Silage cutting in Tankerness

AGRICULTURE remains Orkney's main production industry as it has been for the last 6,000 or more years, although Tourism now vies with it in terms of income to the community. Today most of the 1,000 or so farms are family-owned.

Beef Cattle The production of prime beef cattle is the main activity. There are over 100,000 cattle in Orkney, and about 30,000 are exported annually, mostly as stores, *stots*, for fattening nearer the markets.

The traditional small black cattle have been replaced by larger breeds such as Aberdeen Angus, Hereford and Shorthorn, and Continental bulls such as Charolais and Simmental have become popular. The crossing with the more traditional cows, produces larger, leaner, faster-growing calves. Many meat-lovers consider that the special flavour and quality of Orkney beef to a large extent depends on retaining at least some of the old-fashioned genes, so that Aberdeen Angus is again very much in favour.

The Supreme Champion at the Annual County Show 2009

Although most animals are still shipped south for fattening some are now finished and processed by Orkney Meat at its modern abattoir. This prime Orkney Beef is then sold in supermarkets in the south, being much prized for its quality and the traditional farming methods used in rearing the cattle.

Dairying Dairy farming, which developed during World War II to supply the large numbers of servicemen based in the islands, is less important, but Orkney Cheese makes excellent Orkney Cheddar. The fully matured varieties of this cheese are particularly good, frequently winning prizes at national shows.

The islands are self-sufficient in milk and many areas have a daily household delivery of fresh milk. Several farmers' wives make excellent farmhouse cheese, which is on sale in local shops. Regulations have threatened the continued production of this cheese, but hopefully the tradition will survive. Some also make farm butter, and the buttermilk is an essential ingredient for the best bere bannocks.

Sheep are much less important than cattle, so very little moorland is heavily grazed, thus leaving more habitat for breeding birds. The most common breed is Cheviot, and most are grazed on good land. Many of the smaller islands and holms still support flocks of native sheep which probably resemble the original stock brought by the first settlers. Recently other breeds, such as Texel, have become popular and often command the best prices at the mart.

The climate is also good for growing potatoes, and the free sandy soils in some areas are particularly well-suited to this crop. Disease-free seed potatoes have at times been an important export, being much valued by growers in the South as reliably virus-free.

Crops The main crop in Orkney is, however grass and silage has largely replaced hay for winter keep. The long hours of daylight in summer compensate for the relatively low temperatures, while the regular but moderate rainfall also helps growth. The introduction of drainage and fertilisers in the 19th century as well as new breeds of grasses and clovers caused a revolution in Orkney farming.

Changes in land tenure, and in particular the 1886 Crofters Act did much to lay the basis for the huge increase in owner occupation after WWI. This has continued until the present day, when the vast majority of agricultural land is owner-occupied.

The production of eggs was for long a big business in Orkney. Even by the 1880s over 1 million eggs were produced annually, rising to over 50 million by 1950. A combination of more efficient production further south, and the devastation wrought by the hurricane of 1952, caused the sudden collapse of this industry in Orkney.

Princess Anne opens the new Orkney Cheese factory

Sowing of New Zealand wild white clover, started in the 1920s, has immensely improved the grassland at very low cost. New strains and types of grasses have enabled previously useless land to be productive. Salt and exposure-resistance are important traits in Orkney where strong salt-laden winds are so common. It is highly likely that further revolutions will occur in Orkney agriculture in the future and that it will keep its place as our main production industry.

Today's large and successful farming industry started with the transport revolution of the 1830s. Prior to the arrival of the steamship only relatively small numbers of cattle were exported from Orkney to Caithness by small vessels. Dealers travelled to the islands, and cattle were shipped over the Pentland Firth in yawls and then driven south along the drove roads. The coming of regular, reliable transport to the markets in Aberdeen and Leith was a large factor in the rapid development of agriculture during the 19th century in Orkney. Transport by sea remains a contentious issue to this day.

