Appendix 1

Copy of map delineating the geographical area that is West of the Corrib Basin, and represents an area in the West of Ireland known as Connemara, with a landscape characterised by mountain bog and lakes.

Geographical [illegible]

"Connemara Hill Lamb"


Roonagh Quay
Emlagh Point
Inishturk
Caher Island
Croaghpatrick
Killadoon
Kinnadoohy
Tonakeera Point
Crump Island
Rinvyle Point
Rinvyle Castle
Cashla
Tully Cross
Clifden / An Clochan
The Twelve Pins
Ballinaboy
Ballyconneely
Ballyconneely Bay
Ennistimmon
Derryveeny
Recess / Srath Salach
Lough Currael
Gowla
Derrinrush
Killaraw
Killinaskully
Cashel Bay
Letterfrack
Letterfrack Island
Lettermore
Lettermore Island
Gorumna Island
Golam Head
Carna
Carraroe / An Cheathrú Rua
Rossaveel
Spiddal / An Spidéal
Inverin / Indreabhán
Ballynahown
Castleloe / Casla
Lough Corrib
Oughterard / Uachtar Ard
Derrygimlagh
Letterfore
Killarone
Rosscahill
Headford / Áth Cinn
Ballynahe
Shrule
Tobernadarry
Neale
Kilmaine
Ballinrobe / Baile an Róba
Cong / Conga
Cross
Caher
Roundfort
Castlemagarrett
Holymount
Scardaun
Crossboyne
Carrowmore
Ballygarries
Curry
Comaragh
Carrowreagan
Cloghet
Ballyglass
Ballyhean
Belcarra
Ballina
Derrywony
Mayo Plains of Mayo
Westport / Cathair na Mart
Aghagower
Killeavally
Lecarney
Cordarragh
Bohaun
Carrowkennedy
Croaghnmbeg
Owenglen Bridge
Doo Lough
Sheeffry Hills
Delphi
Ben Gorm
Maumtrasna
Glennagreelagh
Derrylahan
Lough Nafooey
Drinaghan
Maumeen
Teach Dorai
Derrymeena
Gortnagarna
Inishmaine Island
Inishcarraig
Inishgoill
Illaunmore
Illaunbeg
Lough Mask
Lough Corrib
Maumturk Mountains
Twelve Bens / Beanna Boirche
Connemara
Inishbofin
Inishshark
Croaghnakeela Island
St. Macdara's Island
Mweenish Island
Rock Island
Brannock Islands
Dún Aonghasa
Inishmore / Inis Mór
Inishmaan / Inis Meáin
Inisheer / Inis Oírr
Gregory's Sound
Foul Sound
Kilronan / Cill Rónáin
Ferdurris Point
Aran Islands
North Sound
South Sound
GALWAY BAY
Black Head
Fanore
Doolin
Lisdoonvarna
Corkscrew Hill
Gleninagh Castle
Ballyvaughan
Kinvara
Dunguaire Castle
Oranmore
GALWAY / GAILLIMH
Barna / Bearna
Moycullen / Maigh Cuilinn
Spiddal
Furbo
Roundstone
Ballyconneely
Clifden
Ballinakill Harbour
Cashla Bay
Streamstown
Moyrus
Lough Bofin
Lough Inagh
Lough Fee
Kylemore Abbey
Derryclare Lough
Lough Nabrackbeg
Lough Shindilla
Lough Formoyle
Lough Ugga Beg
Lough Ugga More
Lough Bofinna
Lough Aughrusbeg
Lough Aughrusmore
Lough Derryclare
Lough Nahasleam
Lough Muck
Lough Nacorrib
Lough Nagarriff
Lough Nageeragh
Lough Nahillion
Lough Nagreenaun
Lough Nagreenan
Lough Nagreenan Beg
Lough Nagreenan More
Lough Nagreenan Mor

Appendix 2

Map of Ireland

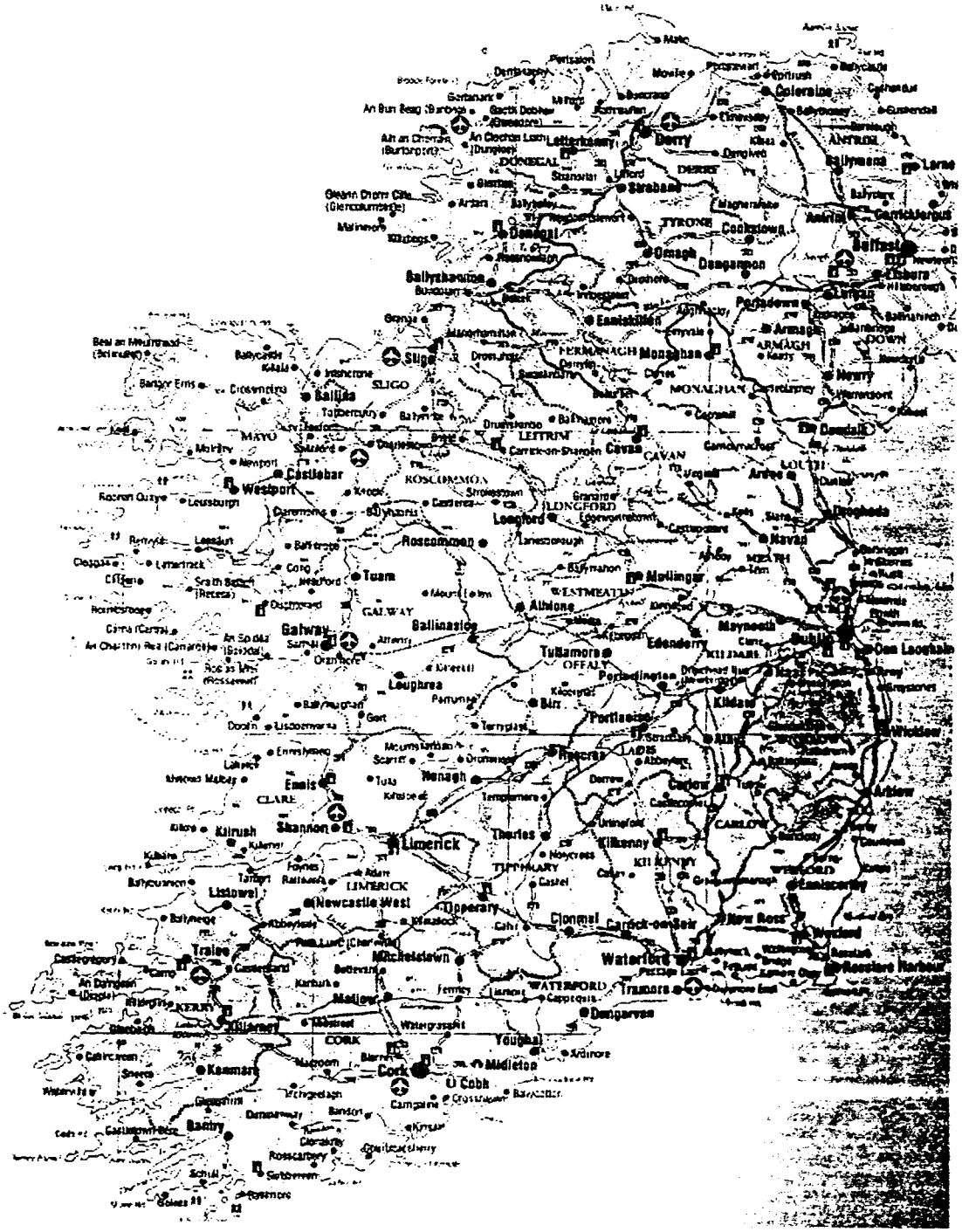
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Map of Ireland

