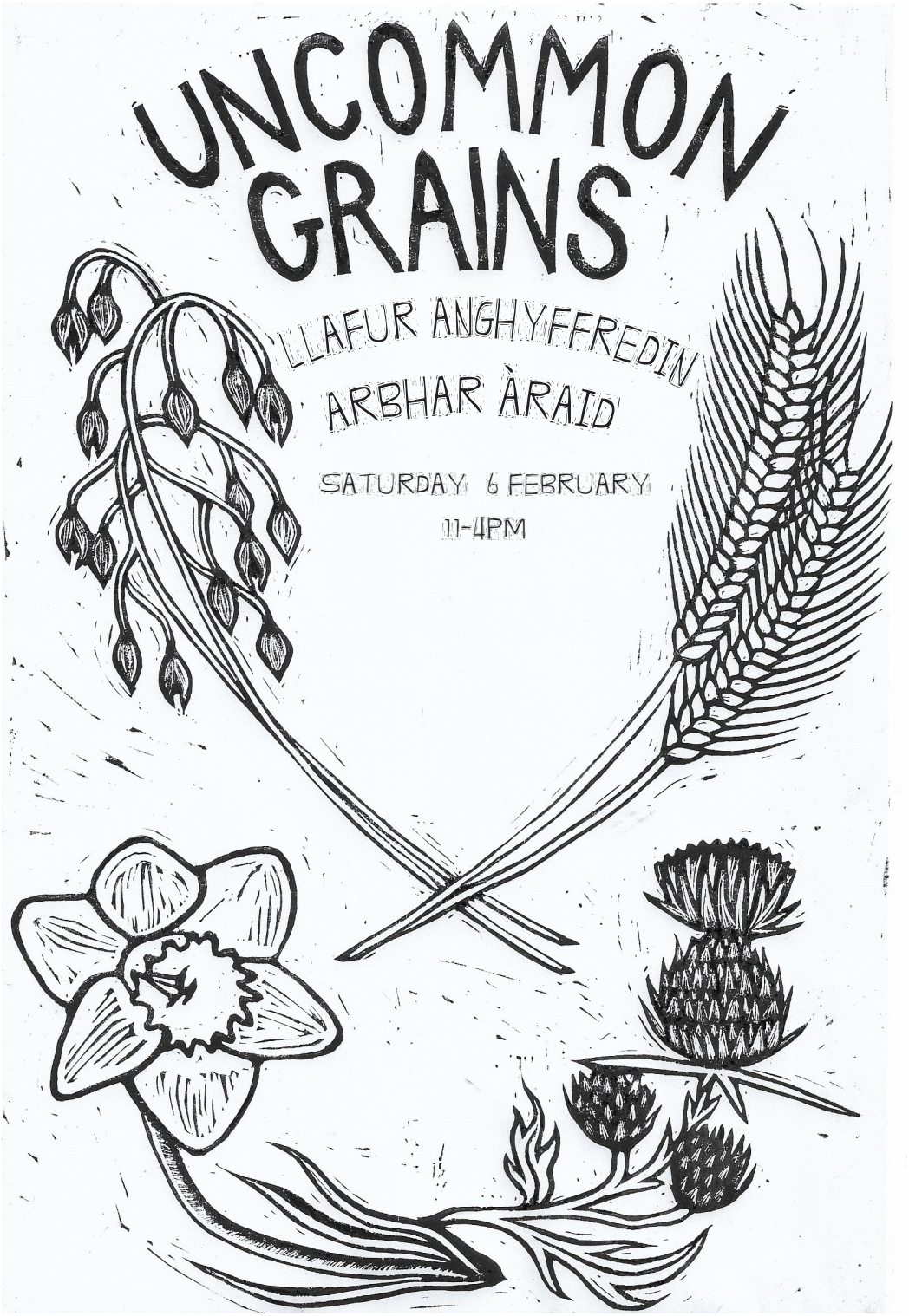
UNCOMMON GRAINS

LLAFUR ANGHYFFREDIN

ARBHAR ÀRAID

SATURDAY 6 FEBRUARY

11-4PM



Croeso i'r Cylchgrawn Grawn Anghyffredin, cydymaith i'r digwyddiad, Grawn Anghyffredin, a gynhelir ym mis Chwefror 2021.