"Spoil from the Sea" at William Jolly's, Kirkwall

FISHING Archaeologists studying the midden debris left behind by Neolithic farmers, Iron Age broch people, Picts and Vikings find that in addition to farming they all did a lot of fishing. Boats which were good enough to cross the Pentland Firth would have been eminently suitable for fishing too. Thus the idea that an Orkneyman is a farmer with a boat, whilst the Shetlander is a fisherman with a croft was probably as true 6,000 years ago as today.

The meeting place of the Atlantic Ocean and the North Sea, where the North Atlantic Drift warms the waters, the strong tides and relatively shallow seas all combine to provide a very good environment for fish. Eastern Scottish, English and Dutch fishermen have fished the waters since medieval times at least and so, on a smaller scale, have Orcadians. In the time of the Norse Earldom fishing was already an important source of revenue.

With the help of Orkney Islands Council oil money, the local fishing fleet has grown. Westray remains the main centre of Orkney s white fishing fleet, the Whalsay of Orkney! This is the only island from where much *haaf* fishing was done. *Haf* in ON means sea, and the *haf* involved fishing well offshore in small boats using long lines, using methods and fishing marks developed thousands of years ago. Other islands with a fishing tradition include Stronsay, Burray, South Ronaldsay and Hoy, though the Herring fishery was for a time important to these islands, especially Stronsay.

The clean cool waters, and shallow depths, combined with suitable grounds make Orkney very good for shellfish too. Lobsters, Partans, Velvet and Green Crabs are fished and exported mostly to Europe. Divers collect Scallops in winter, and recently shellfish farming has been developed, with farmed Oysters, Mussels and Queen Scallops all being available.

Fish farming, so far of salmon, has grown rapidly and has created new employment. Future developments in this area will hopefully include various species of white fish, stocks of which have become depleted in the sea. Recent controversy has raged between the fish farmers and the Crown Estate Commissioners about rent for the seabed. This was not a commercial activity when the Udal Laws were ratified in 1567, but many Orcadians still feel that Udal Law applies to the seabed as well as the land.

Baby Lobster at hatchery

Partan, Spoots and Lobsters

While most whitefish catches are landed in northeast Scotland, some are processed locally. Combined with the large locally-landed catch of crustaceans and molluscs, this means that there is always a good selection of fresh seafood available in local shops, hotels and restaurants. Fish processing is an increasingly important industry with smoked Salmon and other species, marinated Herring in several flavours, seafood dressings and cooked crabmeat and other products all being prepared, mostly for export.

Spoil from the Deep by Tom Kent

Chef Alan Craigie at work in the Creel

Deep-fried Orkney cheese

Pierowall Hotel fish and chips

The diversity and quality of food produced in Orkney is reflected in the range of establishments which serve it. These range from award-winning restaurants to take-aways - there is something for every occasion and taste. Most chefs use seasonal local produce as much as possible, so availability does vary with the time of year.

Starters Apart from soups, favourite starters include deep-fried Orkney farmhouse cheese, Queen Scallops, Partan in the shell or in a souffle, various locally-made pates and preserved meats, smoked Salmon or Sea Trout and pickled Herring. Prawns, Spoots, Cockles or other shellfish are sometimes on the menu.

Main Courses Prime Orkney beef and lamb are much recommended, especially Aberdeen Angus steaks and spring lamb. North Ronaldsay mutton is well worth trying for its special flavour. Wild duck, Scottish venison and locally-cured ham are also sometimes available, but little poultry is locally reared.

A selection of prime Orkney produce from land and sea

Queen Scallops

Dressed Partan

Crab mousse

Orkney Prawns

Scallops - Lynnfield

Scallops - Smiddy

Deserts Apart from "Cloutie Dumpling" there are no really Orkney specialities, apart from Orkney Ice Cream, which is available in many delicious flavours, and is made from fresh cream. Favourites such as sticky toffee pudding, various tarts, chocolate desserts, seasonal fruits and house specials complete the list.