[Mileage Chart of Ireland] [Larger Version of map]



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Appendix 3

Evidence of Company Registration of 'Connemara Hill Lamb Limited' **from the Companies Registration Office, Dublin**

Enquiry Seperator Page

17 NOV 2003 03:10

Com/Bus Printout

Enquiry Group: 876910 **Enquiry Number:** 2 **Cost:** 3.50

Requested: 17-NOV-03 00:00:00

Customer Ref: TOM...

Company: 302757 C COMHAR CHUMANN UAIN SLEIBHE CHONAMARA TEORANTA

Document:	Description	Pages:

Company Printout

Company	302757 COMHAR CHUMANN UAIN SLEIBHE CHONAMARA TEORANTA
Previous Name(s)	Connemara Hill Lamb Limited
Registered Office	C.D.S. Teoranta Corna Mona Galway
Type	Guarantee Company Without A Share Capital
Date Incorporated	03/03/1999
Last Annual Return	
Next Annual Return Date	03/09/2002
Bond Expiry Date	
Designation	Strike Off Listed
Date of Designation	03/10/2003
Last Shareholder List Date	

There are no charges lodged in respect of the Above Named Company.
Number of Charges **0**

Directors Special Note Please note that the information displayed on this printout as to the particulars of the directors and secretary of this company may not be complete or up to date, as there may be unregistered documents which affect the position. Please refer to the list of Documents below, and if necessary, consult the company file or images for full, up-to-date particulars as to the company's officers. If this printout is blank as to officer details, please consult the images of the registered New Company documents.

Anne Kerrigan Glentrague Cloughbrack Claremorris Co Galway	Director And Secretary
Eamonn Mylotte Carna Co. Galway	Director
Martin Kinneavy Dooras Cornamona Co Galway	Director
Joe Rafferty Yellow House Roundstone Connemara Co Galway	Director
Martin Gavin Bundorragh Leenane Co Galway	Director
Tom Halloran Glentrague Cloughbrack Via Claremorris Co Galway	Director

Kevin Kerrigan Glentrague Cloughbrack Via Claremorris Co Galway		Director
Michael Laffey Mounterown, Maam, County Galway.		Director
Paddy Rock Clonbur Co Galway		Director

Company Secretary

Documents

Status	Scans	Number	Submission	Date Effective	Date Received/ Registered
REG	*	2229793	NEW COMPANY WITHOUT CAPITAL DUTY		24/02/1999
REG	*	2300910	CHANGE IN DIRECTOR OR SECRETARY	04/03/1999	17/05/1999
REG	*	2361983	REGISTRATION OF CHANGE OF NAME	12/08/1999	24/08/1999

* *Indicates documents have been scanned for the submission*

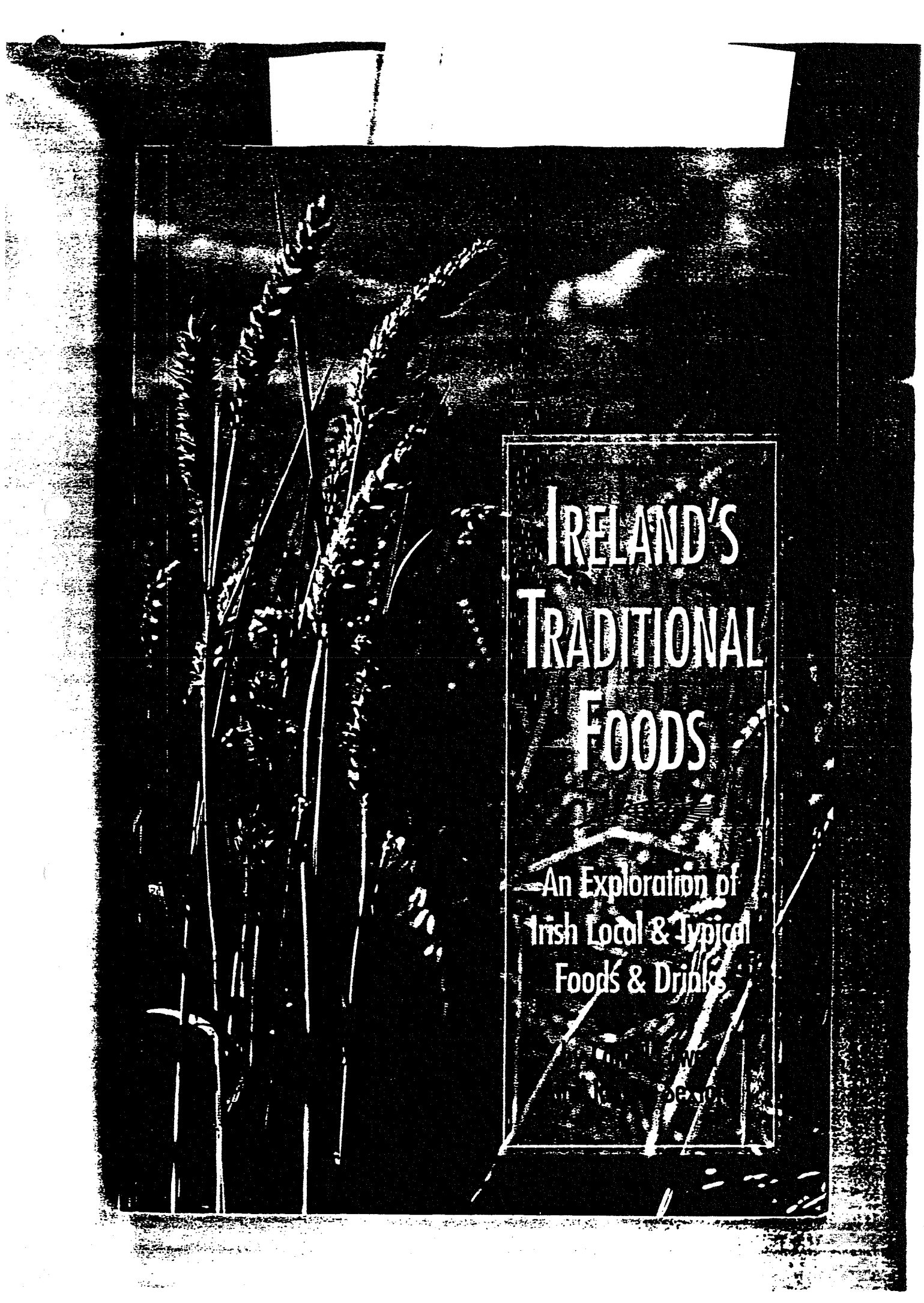
Submission Status Explanations

CERTP *CERTIFICATE PRINTED*
CERTS *CERTIFICATE SCANNED*
DATA *DATA RECORDED*
REC *RECEIVED*
REG *REGISTERED*
RETAM *RETURNED AMENDED*
SCAN *SCANNED*