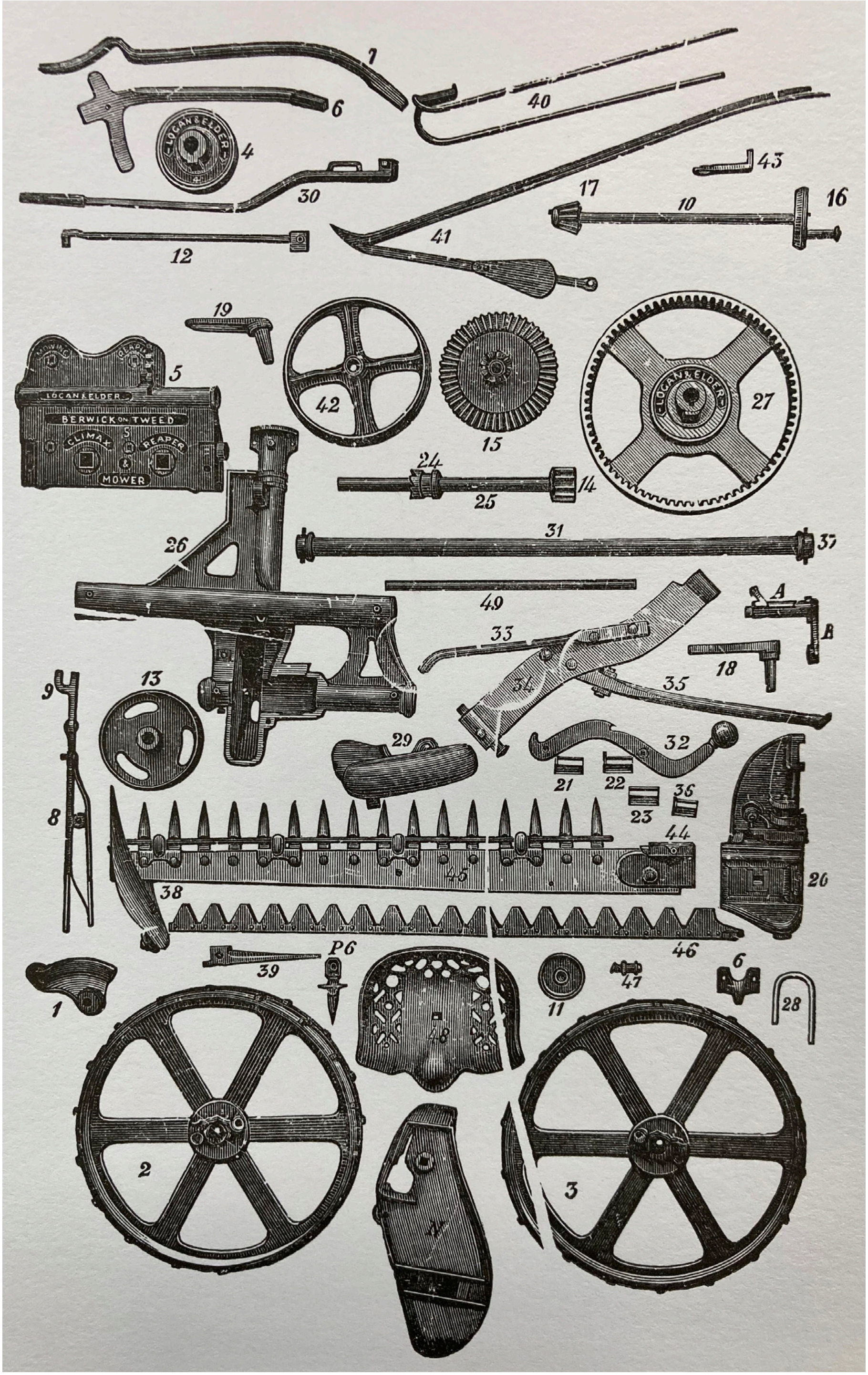
Gobeithiwn fod ei ddal yn eich dwylo'n eich helpu i deimlo'n gysylltiedig â'r mudiad hwn i amrywio'r mathau o rawn a dyfir, ar adeg pan na chawn ni ymgynnull yn yr un lle. Mae Grawn Anghyffredin yn ymwneud â dwyn pobl at ei gilydd o'n rhwydweithiau grawn yng Nghymru a'r Alban i rannu gwybodaeth, profiad, straeon a, ryw ddydd gobeithio, hadau. Rydyn ni'n canolbwyntio ar geirch o fryniau Cymru a Haidd Bere o Ucheldiroedd ac Ynysoedd yr Alban. Er yn gyffredin ar un adeg, mae'r mathau hyn o rawn wedi mynd yn anghyffredin. Rydyn ni eisiau dod â nhw'n fyw unwaith eto.