Cheese Dish Nothing completes a fine meal better than a slice or two of Orkney cheese with Bere bannock or Oatcakes and preferably fresh farmhouse butter. Orkney Cheddar is delicious in the fully matured form, while traditional Orkney farmhouse cheese is a fresh, milder product and is made by several farmer's wives.

Drinks A glass of Highland Park malt whisky, preferably the 18 year-old version, is the perfect finish to your meal. The Orkney Brewery produces a range of ales, and the Orkney Wine Company makes a variety of wines from fruits, offering a choice of locally-produced accompaniments to your meal.

Prime Orkney fillet steak

Fillet Steak with Haggis

North Ronaldsay lamb

Crantit Dairy ice cream

Sticky toffee pudding

Bere bannock and Orkney cheese

Straw-backed Orkney chairs are a traditional design

ARTS & CRAFTS Orkney has for long been attractive to artists, and a today large variety of quality goods are available, some traditional, others modern. Products may take their inspiration from the past, the local landscape with its changing light, nature or a combination of these aspects of Orkney. Artists of all kinds seem to find Orkney an inspiring place to work.

An "Applepot" in the making

Traditional crafts The Orkney straw-backed chair, which is unique to the Northern Isles, is produced by several craftsmen and chairs can be ordered for delivery later. The backs are made from oat straw, while the frames are now made of hardwood. The design results from the shortage of wood in Orkney. Many other uses were found for oat-straw, including ropes (simmons) and baskets (cubbies or caisies). The straw-backed chairs would have been very practical in draughty houses!

Knitwear remains an important activity, with the many knitters producing thousands garments a year, mostly for export. Both traditional and modern designs are produced, and are on sale shops throughout the islands. The range is great, so it should be easy to find the right jumper.

Jewellery The silver and gold designs of Ola Gorie, many of which originally derived from Norse or Pictish inspiration, were the first to be made commercially in Orkney, in 1960. Other major jewellery makers include, Ortak, at Hatston with a visitor centre, Aurora in St Ola and Shelia Fleet in Tankerness, which also welcomes visitors.

There are a number of other jewellery workshops, all making their own, distinctive, but equally inspired, collections of jewellery.

A variety of other businesses produce crafts including pottery, wood-carving, textiles, tapestries, felted wool, cured sheep-skins, leatherwork, and other items which can be seen in local shops. Many of the firms also welcome visitors.

Orkney Crafts Association produces a brochure which describes in detail the products of its members and leads

Hand crafted jewellery

Back reel spinning wheel in use

the visitor on an interesting Trail around the Mainland and over the Barriers. Other businesses not included in this guide advertise locally.

Books Although not a craft as such, more books are published per head of population in Orkney than in most places. Whether the interest is archaeology, history, literature, traditions, folklore or finding out what there is to see and do, there will be a book for you. Local books are on sale in many shops and visitor attractions.

Many shops all over Orkney stock local crafts with prices and a range to suit every taste.

Although Kirkwall has the biggest range of stores, there are interesting little shops and workshops all over the Mainland, North and South Isles. The visitor should have no problem finding that special gift.

Exhibitions and Galleries The most prestigious art gallery is the Pier Arts Centre in Stromness with its impressive permanent collection and regular exhibitions. Other venues include Orkney Museum, in Kirkwall, the Waterfront Gallery in Stromness and the Workshop in St Margaret's Hope.