End of Particulars

Appendix 4

Published Material on Irelands Traditional Foods including the Special features, Composition, History, Use, Technique, Producers, Packaging and Reference of Connemara Lamb **from The National Food Centre**


IRELAND'S
TRADITIONAL
FOODS
An Exploration of
Irish Local & Typical
Foods & Drinks

Ireland's Traditional Foods

An exploration of Irish local and typical foods and drinks

Prepared for GEIE/Euroterroirs
by
Cathal Cowan & Regina Sexton

Published by Teagasc,
The National Food Centre

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Connemara Lamb

Also Other local mountain lamb

Special features: Lamb has long been produced in Ireland and today large quantities are exported. Connemara mountain lamb is descended from a Scottish breed and has a stronger flavour due to its mountain habitat and its diet of mountain heathers and grasses. Traditional methods of cutting and preparing Irish lamb, including Connemara lamb, are different from those of other countries.

Composition: The carcasses are smaller than other lambs, weighing about 10 kg compared to 25 kg for lowland lambs. Connemara lamb is very close to being an organic food and has a darker colour and strong flavour. The meat is also leaner.

History: Lamb has a long history in Ireland. From earliest times until the twentieth century sheep were kept predominantly for their milk and wool and therefore appeared on the table only as old and tough mutton. Lamb was, therefore, a rare treat and was not a commonplace feature in the Irish diet until well into the twentieth century.

The consumption of dressed wethers is mentioned in the seventh- and eighth century Brehon Laws, while a 'full fleshed wether' appears among a list of luxury foodstuffs in the eleventh-century tale *Aislinge meic Conglinne*:

> *And he called for juicy old bacon, and tender corned-beef and full fleshed wether.*

The prevalence of mutton as opposed to lamb continued in Ireland, as is clear in a number of nineteenth-century sources. Amhlaoibh Uí Shúileabháin, for example, regularly partook of mutton in the early nineteenth century. In his diary entry for 5 October 1828 he is presented with a leg of mutton for dinner at the parish priest's house.

Outside rural areas mutton seems to have been a common item for sale at city and town markets. In Lieutenant Joseph Archer's *Statistical Survey of the County of Dublin*, mutton was on sale at Dublin Market on 7 April 1801 for 10d per pound along with other goods such as cereals, potatoes, fish, veal and beef.

In James Joyce's *Ulysses* (1922) there is also a reference to a 'tanner lunch' of

> *boiled mutton, carrots and turnips, bottle of Allsop.*

In general, therefore, lamb was eaten only in the aftermath of a culling of young male lambs, which were economically useless in terms of milk production; or when an animal died or was injured through misadventure. Such an occurrence is described in Mary Carbery's *The Farm by Lough Gur*, which details rural life in nineteenth-century Co. Limerick:

> *'The craythur! fallin' from the rocks the way it did to break its neck, and it neither a lamb nor a sheep.'*
>
> *'With mint sauce, it is lamb' I said firmly. 'Make a good fire and have it on the spit in plenty of time.'*

The exception to this lamb-eating pattern occurs in the case of Connemara lamb, consumption of which dates to the mid nineteenth century. Initially some Scottish-bred stock were brought in by landlords. Their main characteristic was their ability to forage better than other breeds. They were hardy and agile and could climb to the top of mountains. Over 150 years they have evolved into a distinctive strain, and have been adapted and selected to suit the rugged conditions of Connemara. They are different to hill sheep in other parts of Ireland, such as Kerry. They are a lighter breed and smaller in body weight.

Use: Connemara lamb is regarded as a quality product and is served as such in restaurants. In general lamb is used for grilling, roasting and stews (see the section on technique).

Technique: Connemara lambs live on mountain grass, heathers and herbs and are usually not dipped. Traditionally they stay out all year, but in recent years some producers have housed them for part of the year. The rams are let out on 20 November and the lambs are born around mid-April at a time when the growth of herbs and grasses on the hills is vigorous. They come on the home market in August and the 15th of August is the traditional day for the first sale of Connemara lambs. There is no difference in the slaughter and preparation of Connemara lamb from that of any other lamb. The traditional method of cutting, rarely used today is described below. The carcass weight is about 10 kg, much lighter than other breeds of sheep.

Connemara and other lamb carcasses in Ireland are cut into two sides. Each side has three main parts—fore end, full loin and leg. The fore end is the piece forward from the fourth or fifth rib, in-

cluding the neck. There are three main parts to the fore end—neck, back gigot and shoulder. The neck can be boned out and is sold in pieces or as a piece for stew. The gigot is cut into chops for stewing; the shoulder is usually sold as a piece for roasting or boiling. The shank bone is taken out in a roasting piece. Sometimes the whole forequarter can be cut into chops.

The full loin is from the fourth or fifth rib to the leg bone. It is cut into two pieces—the top end with ribs is called the fair end and the rest is the loin. The fair end may be cut into cutlets or disjointed and sold as joints to hotels or restaurants for roasting (like a rack). The loin is usually cut into side loin (wide end nearer the leg) and centre loin chops (narrower and nearer ribs). The remaining piece of the centre part is the lap, which can be boned out or stuffed or sliced into strips for stew. The leg can be cut into fillet (top end) and shank or sold whole. All pieces are for roasting.

In the case of Connemara lamb, because it is much smaller than lowland lambs, the full carcass is sometimes divided into just four quarters.

Producers: The mountain lambs are not born as early as hill and lowland lambs. They are born in April, whereas other lambs may be born from Christmas onwards. Connemara lamb is available from about August to November, and is sold at butchers' shops. Some younger Connemara lambs are slaughtered at 10–11 weeks for export to Portugal and Italy, where markets require a whiter meat.

Packaging: Much Connemara lamb is sold to butchers for selling on to hotels and restaurants. At butchers' shops it is sold loose packed for each customer or in prepacks.

Reference: David Callinan, Teagasc, Galway, personal communication.

Useful addresses: Sean Loughnane, Butcher, Foster Court, Galway. Tel 091-564437. Teagasc, Galway Offices. Tel 091-62101.

