that the basic social systems, technology and economy of the crannog dwellers differed significantly from that of other members of society at that time. The crannog seems to show evidence of people with clear and comprehensive woodworking skills but this picture is not unique to the inhabitants of these sites. The hundreds of cut timbers on the crannog and the thousands of wood chips, which came from those timbers, scattered across the site would equally be found in the excavated remains of any timber structure given equal conditions for preservation.

It is the state of preservation of the crannog material which can add so much to our knowledge of the economy and technology, and ultimately the social systems, of the late prehistoric peoples of Scotland. The many objects, common and specialist, which made up the domestic paraphernalia of a Late Bronze/Early Iron Age farming household are well preserved at Oakbank and other crannogs in Loch Tay and elsewhere and their potential for building up the detail and background of the archaeological record in this country is unique.

# How Much Does a Roman Urn?

*Alison Reid*

On the very first page of the Perth Literary & Antiquarian Society's Donation Book, in the year 1785, is an entry which reads:—

'Head of a Roman Warrior carved on a piece of bone, found among rubbish in the Castlegable, Perth. Donor Mr. Rutherford'. It is one of five entries for that year, three of which are ascribed to the Romans. The piece, still in the Museum's collections, is in fact late Medieval.

Many other artefacts and field monuments labelled as Roman by our antiquarian forebears have now been reclassified, but this is not to decry their achievement. Without the enthusiastic collecting and recording of objects and information throughout the late eighteenth and nineteenth centuries, current chronology and typologies could never have been established. Take for example, the so-called 'Roman urns', which are now often recognised as Cinerary Urns of the Bronze Age. Of over 140 known Bronze Age burial sites, including urns, and cists with beaker and food vessel pottery, the vast majority were recorded during destruction last century in society transactions, journals and newspapers.

Yet many of those records lie unrecognised and unused today. In the last year two Bronze Age cists have been discovered in Perthshire, and excavated in advance of destruction. In the past few months, careful reading of old newspapers has provided references to at least ten urns, and several likely cists, none of which were recorded in the current Sites & Monuments index. A similar story could be told for other groups of material. If the enthusiastic recording of nearly two hundred years is not to be wasted, any reference to archaeological material which you may come across should be added to the District Index here in Perth Museum & Art Gallery, where it can be checked and widely consulted. So if you do chance on any 'Roman urns' or other information, think how much archaeological interest has accrued since they were first recorded, and help to keep the returns high.

Extracts from the Perthshire Courier:—

Feb. 22nd 1827 Heriotstown ' . . . an urn containing brown earth and ashes (was found) . . . Perhaps the most rational conjecture is that it had been deposited by the Romans.'

Jan. 3rd 1828 Buchanty 'recently discovered four Roman Urns underground, two of a large and two of a smaller size . . . '

Jul. 16th 1829 Dunblane 'a place enclosed with rude, undressed flagstones containing bones and . . . two earthen vessels . . . One of these was of such an antique make, that some would take it to be of Roman manufacture.'

Aug. 5th 1847 St. Leonard's Bank 'Several stone coffins of Saxon workmanship have been come to . . . (&) a Roman road, many feet below the present surface.'

Nov. 11th 1847 Tulloch Hill 'Quern stones . . . were found about twelve feet from the surface . . . (& also) a number of large bricks . . . The Romans introduced the use of bricks into this quarter . . . but those found contain no marks'

June 22nd 1848 Sleepless Island 'A very good though incomplete specimen of the canoe was taken out of the bed of the Tay . . . About 30 years ago another was found below Newburgh . . .'

# Obituaries

## ALLAN W. ROBSON

Allan Robson was born and brought up in the Border country of Scotland. At school he showed his ability and interest in art and this took him to the Art College in Edinburgh. His studies were interrupted by War Service. On return to civil life he continued his studies in Art and Teaching. He was appointed Head of the Art Department of Perth High School, a position he held with distinction and respect from 1949. In his leisure time he was fascinated by the beauties of nature. To his abilities in art he added his study of plants and botany. His knowledge of Botany became extensive and included not only British wild flowers but also ferns, mosses, lichens, grasses and fungi.

In 1954 he joined the Perthshire Society of Natural Science. He soon became the leader of the Botanical section of the Society and remained so until his death. His knowledge of Botany and plants was recognised beyond the circle of the Society. He was made the area recorder for the Botanical Society of the British Isles. Much of his recordings on Botanical matters are recorded in the Botanical Atlas of the British Isles. He freely imparted his knowledge and enthusiasm to all who met him on botanical outings and was always ready to identify and classify specimens.

In 1961 Allan became a member of the Council of the Society and from 1966 until 1976 he was editor of the Transactions. His last contribution to the Transactions was in the 1980 volume when he presented an article on 'The Botanical Conservation Work at Rotmel Island'. This was an account of the work he did on the preservation of many valuable plants on Rotmel Island which would otherwise have been destroyed by the building of the new A9 road.