ORKNEY CRAFTS SHOPS & WORKSHOPS

KNITWEAR

Orcadian Crafts, Kirkwall
Judith Glue, Kirkwall

JEWELLERY

Ola Gorie, Kirkwall
Aurora, St Ola
Ortak, Kirkwall
Fluke Jewellery, Birsay
Peter Rowland, Orphir
Stewart Moar Jewellery, Stenness
Celina Rupp, Holm
Orkneyinga Silversmiths, Birsay
Sheila Fleet, Tankerness

WOODWORK & POTTERY

Belgarth Bodrums, Stromness
Fursbreck Pottery, Harray
David Holmes Ceramics, Shapinsay
Scapa Crafts, Kirkwall
Orkney Furniture, Kirkwall

TEXTILES

Tait & Style, Stromness
Hume Sweet Hume, Westray
The Workshop, St Mgt's Hope
Quernstone, Stromness
The Woolshed, Evie

ART & PHOTOGRAPHY

Hoxa Tapestry Gallery, S Ron
Britt Harcus, Kirkwall
Northlight, Stromness
Shorelines Gallery, Finstown
Pam Farmer, Sandwick
Wheeling Steen, Westray

Ola Gorie at work

Leila Thomson at work

Sunset over Highland Park Distillery

Highland Park Distillery (HY448107), the most northerly distillery in Scotland was founded in 1798, on the site where Mansie Eunson, is said to have carried out his illicit distilling. He was a United Presbyterian Church Officer, but by repute was the greatest and most accomplished smuggler in Orkney. Very adept at evading the excisemen, he kept some of his stock in the pulpit.

Mansie Eunson The story goes that Mansie, hearing that the Excisemen were going to search the kirk, removed all his casks to a room in his house, and covered them with a coffin lid and a white cloth. The family including the maidservants gathered together around the whisky, Mansie at the head with the big Bible, and the others with hymnbooks. When the Excisemen arrived a wail for the dead went up, and a whispered *"smallpox!"* sent them off rapidly.

Mansie Eunson apparently chose the site on account of the water supply which comes from "Kattie Maggie's" in a small walled field called High Park, and not for the excellent panoramic view over Scapa Flow, Wideford Hill and Kirkwall Bay. He is said to have distilled his illicit whisky in a bothy in the field.

He loved to outwit the excisemen, who on one occasion got wind that he was expecting a shipment to arrive somewhere in Holm one evening. Mansie was stopped on his way to Kirkwall with several casks of brandy aboard. Delighted with their success the excisemen walked back with their culprit, who was leading his horse and cart and at the same time dispensing fine spirits to his captors. Much to their dismay, on arrival at Kirkwall the casks had gone, spirited away by unseen hands whilst the officers were enjoying their tipple.

A legal distillery In 1825 the distillery "went legal", when the oldest parts were built by a John Borwick on property

Highland Park is sold as 12, 18 and 25 year-old

Cutting the peats at Hobbister Hill

Steeping the Barley

Laying the Barley on the malting floor after steeping

The malted Barley must be turned several times per day

Loading the kiln with the malted barley

Drying the malted Barley over the peat-fired kiln

Stoking the kiln fire with peat and coke

Milling the dried malt

belonging to the exciseman who had hounded Magnus Eunson, John Robertson. Borwick and then his son were managers until 1869, when James Borwick, a minister of the United Presbyterian Church for a time inherited it (Whether there was any connection with Magnus Eunson is not known).

The malt is mashed to extract the sugars

The mash is fermented in large wash backs

Despite computers the stillman remains crucial

The clear spirit can be seen in the spirit safe

The Grant family of Elgin, who later did so much for archaeology in Orkney, first became associated with the distillery in 1888. They finally sold the company to the, Highland Distilleries Co, in 1936. It is now part of the Edrington Group.

Malting Locally-grown Bere Barley was used for many years to produce the malt, but nowadays modern strains which have more starch and less protein and thus yield much more malt are used. The distillery is unusual in that it still produces about 20% of its own malt, which is dried over a peat fire in the distinctive Pagoda-shaped kilns. The peat is harvested from Hobbister in Orphir.

One of the secrets was said to be the inclusion of faggots of flowering heather in the fire, which imparted an exclusive and delicate flavour. It is no secret however that the combination of excellent water quality, careful distilling, and long ageing in oak sherry casks result in a very fine malt whisky.