From Central Asia To Connemara

The sheep has been in Ireland for at least 2,000 years. MICHAEL A. O'TOOLE, M. Agr. Sc., of the Leenane Cultural Centre traces the origins and development of this earliest of domesticated animals – and the Connemara Blackface's Central Asian ancestry.

Sheep were among the first animals to be domesticated by man. This probably happened about 10,000 years ago. Sheep bones have been found in Neolithic sites in the Middle East. Wild sheep were originally fairly well dispersed throughout Asia. Four sub-species were recorded namely, Mouflon, Urial, Argali and Big Horn. Sheep, as we now know them, are descended from these, sometimes with cross-breeding between the sub-species.

The early sheep tended to be either brown or black in colour and could be polled, two-horned or polycerate (having more than two horns). Their fleece consisted of a soft, woolly, undercoat with coarse kemps, or hairs, on the outside. This fleece was moulted or shed annually. Following domestication and selection towards more economic characteristics the woolly undercoat was developed at the expense of the hairy outer-coat, there was a decrease in the tendency to moult and the wool became whiter. White wool was more valuable, as it was suitable for dyeing. The original traits of a double fleece and moulting are still to be found in the Soay sheep of the St. Kilda Islands of Scotland.

Sheep gradually spread from Asia into Africa and Europe. A primitive light-boned sheep may have accompanied the first settlers to Ireland. This early presence of sheep in Ireland is poorly documented, as regular references to the subject did not begin to appear in the literature until early in the last century. However, evidence from excavated skeletons and from textiles has established the presence of sheep in Ireland for at least 2,000 years. Skeletal remains dug from New Stone Age settlements indicated that

small, primitive sheep with slender bones, were farmed at that time (Schariff, 1922). The mature bone-size suggests an animal comparable to the Soay of St. Kilda in Scotland (Ryder, 1969). Blyth (1864) referred to the presence in raths and crannogs of two races of sheep, one of which was polycerate. This evidence of multi-horned sheep is found all along the west coast of Europe, the best surviving example being the four-horned Loaghton breed, native to the Isle of Man. Ryder (1964, 1967) examined fibres of clothing from a body found in a bog near Newbridge, County Kildare, and pollen-dated to the early centuries A.D. The wool was first thought to be a true hairy-type, comparable to the Herdwick or Scottish Blackface, but some of the Soay sheep on St. Kilda were later found to have comparable coarse, hairy wool. Giraldus Cambrensis visited Ireland in the year 1183 (O'Meara, 1951) and described how the people wore black woollen garments, because the sheep were black. The growth of black or brown wool, which darkens with age, is well recorded for many primitive breeds of sheep.

About two hundred years ago several new breeds of sheep emerged in Britain, and these were brought to Ireland for crossing with the native sheep. From this the Galway breed of East Galway and Roscommon developed, but many of the native breeds became extinct. Agricola (1806) referred to the 'Cottagh' sheep of Wicklow, and Youatt (1894) thought that these sheep had established themselves from 'time immemorial'. Apparently the sheep were small with a smooth, white or badger-faced, head and the fleece very hairy about the haunches and tail. The wool tended to become brown or black, as the sheep aged. In Connemara these native sheep were called Cladore (*Cladóir* = of the shore) probably because of their tendency to frequent the shore, eating seaweed. However, this tendency to eat seaweed was not confined to the Cladore, as Blackface sheep round Killary Harbour graze seaweed to supplement their sparse diet in winter and spring. Unfortunately the Cladore is now extinct as a breed, but some of its characteristics can still be seen in some South Connemara sheep.

Visitors to Connemara are fascinated by the sight of local sheep lying on the main roads, heedless of traffic – their eyes shining like 'cats' eyes' in the headlights at night, as they rest by the roadside. These are Scottish Blackface-type sheep, whose ancestors were imported from Scotland from the middle of the last century onwards. Scottish Blackface sheep are believed to have evolved from the Argali of Central Asia, which migrated across Central Europe. They were first recorded along the coast of Northern England and may have been introduced by the Danes. Their rapid spread in



A Fair Day in Leenane, 1903. (From the Synge Collection)

Scotland did not take place until the latter half of the eighteenth century. By that time they were also established in Northern Ireland. In the immediate post-famine years British landlords imported large numbers of Blackface sheep to West Mayo and Connemara. Captain Houstoun, who farmed some 100,000 acres north of Killary Harbour, made large importations from Scotland and at one shearing he 'marked 23,000 sheep in his domain' (Houstoun, 1878). The Congested Districts Board, established in 1891, and later the Irish Department of Agriculture, made further importations of rams to 'improve' the breed. I am in agreement with many farmers, who claim that these rams had the opposite effect.

Without doubt some of the present sheep carry Cladore genes and are now a distinct West of Ireland Blackface found only in Connemara, in West Mayo and in the Ox Mountains in Sligo. They differ from their Scottish counterparts in having lighter body-weight and bone; the head is smaller, with the Roman nose absent; the horns grow wider from the head and the wool is poorer in quality and quantity. Their main attribute is, that they are probably the hardiest sheep in Europe, adapted to survive under conditions of severe diet restrictions.

There is now a crisis in hill sheep-farming in Connemara. Normally a hill sheep lives in harmony with its environment, moving with the wind for



McKeown's Weavers, Leenane. (Photograph courtesy National Library)

shelter and taking advantage of seasonal growth of plant species to obtain food. The number of ewes in Connemara has almost doubled in the past fifteen years; this over-stocking is in some areas resulting in the elimination of plant-communities essential to maintaining the year-round food balance. The effects are progressive. As stocking increases, fewer animals are produced and the end results are large patches of bare ground, erosion, depletion of reserves and starvation. This problem must be tackled, as the onus is on us to preserve our hill-land resources for future generations. The local Blackface, which has evolved over 10,000 years between Central Asia and Connemara, is part of our heritage: it must be protected.

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BY MICHEAL O'FOCLA LEENANE CENTRAL CO-OP

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ROYAL DUBLIN SOCIETY

Founded in 1731 for the Promotion of Agriculture, Industry, Science and Art

HISTORY, DISTRIBUTION AND STOCKING INTENSITIES OF HILL SHEEP IN IRELAND

M.A. O'TOOLE

(Received March 1st 1984)

Abstract

The early history of sheep in Ireland is reviewed. Native hill sheep were replaced during the nineteenth century by imported Cheviot and Scottish Blackface breeds and are now almost extinct. Sheep numbers during the past 100 years fluctuated widely due mainly to economic factors and they now total approximately 3.5 m. State subsidisation led to a 32% increase in hill ewe numbers during the seventies and these now comprise 60% of total ewe numbers. Geological, edaphic and botanical factors have a large influence on hill sheep stocking densities and distribution. *Nardus-Agrostis* vegetation on peaty podzol and brown podzolic soils, *Calluna-Molinia-Nardus* on skeletal peats and peaty gleys and *Molinia-Eriophorum* on deep peat can carry 1.7, 0.8 and 0.4 sheep/ha respectively. These are predicted maximum stocking rates and further intensification is possible only with increased fertiliser usage on foothills.