Fàilte oirbh gu Raon an Arbhair Àraid, a tha mar phàirt de thachartas an Arbhair Àraid a tha ga chumail sa Ghearran 2021.

Tha sinn an dòchas gu bheil a bhith ga chumail nur làmhan gur cuideachadh a bhith a' faireachdainn ceangailte ris an iomairt seo airson bith-iomadachd arbhair, fhad 's nach urrainn dhuinn cruinneachadh san aon àite. 'S ann mu bhith a' toirt dhaoine ri chèile bho am measg nan lìonraithean arbhair ann an Alba agus sa Chuimrigh a tha Arbhar Àraid; gus eòlas, fiosrachadh, sgeulachdan, agus thathas an dòchas, là brèagha air choireigin, sìol, a roinn. Tha ar n-aire air Eòrna à eileanan na h-Alba, agus Coirce à beanntan na Cuimrigh. Ged a bha iad seo pailt uair dhan robh saoghal, tha an t-arbhar seo a-niste gu math gann.

Welcome to the Uncommon Grains Zine, an accompaniment to the Uncommon Grains event run in Feb 2021.

We hope that holding it in your hands helps you to feel connected to this movement for grain diversification, at a time when we can't gather in the same physical place. Uncommon Grains is about bringing people together from our grain networks in Scotland and Wales; to share knowledge, experience, stories and hopefully one day seed. We are focusing on Bere Barley from the Scottish Highlands and Islands and Oats from the Welsh hills. While once common, these grains have become uncommon. We want to bring them to life again.


LOGAN & ELDER
BERWICK ON TWEED
CLIMAX
REAPER
&
MOWER

Programme

Saturday 6 February 11 – 4 pm

Time	Location	Title session
10:45 -11:15	Main Room	Introduction & Ceremonial Opening.
11:15– 12:00	Room One	#STORIES from Wales to Scotland.
11:15– 12:00	Room Two	#DIVERSITY - 'Genetic diversity research & outreach, research institutes and small-scale growers, with visual displays & updates on research into traditional Welsh oat and bere and links with small-scale growers.
12:15 – 12:45	Main Room	#GROW presenting the Welsh and Scottish grain network.
13:00 – 13:45	breakout rooms	#NETWORK LUNCH with Common Grain discussion group looking at next steps in Scotland.
14:00 – 14:45	Main Room	#HACK: The name of the game is Machinery & Dehulling - tackling tech bottlenecks in small-sale value chains, presenting results from research and voting on models to take forward.
15:00 – 15:30	Room One	#BREW DEMO - Bere brewing with Richie Walsh.
15:00 – 15:30	Room Two	#BAKE DEMO - Bere baking with Rosie Gray.
15:30 – 16:00+ (til the wee hours)	Main Room	#CEILIDH – music, song and poetry.


#STORIES

from Farm by the Shore

by Thomas A. Clark

small oats rye bere barley
ripe harvest in late summer
a shallow ploughing
grazing and fallow in rotation

corncrake and corn bunting
great yellow bumble bee
oystercatcher lapwing golden plover
orchid vetch and clover

when no one is home
the strawberry roan
stands in the rain
forlorn

mattress of heather
of bracken or eelgrass
pillow of cottongrass
stuffed with a down
of coltsfoot or reedmace
floor strewn with bog myrtle

strong rope of heather
honeysuckle bridle
twisted birch bark tether
fish trap of sedge purple moor-grass anchor rope

I Gyfarch Tudur Dylan

gan Dic Jones

Bu, yn heulwen eleni'n
Dod I'th gadeirio di
Dy weled, Dudur Dylan
Yn agor cof am greu cân
Am gaeau ŷ d a gwair gynt
Yn awel y deheuwynt.