Over 40,000 casks lie quietly maturing

They need to be checked now and then

The stillroom with its four large copper stills

Products Highland Park produces a unique island malt whisky. In addition to being sold worldwide as a single malt of various ages, much of the production is used for blending, especially in the Famous Grouse brand, which is one of the most popular blended whiskies where the splendid quality of the malt forms the foundation. Some casks are also bottled after longer maturation and are occasionally available.

Visitor Centre The distillery has an Brand Heritage Visitor Centre, where a dramatic audiovisual show gives a very good introduction to Orkney and the making of Highland Park. Guided tours of the distillery including the Maltings, Peat Kilns, Tun Room, Stillhouse and Warehouse plus a free dram to taste the amber nectar, are available all year. In winter tours must be booked in advance. Tel (01856) 874619, Admission charge.

The "amber nectar"

ORIGINS OF WHISKY

The Ancient Egyptians used distillation to make perfume, but it was not until the 11th century that stills which could condense alcohol were devised. *Uisge Beata* may originally have been produced in monasteries, but by the 16th century improvements in the shape of stills and cooling of the output resulted in a quality product which could be produced in volume.

The first Scottish Excise Act of 1644 was really by Charles I to raise cash to fund the Royalist Army. At this time the stills were quite small with a capacity of perhaps 25 gallons. The 1713 Malt Tax Act had the effect of reducing the production of ale, which had been the staple drink possibly since Neolithic times. At the same time there was an increase in demand for the more easily hidden brandy or whisky.

Bad harvests in the 1750s led to a shortage of barley and the closure of many commercial distilleries, but at this time home distillation was perfectly legal for home use, but not of course for sale. The result was the growth of illicit stills to meet the demand, which in turn led to severe controls on home distillation. By 1777 the loss of revenue meant a complete ban was enforced.

Demand for the high quality illicit Highland malt whisky continued to be strong, and only with the Excise Act of 1823 were legal restrictions on the commercial production lifted by the imposition of a tax of £10 per gallon of spirit.

Burray Wind Turbine

WIND POWER has a long history, with windmills being in use in Persia in 200BC. By the 11th century they were being used to grind corn and pump water in western Europe. Probably the first to generate electricity was built in 1887 by James Blyth a Scottish electrical engineer.

Prior to this several farmers installed windmills to grind their oats. Stumps can still be seen in several places, including on Sanday, North Ronaldsay and South Ronaldsay. Small American-style wind-driven water pumps were also very popular before the advent of mains water.

Wind turbines were extensively used for water pumping in UK, USA, Denmark and elsewhere by 1900. The USA led the development of these machines and they proved very popular in remote areas not yet connected to the electricity grid. Russia was an early developer of more powerful machines in the 1930s.

Offshore Wind Turbines at the Beatrice Oilfield

Costa Head was selected as the site for the first UK experimental UK wind turbine. This was built by John Brown & Co of Glasgow and installed in 1951. Although the lattice mast blew down this prototype showed the possibilities of wind power. By the early 1980s the possibilities of using wind power had been well demonstrated by the Danish.

Burgar Hill was the site of the first experimental wind turbines in Orkney since 1951. In 1983 the Wind Energy Group installed a 2-bladed 250MW machine and Howdens a 300MW 3-bladed prototype. The latter company then went on to sell a large installation in California which suffered from repeated gearbox and blade failures.

The WEG next built the largest such machine yet in 1985. It was completed in 1987 and generated 3MW. It too had serious gearbox problems and blade cracking. It did however run successfully until it was demolished in 2000. Meanwhile companies such as Vestas and Siemens developed smaller machines , which have been scaled up.

In recent years further experimental wind turbines have

Burgar Hill Wind Turbines

been installed at Burgar Hill, Wind. At present the largest there is a 2.75MW Micon machine. Another Evie site, Hammars Hill now has 5 0.9MW turbines and there are now others on Westray, Sanday, Stronsay, Burray, Flotta and in Birsay.