Historical

The early history of sheep in Ireland is poorly documented as regular references to the subject did not begin to appear in the literature until rly in the last century. However, evidence from cavated skeletons and from textiles has established the presence of sheep for at least 2000 ars. Skeletal remains dug from New Stone e settlements indicated that small primitive ep with slender bones were farmed at that e (Scharff 1922). The mature bone size gests an animal comparable to the Soay of Kilda in Scotland (Ryder 1969). Blyth (1864) erred to the presence in raths and crannogs two types of sheep, one of which was polyate. This evidence of multi-horned sheep is nd all along the west coast of Europe, with best surviving example being the fourned Loaghton breed native to the Isle of . Ryder (1964, 1967) examined fibres of hing from a body found in a bog, pollen d to the early centuries A.D., near Newbridge, County Kildare. The wool was first thought to be a true hairy type comparable to the Herdwick or Scottish Blackface, but some of the Soay sheep on St Kilda were later found to have comparable coarse hairy wool. Giraldus Cambrensis visited Ireland in the year 1183 (O'Meara 1951) and described how the people wore black woollen garments because the sheep were black. The growth of black or brown wool which darkens with age is well recorded for many primitive breeds of sheep.

Native hill sheep

References to Irish sheep in nineteenth century literature generally mention two types – longwoolled and shortwoolled (Scharff 1922). The longwools were kept on the lowlands, having derived from crossing native sheep with imported stock, while the shortwools were more primitive native breeds. Agricola (1806) referred to Wicklow mountain sheep as the Cottagh breed ('catach', curly or matted). Youatt (1894)

thought that these sheep had established themselves 'from time immemorial'. Apparently these early nineteenth century sheep were small with a smooth white head and a coarse or wavy fleece which was remarkably hairy about the haunches and tail. The wool tended to become black or brown as the sheep aged. Somewhat similar sheep were farmed in Kerry and in the west of Ireland at that time (Low 1845). In Connemara the sheep were referred to as the Cladore ('cladoir', of the shore) probably because of their tendency to frequent the shore eating seaweed. This eating of seaweed is not however a specific breed characteristic as the present day Scottish Blackface sheep can be observed grazing seaweed on the shores of Killary Harbour all year round. The native Connemara sheep have not fully disappeared. Noddle and Ryder (1974) after examining a skin found in the Aran Islands concluded that it came from a primitive short-tailed sheep representing the domestic sheep of an earlier period. It appeared to be comparable with the 'medieval' Orkney and Shetland breeds rather than the 'prehistoric' Soay.

Imported sheep

The Cheviot breed

In Wicklow, the native Cottagh sheep have not persisted owing to a continuing crossbreeding policy. The Cheviot sheep predominating there now have arisen from importations of both North Country and South Country Cheviots from Scotland and the north of England. Importation of rams is still continuing and Cheviot type sheep are generally consolidating their position among other breeds in the Country (see Table 1).

The Scottish Blackface

Scottish Blackface type sheep now predominate in hill regions in the west and south of Ireland. They outnumber all other breeds of sheep in the Country (see Table 1). Blackface sheep were to be found in northern England as early as the fifteenth century but their rapid spread in Scotland did not take place until the latter half of the eighteenth century. By that time the breed was also established in northern Ireland. It did not reach the west of Ireland until the middle of the last century and it then came through direct importations from Scotland. Importations were made into the south of Ireland at about the same time. During the immediate post-famine years (1850/1870) most of the hill land was owned by Scottish and English landlords who imported Blackface sheep. Captain Houstoun farmed approximately 40,000 ha of hill land in west Mayo from 1850 onwards and he imported large numbers of Blackface sheep. At one shearing 'he marked 23,000 sheep in his domain' (Houstoun 1879). The Congested Districts Board, established in 1891, made further importations. Indeed, importations of Scottish Blackface sheep continue to the present day, the Irish version of the 'Scottish Horny' being adjudged to be somewhat inferior to that from Scotland.

Table 1. Ewe breeds as percentage of total, 1960-1980. (Source: Central Statistics Office)

	Year				
Breed	1960	1965	1970	1975	1980
Cheviot	14.1	16.8	19.1	19.3	21.1
Blackface	24.9	25.2	28.4	33.5	37.4
Galway	42.4	34.3	34.2	28.9	23.0
Others	18.6	23.7	18.3	18.3	18.5

Table 2. Total sheep numbers (millions) in Ireland, 1861-1983. (Source: Central Statistics Office)

Year	Number (m)	Year	Number (m)
1861	1.4	1964	2.2
1871	1.6	1966	2.1
1881	1.2	1975	1.7
1891	1.7	1980	1.5
1921	1.3	1981	1.6
1931	1.5	1982	1.6
1951	1.1	1983	1.7

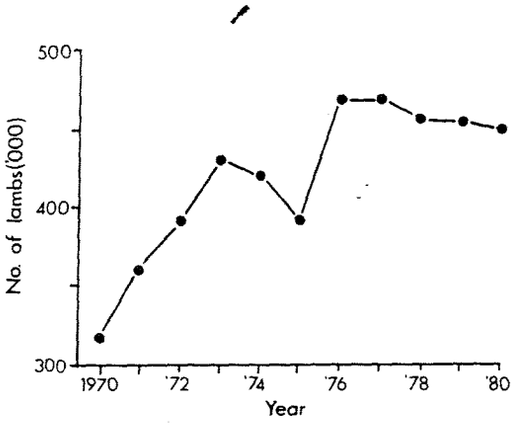


Fig. 1. Numbers of lambs for subsidy 1970-1980.

Sheep numbers in Ireland, 1861-1983

Total sheep numbers

The trends in total ewe numbers, hill and lowland combined, in the 26 southern counties of Ireland from 1861-1983 are shown in Table 2. The regular fluctuations downwards and upwards during that period are probably due to economic factors. Ewe numbers are not available for 1851 but total sheep numbers (including lambs, wethers and rams) for that year were only half the 1871 figure or an estimated 0.8m ewes. This rapid increase was obviously affected by direct importations from Britain already referred to (Houstoun 1879). Numbers subsequently declined but recovered to reach the highest peak for the last century in 1891 when 7m ewes were recorded. From then onwards there was a gradual decline to 1.3m in 1921, some recovery to 1.5m in 1931 and a further rise up to 1.1m in 1951. There was a rapid increase in numbers during the following decade and 2m ewes in 1964 was the highest number ever recorded. Sheep were obviously not the most profitable farm enterprise in the succeeding years as the number of ewes had dropped back to 1.5m in 1980. In very recent years the outlook for sheep relative to beef and dairying has improved and numbers are again increasing.