Wyt o egin dy linach,
Crych dy ben fel Ceirch Du Bach
Yn agor eto'i lygad
O'i stôr I arlwyo'r wlad.

Eginai yntau'r gynnar
Â chnwd trwch yn y tir âr,
Ei fôn yn cadeirio'n dew
A'i wedd mor las a'r eiddew,
A ddoi'n aeddfed ei hedyn
Yntau'n yr ha'n gynt na'r un.

Safai ar ei goes fer
A honno'n frig i'w hanner,
Yn y gwynt a'r glaw i gyd
A safai'n y tes hefyd.

Ei bridd oedd y broydd hyn,
Ein pridd piau'i wreiddyn,
Ac yn ei rawn gynnau'r oedd
Egni'r haf dros ganrifoedd.

Ni fynnai ef gael dwfn wâl
Y Fision's artifissial,
Nid ydoedd i'w faldodi
Na'i gymell â'ch chwistrell chi.

To Greet Tudur Dylan

by Dic Jones

I have in this year's sun
Come to enthrone you
To witness you Tudur Dylan,
Opening the memory's store of song
Of corn fields and grasses gone
In the southern breeze

You are the bud of your line,
Your crumpled head like Little Black Oats
Again opening the eye
Of his store to replenish the land

Early he sprouts his head
with thick crop in the furrowed earth
Noble upon a sturdy throne
as green as ivy
He comes of age with seed
Sooner than most in the summer sun

He sits on stout foot
And that mere half his height,
In the wind and the rain
And the heat.

His soil was of these lands,
This earth gave him roots,
And in his early harvest grain
Were centuries old sun's rays.

He did not seek a deep bed
The Fison's artificial,
Nor was he to be fondled
or stimulated with your sprays.

O dir y graig dôi â'r grawn,
Gnwd di-rwysg ein tir ysgawn
Heblaw am gyfeiriau blith
Gwennudd yr haidd a'r gwenith.
Ireiddiai'u pridd, roedd parhau
Yn ei hen, hen emynau.

Ar ddyfod diwrnod dyrnu
Ceirch di-ail oedd y Ceirch Du,
Dôi i mewn fel teid y môr
I gwbwl lenwi'r sgubor.

Roedd nodd a rhuddin iddo -
Hyd yn oed i'w welltyn o,
Amheuthun o'i falu'n fân
I anifail, neu'n gyfan.
Roedd rhyw rinwedd rhyfeddol
Yn ei wisg a wnâi ei ôl
Ar geffyl siew a blewyn
Bustach a lloi bach bob un.

Ddylan, wyt wyneb mebyd,
A'm cof am y caeau ŷd.
Rwyt tithau fel hwythau'n wych,
Had o frid y fro ydych,
A byw, fel y Ceirch Du Bach,
I mi a fyddi mwyach

From rocky ground he bares grain,
Humble crop of our gentle soils
Apart from fruitful acreage,
The blessings of barley and of wheat.
Freshener of soil, there was endurance
In his old, old hymns.

And come the day of threshing
Second to none were the Black Oats,
Which came in like the sea's tide
To wholly fill the barn's store.

There was sap and character to him -
Even to his stalk,
A morsel of him ground
To animal, or whole.
Had some wondrous aspect
His husk left his mark
On horse fine and foul,
Bullock and calf every one.

Dylan your youthful face,
And my memory of corn fields.
You are like him, excellent
A seed of this land you are,
And like the Little Black Oats,
You'll be to me ever more

... translation by Owen Sheirs


#DIVERSITY

Gerald Miles, Caerhys Farm, Pembrokeshire, tells us about his infamous black oat search…

"Black oats (Black Supreme) were one of the prime cereals grown on Caerhys Farm since the 1930's, grown by my father and his father. Like all the great old suitable varieties they fell out of fashion to the point of being extinct. All oat varieties grown now are white or naked oats, black oats are not the norm.

Over twenty years ago I was searching to find black oats, I even placed an advert in the Farmers Weekly to try and find a farmer in Britain who had some seed, but no one got back to me.