While Orkney has plenty of wind, there have been issues regarding the installation of windfarms. The scattered nature of habitations, various conservation designations, whether for natural, scenic or heritage reasons have all combined to make large scale developments unlikely here.

Community owned projects have already successfully installed wind turbines on Westray, Flotta, Burray and elsewhere. Limited developments as at Hammars Hill and Burgar Hill in Evie may well be repeated elsewhere.

Offshore wind turbines have been installed in the North Sea and elsewhere, including 2 at the Beatrice Oilfield off Caithness. They still have serious reliability problems and need more sheltered waters than those around Orkney.

Wind Energy Group prototype 3MW in 1987

Howden 300kW and WEG 250kW prototypes in 1983

Oyster is being developed by Aquamarine Power

MARINE ENERGY Orkney's location facing the open Atlantic Ocean off the northern tip of Britain means that there is a substantial wave and tidal energy resource. If exploited this could generate large quantities of electricity. With this in mind the European Marine Energy Centre (EMEC) was set up in Stromness in 2003.

The idea is to encourage companies which are developing devices to extract energy from the marine environment to do so in Orkney. A whole new infrastructure of services, suppliers and facilities is springing up as a result, including major new harbour developments at Lyness and Kirkwall.

EMEC is the first such facility to be set up anywhere in the world. It offers infrastructure which prototype and pre-production machines can be plugged into and tested whilst connected to the electricity grid and under realistic wave and tidal environments.

Waves are dependent on weather systems, the Jetstreams, water depth and exposure and thus highly variable. Tides on the other hand, are highly predictable but very much more powerful.

Pelamis Wave Power machine deployed at Billia Cru

Wave Power EMEC has a wave test facility at Billia Croo, west of Stromness. This has 4 test berths at 50m and a further inshore site. All are connected to the grid. Waverider buoys report the wave heights in the area. A full range of services is available to developers.

Various types of devices have been considered to derive energy from the waves. All must be able to stand up to the harsh marine environment as well as the high energy of storm waves, which routinely reach 10m off the west coast of the Mainland.

Oyster uses wave energy to pump high pressure water ashore to drive a turbine and hence generate electricity. The first machine produced 315kW and operated successfully for two winters. Oyster 2 will have a capacity of 800kW per unit and it is planned to install three with a planned 20 year life span.

Pelamis is a wave energy convertor which uses articulated, cylindrical sections to extract kinetic energy via hydraulic rams which resist the motion. High pressure motors drive onboard generators and the electricity is fed ashore via single cable. Each 180m long unit produces 750kW, but obviously the annual output will depend on the exposure of the site and the weather.

Tidal Power The vast kinetic energy bound up in the strong tides around Orkney is obvious to anyone who goes to sea. The Pentland Firth, as well as the Westray and Stronsay Firths are main tideways, with spring rates of 10 knots or more in places. Tidal energy has the advantage of predictability, but the downside of these Firths being a very challenging environment.

EMEC has a tide test facility in the Fall of Warness between the southwest of Eday and the Muckle Green Holm. Flow rates vary between 3 and 8 knots here, but the site is very exposed to the southeast and northwest, when substantial swells can sweep through.

Prototype machines can be plugged into services on the seabed and electricity produced exported to the grid. A number of devices have been tested here already, with more to come.

For these new forms of generation to be a success an efficient and cost effective means of carryng the power to demand in the south needs to be developed. At present high voltage DC underwater cables looks like the best option, but will be very expensive to install. Thus the immediate outlook in Orkney is all about the crucial development stages of these new technologies, which will hopefully spin off Tidal Generation into future business and jobs.

Atlantis Resources AK1000 machine on Hatston Pier

Tidal Generation Ltd machine on Hatston Pier

Survey vessel at work off Hoy