The death of Allan Robson in January 1981 after a period of ill health has been a great loss to the Society and to all who knew him.

## **IAN DONALD SUTHERLAND, M.D., F.R.C.S.**

The Society lost a valued friend and member on the death of Dr. Ian Sutherland in October 1983. Dr. Sutherland was born in India and studied medicine at Edinburgh University. When he retired in 1975 he was head of the orthopaedic department at Bridge of Earn Hospital. Dr. Sutherland was a long-standing member of the Society serving on the Council as a member, a Vice President and from 1979 until his death was editor of the Transactions and Proceedings of the Society. Indeed this present Journal was almost ready to go to press when Dr. Sutherland died.

The present Editorial Sub Committee gratefully acknowledge the tremendous amount of work and effort devoted to the Society's publications by Dr. Sutherland during his term as Editor.

## **DOUGLAS J. S. SUTHERLAND, M.A., B.Sc., Ph.D.**

The death of Dr. Sutherland in the latter part of 1983 removed one of the oldest members of the Society. He was Editor of the P.S.N.S. for a period of thirteen years, from before the War till 1950 when his appointment to the Rectorship of Pitlochry High School caused him to demit this office. He, however, maintained his membership of the Society and then, after his retiral from Pitlochry, when he came to live in Scone he again took a lively interest in Society affairs and attended many of the meetings.

As Editor, as in all his many pursuits, he was most methodical and conscientious. He had a very wide interest in all branches of Natural History and the Society was much in his debt for his hard work and enthusiasm.

# Changes

## KINNOULL HILL

This year, 1984, marks the 60th anniversary of the handing over of Kinnoull Hill by Lord Dewar to the citizens of Perth. There are many people who still remember the rather bare Hill as it was in the 1920s. Up to the time of the First World War Kinnoull was covered by forest but then the trees, largely oak, were felled. The denuded hill later became clothed with broom and in summer time the mass of golden yellow was a prominent feature of the Perth scene. After Lord Dewar had acquired the Hill a replanting of trees was undertaken. Gradually as these trees have grown the broom has almost disappeared, so now the appearance of Kinnoull has almost returned to what it was in the earlier years of the Century.

Many changes have occurred on the steep talus below the cliffs of Kinnoull Hill in the past fifty years.

Originally, the area was thickly clothed with a mixed woodland of soft and hardwood trees. This wood was clear felled in the 1930s and the ground lay bare of vegetation for the first time in living memory.

Immediately there was an explosion of plant life to colonise the slopes and some plants which had been considered rare in the district multiplied enormously.

One such plant was the acrid lettuce (*Lactuca virosa*); others were Viper's bugloss (*Echium Vulgare*), Mullein (*Verbascum thapsus*), Agrimony (*Agrimonia eupatoria*), Marjoram (*Origanum vulgare*) and Mignonette (*Reseda Lutea*).

The slopes were eventually replanted with a mixture of Beech, Larch and Pine, but a natural regeneration of Sycamore grew so strongly that a great deal of the planted trees were smothered.

Now once more the slope is covered by thick woodland and the lower carpet of wild flowers has disappeared.

## THE TAY

A gradual but significant change has taken place during this century in the appearance of the Tay in Perth. The Stanners Islands between Perth Bridge and Queen's Bridge have increased in size and the trees which early photographs show as little more than bushes are now full grown. Above the Old Bridge the island of shingle has continued to extend upstream and now has a considerable vegetation cover. The control of the flow of the river by the building of the hydro-electric dams has doubtless contributed largely to the growth of the shingle bed. It should be interesting to see how much further growth will be apparent in the future.

## ROADSIDE GEOLOGY

The extensive roadworks in Perthshire in recent years have revealed many previously hidden geological features. Before a detailed study of 'new road geology' is made some of these newly exposed features obvious to even the most cursory view may be mentioned. Deep cuttings, for example those on the A9 North of Dunkeld, have revealed a wealth of variations of fluvio-glacial deposits though many of the exposed slopes have been quickly covered by vegetation, either natural or planted by man. The spread of this vegetation is in itself a matter of great interest to the natural historian.

Two recently exposed geological features in the immediate neighbourhood of Perth are worthy of notice. Near the summit of the by-pass at Callerfountain a rock surface polished by glaciation is clearly visible at the roadside and to the West of Perth on the Glasgow Road beyond Windyedge the fresh rock cutting through the igneous dyke there shows in dramatic form the effect of this igneous intrusion on the sedimentary rocks on each side.

One feels that this new exploration into the skin of the earth may lead to a renewed interest in geology as did the railway building in the first half of last century.

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