Being an organic farmer my hobby was rugby, coordinating an annual rugby tour for the under 13's team. Anyway… while enjoying a pint in Naas Rugby Club, county Kildare, talking to one of the Naas coaches about farming and black oats, he said he knew a farmer friend of his Farr who grew black oats and he would try and get some seed for me.

The following Easter when Naas Rugby Club came on tour to play us at St Davids their bus had 50 kg brought over as a gift to me from Naas which was a fantastic surprise."

"Trying to find ancient varieties is like searching for the holy grail and sometimes you never know where you might find that precious seed."


#GROW

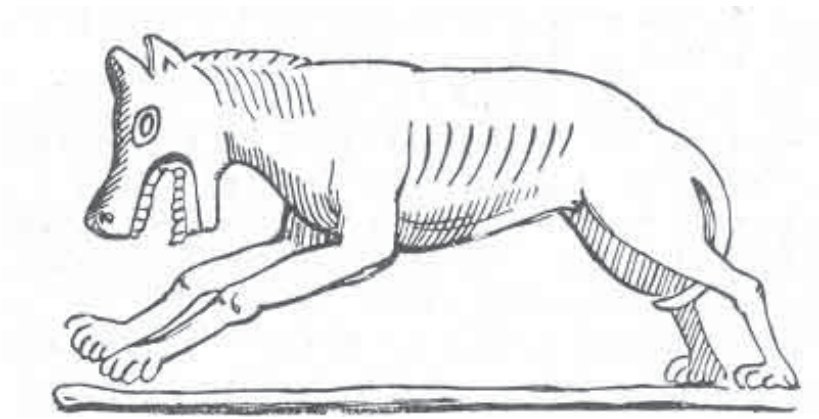
Oatlore & Herbology

by Sinéad Fortune

In folklore grain fields were inhabited by spirits who generally stuck to themselves, but would cause injury or illness to those who came into contact with them.

The *feldgeisten*, Field Spirits, came in many forms, among them the Haferwolf or 'Oats-wolf'. During harvest, the haferwolf would recede into the oats as the farmers advanced until he was trapped in the last sheaf. This sheaf was cut, bound, and usually turned into an effigy of a wolf or man (strawmen or corn dolls come from the same lore).

In a Prussian version, the spirit was a goat and was on the defensive. The Oat Goat would hide in the oats and attack any harvesters who weren't working at an appropriate pace. In the Grenoble region, they used a real goat to egg workers on; the goat was left to frolic in the field during the harvest, and at the end of the day met a grizzly end when it was sacrificed, cooked, and eaten.



Wolf: from a stone at St Andrews, *Sculptured Stones of Scotland*

OATS: for healthy body & mind

Main constituents: saponins, flavonoids, alkaloids, carotene, vitamins B1, B2, D and E, protein, starch, fat.

Actions: antidepressant, restorative nerve tonic, diaphoretic, nutritive, reduces cholesterol.

The traditional staple of Northern Europe, oats are a warm, sweet food, ideal in a cold climate. However, there is more to oats than just gruel. Oats provide one of the best remedies for 'feeding' the nervous system, especially when under stress or suffering from depression. It is also very good for the skin; the high levels of silicic acid in the straw explains its use as a remedy for skin conditions. Cleansing and soothing, oats also make a good alternative to soap or detergents for very sensitive skin (it contains saponins).

Tincture: this should ideally be made from the fresh green whole plant. That 1-5mL 3 times a day for nervous exhaustion, tension, anxiety, debility following illness, or depression. Combines well with vervain, wood betony, or valerian

Infusion: Take 1 cup of standard infusion (1 heaped tsp dried herb or 2 tsp fresh herb to 175mL hot water) of oatstraw as required as a restorative for the nervous system

Facial scrub: for dull, greasy skin or a tendency for acne, mix ½ cup of fine oatmeal with water to make a paste. Apply to the face and leave for 10 mins before rinsing.

Bath: strain 600mL of a standard decoction (15g dried/30g fresh herb to 750mL cold water – bring to boil and simmer with lid on for 15-20 mins) of the oatstraw or whole grains into the bath to ease itching and eczema.