Hill sheep numbers

Hill sheep numbers are not as well documented as total sheep numbers and any information available relates to the hill breeds, Blackface and Cheviot, rather than sheep farmed on the hills. Some Blackface and Cheviot type sheep are also reared on the lowlands. Unfortunately the quinquennial census of the Central Statistics Office did not publish numbers for the various breeds until 1960. The contribution of different breeds to total ewe numbers 1960-1980 is shown in Table 1. In 1980 the hill breeds, Cheviot and Blackface, comprised 21% and 37% of the total respectively. The number of ewes reared on the hills is now approximately 0.8m or half of the total ewe population. State subsidisation led to substantial increases in hill ewe numbers during the 1970s. From 1970 to 1980 the numbers of hill lambs presented for subsidy increased by 32% (see Fig. 1). During the same period there was a decrease in the numbers of wethers kept on the hills. The Blackface Mountain breed has come a long way from its introduction into Ireland about the middle of the last century to its position of being the most numerous breed.

Hill sheep distribution

Pattern of distribution

The hill sheep distribution pattern calculated from the 1980 Mountain Lamb subsidy returns is shown in Fig. 2. There are four main areas of production – Cheviot sheep in Wicklow and Blackface in Donegal, Mayo/Galway and Kerry/Cork. These are associated with areas of rough grazing suitable only for hill sheep production. However, there are relatively large tracts of low lying peat in the centre of the Country which are not stocked with sheep.

Effects of management systems

Stocking densities vary greatly and are influenced by several factors. In many areas, under existing systems of management, stock numbers are limited to what can be carried during the winter months. Some hill farms have very little lowland suitable for fodder conservation but the situation could be greatly improved with land development. Further constraints on sheep output are imposed by the traditional system of giving all conserved feed to cattle.

Sheep in the west of Ireland hills are practically all Scottish Blackface type and they are

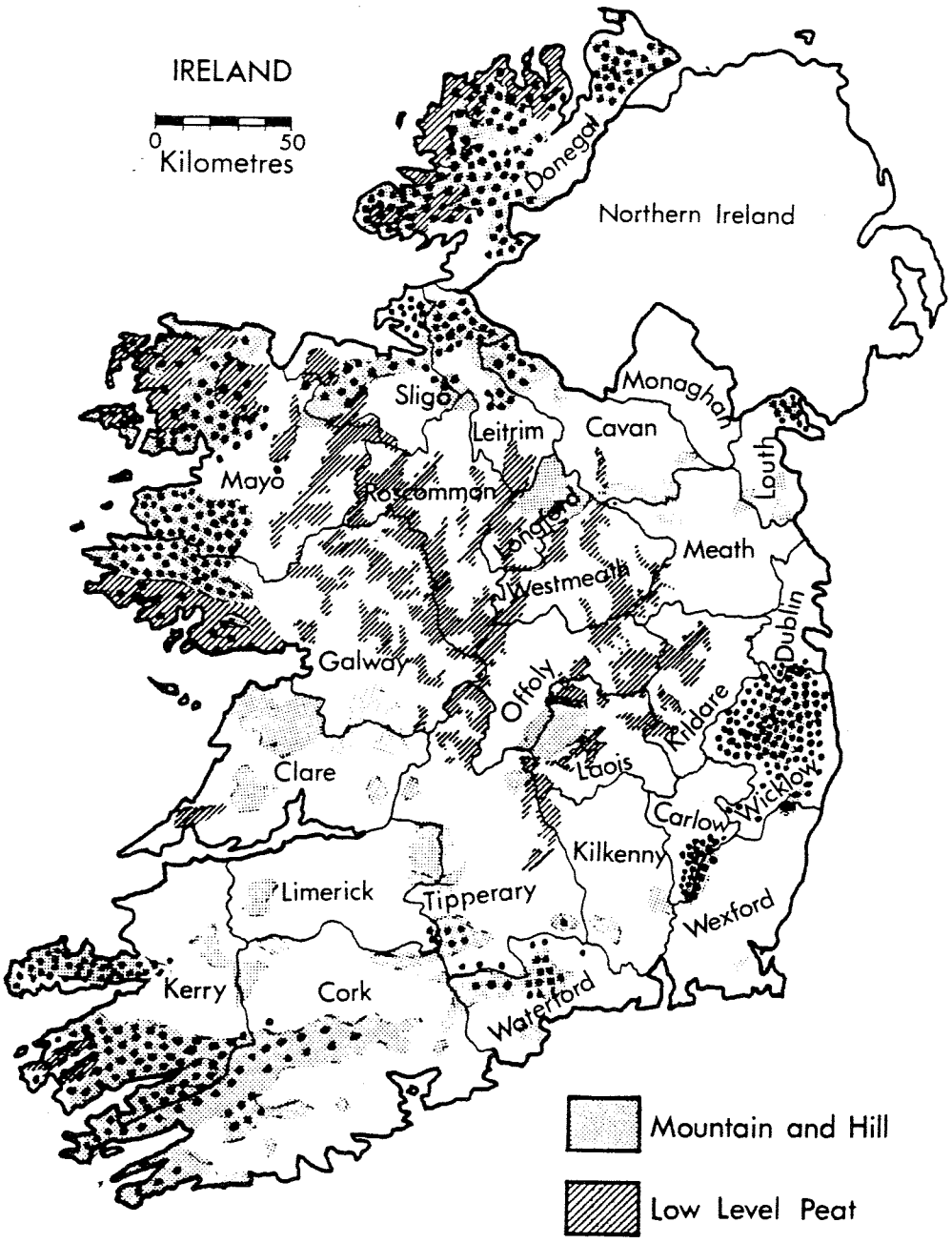
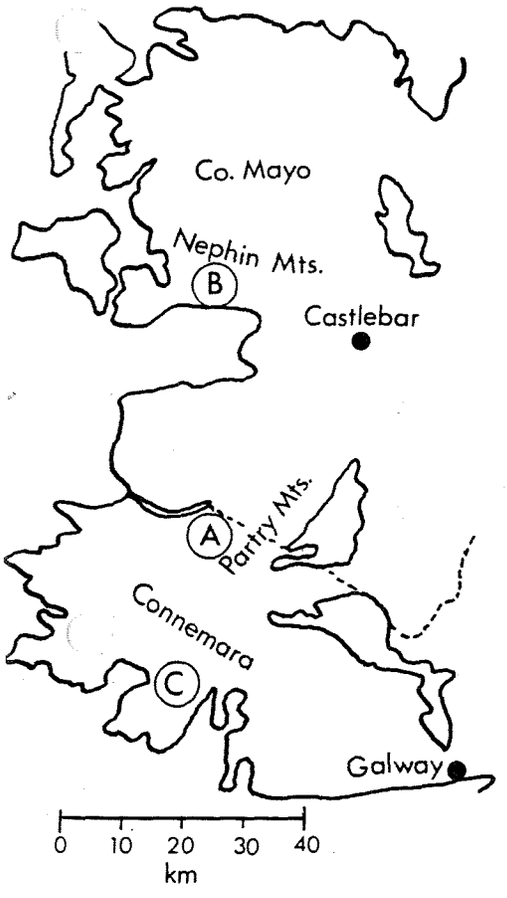


Fig. 2. Distribution of hill sheep in Ireland (each dot represents 1000 lambs presented for subsidy under the Disadvantaged Areas Headage Payments Scheme).