BARLEY: nutritional & medicinal

Main constituents: amalyse, invertase, dextrin, phospholipid, maltose, glucose, iron, sulfur, phosphorus, magnesium, niacin, protein, vitamin B1

Actions: demulcent, digestant, carminative, nutritive

Barley is an almost perfect food: high in fibre, calcium, iron, magnesium and potassium as well as lysine, an essential amino acid. Barley was the chief grain used for bread-making in Europe before wheat and rye. Often taken as barley-water in kidney, intestinal and bowel disorders, barley is also useful as general immune system protection and is used to treat constipation and anaemia. It is also good for cleansing and softening the skin. Barley boasts high nutritive and vitamin levels: it's seven times richer in Vitamin C than oranges, five times richer in iron than spinach and has 25 times the potassium of wheat. It's also high in superoxide dismutase (SOD), the enzyme that slows the ageing of cells.

Nicolas Culpeper, a hugely influential 17th century herbalist and physician, praised barley's uses. He seemed particularly fond of boiling it in various liquids: "A poultice made of barley meal or flour boiled in vinegar and honey, and a few dry figs put into them, dissolves all imposthumes, and assuages inflammation. The meal of barley and fleawort boiled in water, and made a poultice with honey and oil of lilies applied warm, cures swellings under the ears, throat, neck, and such like; being boiled in red wine with pomegranate rinds and myrtles, stays the lask or other flux of the belly; boiled with vinegar and quince, it eases the pains of the gout; barley-flour, white salt, honey, and vinegar mingled together takes away the itch speedily and certainly."

Calendula and oat body scrub:

A simple recipe like this gently cleanses, soothes and enriches the skin.

Ingredients
45g oats
20g bran
15g calendula flowers

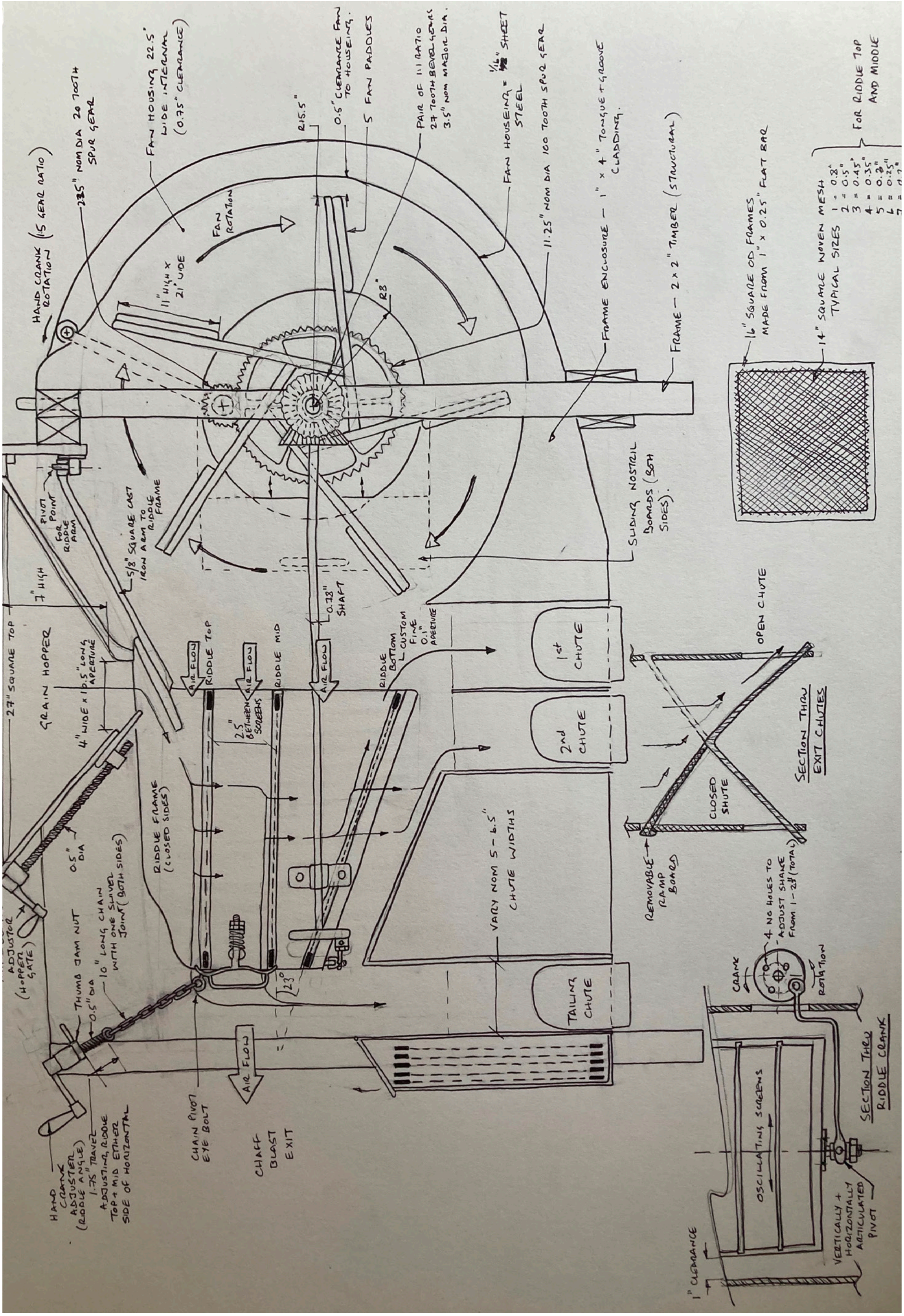
Method
Place oats, bran, and flowers in a muslin bag, tie firmly with string, and use the ends of the string to hang from the tap so the bath water runs through it.
When you are in the bath, rub your skin with the bag, esp any areas of dry skin.