Table 3. Sheep stocking densities on different hill soil and vegetation types.

Site	Geology	Soils	Vegetation	Stocking rate (sheep/ha)
A	Sandstone	Brown Podzolics Peaty podzols	*Agrostis tenuis* *Nardus stricta*	1.7
B	Quartzite	Shallow peat Skeletal peat	*Calluna vulgaris* *Molinia caerulea*	0.8
C	Granite	Deep peat	*Molinia caerulea* *Eriophorum angustifolium*	0.4



g. 3. Map of West Mayo and West Galway (Connemara) showing location of study areas.

confined almost exclusively to rough grazing under extensive systems of management. Without the lowland dimension to contend with it was possible to study the effects of other factors on stocking rates.

Study of stocking densities

Three areas were specially selected for studying the effects of geological, edaphic and botanical factors on stocking intensities of hill sheep. Each area was 500 ha in extent and the sheep were kept all year round on the hill without access to supplementary feed or lowland pasture. All three areas were common grazings and each had a southerly aspect. The total number of sheep in each area was counted in autumn 1980.

The locations of the study areas are shown in Fig. 3 and the effects of geology, soils and vegetation on stocking rate in Table 3.

The highest number of 1.7 sheep (excluding lambs)/ha was found on Site A which comprised 'dry green' slopes at 200-500 m altitude. Annual rainfall for the area is 2400 mm. The underlying rocks are Ordivician and Silurian sandstone, schist and gneiss. Soils are mainly peaty podzols and brown podzolics and these support rough grazing vegetation dominated by *Nardus stricta* and *Agrostis tenuis*.

At Site B, again at 200-500 m altitude and with an annual rainfall of about 1800 mm, shallow and skeletal peats and peaty gleys have

formed on metamorphic quartzitic sands. The dominant vegetation is *Calluna vulgaris*, *Molinia caerulea* and *Nardus stricta* and this carried 0.8 sheep/ha.

The lowest stocking rate of 0.4 sheep/ha was found at Site C on deep wet peat overlying impermeable granite at 200 m altitude. Rainfall for the area is relatively low at 1400 mm/annum. The bog vegetation is sparse and dominated by *Molinia caerulea* and *Eriophorum angustifolium*.

Conclusion

Over a relatively short period of less than 150 years Irish native hill breeds in the west and south of Ireland have been replaced by the Scottish Blackface which is now the dominant sheep breed. During the same period the native hill sheep in Wicklow have been replaced by the Cheviot breed. Stocking densities are related to the geological, edaphic and botanical conditions prevailing in the hills. The number of sheep per unit area is high, as Cunningham *et al.* (1971) reported that on the poorer hill grazings in Scotland sheep were stocked at a rate of 0.25 ewes/ha. High sheep densities are likely to be maintained on Irish hills as there is no alternative enterprise suited to this environment.

Further developments are possible with fencing, land development and increased fertiliser usage on foothills to provide extra grazing at critical periods of the year. Many of the lambs presently being produced are too light to suit market requirements due to inadequate nutrition of the ewe in late pregnancy and early lactation. The integration of hill and lowland comes when the improved pasture is used to provide grass in early lactation, forage for winter feed and grass again at weaning of lambs and pre-mating flushing of ewes (O'Toole 1980).

Both the Scottish Blackface and Cheviot hill breeds are recognised for their prolifacacy, good mothering and milking ability. When crossed with a suitable sire, such as the Border Leicester, they produce an ideal crossbred ewe for lowland sheep production. However, this crossing should take place on surplus ewes only, with efforts also being made to improve the parent stocks. With this better organisation hill breeds could play a far greater role in our national sheep industry as they do in Britain in the system of sheep breed stratification.

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Appendix 5

Evidence on the constituents of the diet of hill sheep in Connemara

from Duchas Heritage Service

Dúchas The Heritage Service

Páirceanna Náisiúnta &
An Fiadhúlra

Páirc Náisiúnta Chonamara
Leitir Fraic
Co. na Gaillimhe
Éire

National Parks &
Wildlife

Connemara National Park
Letterfrack
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Mr. Joe Rafferty.
Yellow House.
Roundstone.
Connemara.

10/1/2000.

Joe,

Further to your enquiry as to the diet of hill sheep in Connemara.
The main constituents are the grasses *Agrostis Spp. Festuca Spp.* and *Molinia*, the sedges, *Carex Spp, Scirpus cespitosus, Eriophorum angustifolium* and *Trichophurum cespitosum*. Other important plants in the diet are the heathers *Calluna vulgaris, Erica tetralix* and *Erica cinerea*. Other plants eaten are *Narthecium ossifragum* and *Potentilla erecta*.

Regards

Noel Kirby.

Species List

Agrostis Spp	Bent grass
Festuca Spp	Fescues
Molinia	Purple moorgrass
Carex Spp	Sedges
Scirpus cespitosus	Deer grass
Eriophorus angustifolium	Cotton grass
Trichophurum cespitosum	Deer grass
Calluna vulgaris	Ling heather
Erica tetralix	Cross-leaved heather
Erica cinerea	Bell heather
Narthecium ossifragum	Bog asphodel
Potentilla erecta	Tormentil

Noel Kirby
22 08 03.

Appendix 6

Published articles on Connemara Hill Lamb and its uses

circumvent the system by endeavouring to engage in all facets of business operations.

Connemara Hill Lamb

- The history of the Connemara Hill Lamb dates from the 1800's when the 'Black face' stock were introduced from Scotland, a breed with an innate character of adapting to rugged hilly terrain.

- In the 1980's there were 16,000 cattle and 40,000 ewes in Connemara. The increases in E.U. subsidies favouring sheep in the early 90's impacted greatly on the population reflecting a reduction to 8,000 cattle and an increase to 80,000 ewes.

- The Connemara Lamb is noted for its excellent taste and flavour which is imbued from a diet of herbs, heathers and grasses.

- On the negative side, the 'kill-out' or yield is much lower than its low-land equivalent. The range of animal in weight size coming to the market also varies greatly and can range from:

	%	Weight
Big	25	Over 12 kgs
Little	50	10kgs to 12kgs
Small	25	Under 10 kgs

- The average size of ewe in the flock has contributed to the above. The average gross weight of 30kg yields a 13kg carcass (a 42.5% kill out). Based on Flock Size and projections within the defined Connemara region the maximum potential capacity available to the market is 21,000 lambs

Consumer research

- Lamb is losing out to other proteins like chicken, beef and fish. This is because it is perceived as expensive and poor value for money. It also suffers from lack of versatility and convenience.

- On the positive side, it does outperform all other fresh meats when it comes to taste and general flavour. Consumers would like to consume more lamb if they could afford it.

- In the context of Commenara Hill Lamb, consumers are positive on the concept when explained to them, lack an understanding about product attributes i.e. why the lamb is better tasting, and have a high level of interest in trial.

- In product placement trials, the product performed excellently on taste and texture but is very weak on fat levels. This raises a question in consumer minds on whether they are prepared to pay a premium price for the product.

- We have however identified that there is a significant gap between the promise and the physical delivery generally in the quality of the product on offer. This is not in regard to taste or texture but rather in the meat to bone, meat to fat ratio compared to low-land. One can also include product 'shrinkage' in the cooking process as a perceived negative.

- These shortcomings restrict the mainstream market opportunity available to Connemara Hill Lamb, it is not going to compete side by side with the low land equivalent. The majority of consumers shop with their eyes and quantity will rule even where there is price party between competing lamb products.

Parcels of Lamb

Ingredients

1 1/2 lbs Loin of Lamb
1 Red Pepper sliced
1 Yellow Pepper sliced
8 slices of Cucumber
Crispy Salad leaves
6 Pitta Bread (grilled or toasted)

Mix the following together for Marinade:

1 oz. Ginger Garlic crushed
1 oz. Chilli puree
1 teaspoon Soy Sauce

Method

Coat the lamb with marinade and leave for 4 hours. Cut the lamb into thin slices and cook in a hot pan for four minutes with the peppers. Toss the leaves in olive oil and lemon juice. Layer the pitta bread with lettuce leaves, lamb, cucumber and peppers and serve with a light mayonnaise.

Beurre Rouge Sauce

Ingredients

4 oz. cold unsalted butter, cut small.
3 tbsp. red wine vinegar
5 tbsp. dry red wine
1 tbsp. of cream
1 tbsp. chopped shallot
Salt and pepper
1 tsp. tomato puree

Method

Reduce vinegar, red wine & shallot to 2 tbsp. Add cream and tomato puree, just boil and turn heat down low while the butter is whisked in and incorporate gradually. Keep warm in water bath or serve immediately.

Connemara Hill Lamb

Recipe

Parsley & Herb Crust Roasted Loin of Hill Lamb with black pudding and Apricot stuffing, served with a creamy mint sauce, garlic rosemary jus.

Ingredients

5 lbs. Loin of Lamb (boned and skinned)
6 oz. Breadcrumbs
2 oz. chopped dried Apricots
1 stick of Celery diced
4 oz. chopped Blackpudding
8 teaspoons chopped Parsley
1 teasp. chopped thyme, sage, rosemary, mint.
Salt and pepper
4 oz. Butter
2 oz. diced Shallots
2 beaten Egg Whites
2 turned Carrots, Parsnips, Turnip & Potato.

Method

1. Trim loin of lamb of any excess fat. Mix 6 teaspoons of parsley with 4 oz. of breadcrumbs. Season lamb with salt, dip in egg white and coat with the parsley and breadcrumbs mix. Seal both sides of lamb in a hot pan, place in a medium oven and roast for 10 minutes with the vegetables.
2. Stuffing: Sauté onion and celery in butter. Add pudding, apricots and herbs, cook for 3 minutes. Add breadcrumbs and mix well. Keep warm.
3. Creamy Mint Sauce: Sauté mint and onion over a gentle heat. Add cream, bring to the boil, remove from heat. Whisk in the butter. Season.
4. Garlic & Rosemary: Sauté shallots and garlic, add port and reduce. Add demi-glaze rosemary. Simmer for 5 minutes. Strain and keep warm.
5. **Assemble: Place a ring of stuffing in the middle of the plate. Slice the lamb and place on top. Pour the mint sauce on one half of the plate and the garlic and rosemary on the other half. Garnish with a sprig of fresh mint and the turned vegetable.**

uain sléibhe chonamara

CONNEMARA

HILL LAMB

IT'S NATURAL

Corr na Móna, Connemara.
Tel: (092) 48031. Fax: (092) 48348

From the mists of time the ancestors of the now familiar Connemara Hill Lamb have graced the hills and foothills of our breath-taking region.

Connemara Hill Lamb Ltd. have now joined with natures offering in providing you with a superb selection of our famous lamb.

These lambs mature at a slower rate gaining the benefits of their natural habitat. Raised on the grasses and heathers of this unique region, the result is a lamb of specialised taste, quality and flavour.

We now offer you a real taste off our Connemara Hills.

A Taste of Connemara



Connemara Hill Lamb is coming into season. Their lambs take a little longer to reach their peak, but its worth the wait. Raised high on the misty hills of North West Connemara these lambs feed on the natural grasses and heathers unique to the region. The result is lamb with an amazingly sweet taste and succulent flavour. A true taste of Connemara.

THE EXAMINER
MONDAY, OCTOBER 18, 1999

Difficult to lick these lamb chops

by Trish Dromey

Indigenous Industry

YOU might have thought that lamb was just lamb, but a group of farmers in the west are intent on letting the world know that Connemara Hill Lamb is a very distinctive product.

Some 250 of them banded together earlier this year to form Connemara Hill Lamb Ltd, and their product is now being sold in a large number of butchers' shops in the west and in Dublin.

Their company was born from the desperation of being unable to get good prices, but after their first season of branding and marketing their product, the outlook is increasingly hopeful.

The first step for the group, headed up by chairman Joe Rafferty, was to ensure the production of high-quality lamb. This involved the introduction of careful farm practices. "We have the producers registered members of our group; their lambs, our own grader-checker visiting the member farms; ear tags for traceability and control; a central abattoir and direct distribution services. All these factors combine to identify our product as being both of local origin and of high quality," explained Mr Rafferty.

The other important step was marketing — a difficult task for a small group with limited resources. The group held a launch in Galway in June and also circulated a large number of butchers and restaurants with details of their product.

They have already succeeded in getting Connemara Hill Lamb included on the menu in some restaurants and also got a very positive response when it was tasted at the AGM of Euro-Toque chefs and restaurateurs earlier this year. The group is still at the early stages of development, but producer group secretary Áine Ní Chiarragáin believes that it can be turned into a viable business and that Connemara Hill Lamb with its distinctive taste is a highly marketable commodity.

"The farmers were not getting the proper price for their lambs, but this is a significant step in the right direction. We have identified a quality product with a unique taste for which we can get a premium price," she said.

The selling period for Connemara Hill Lamb extends from June to October and as this comes to an end, the group plans to spend the winter months making plans for next year.

The short-term aim is to gain a firm foothold on the Irish market