Barley water:

Wash the barley in cold water. Bring to the boil one part barley in 9 parts water then simmer for 20 minutes, covered. Strain and drink a glass in the morning and at night.

To use as a skin freshener: simmer 3 tablespoons barley in 3 cups of water for an hour, covered. Strain, cool and refrigerate. Use as a cleanser and rinse face after use.

Sources:
Bartram, Thomas. Bartram's Encyclopedia of Herbal Medicine. | Hoffman, David. The Complete Illustrated Holistic Herbal. | Ody, Penelope. The Herb Society's Complete Medicinal Herbal. | Neal's Yard Remedies: Cook, Brew and Blend Your Own Herbs


HAND CRANK ROTATION (1:5 GEAR RATIO)
2.35" NOM DIA 20 TOOTH SPUR GEAR
FAN HOUSING 22.5" WIDE INTERNAL (0.75" CLEARANCE)
R15.5"
0.5" CLEARANCE FAN TO HOUSEING.
5 FAN PADDLES
PAIR OF 1:1 RATIO 27 TOOTH BEVEL GEARS 3.5" NOM MAJOR DIA.
FAN HOUSEING = 1/16" SHEET STEEL
11.25" NOM DIA 100 TOOTH SPUR GEAR
FRAME ENCLOSURE — 1" x 4" TONGUE + GROOVE CLADDING.
FRAME — 2 x 2" TIMBER (STRUCTURAL)
16" SQUARE OD FRAMES MADE FROM 1" x 0.25" FLAT BAR
14" SQUARE WOVEN MESH TYPICAL SIZES
1 = 0.8"
2 = 0.5"
3 = 0.45"
4 = 0.35"
FOR RIDDLE TOP AND MIDDLE
FAN ROTATION
11" HIGH x 21" WIDE
R8"
SLIDING NOSTRIL BOARDS (BOTH SIDES).
0.78" SHAFT
PIVOT POINT FOR RIDDLE ARM
5/8" SQUARE CAST IRON ARM TO RIDDLE FRAME
7" HIGH
27" SQUARE TOP
GRAIN HOPPER
4" WIDE x 10.5" LONG APERTURE
AIR FLOW
RIDDLE TOP
RIDDLE MID
RIDDLE BOTTOM L CUSTOM FINE 0.1" APERTURE
2.5" BETWEEN SCREENS
1st CHUTE
2nd CHUTE
TAILING CHUTE
OPEN CHUTE
CLOSED CHUTE
SECTION THRU EXIT CHUTES
REMOVABLE RAMP BOARDS
VARY NOM 5 - 6.5" CHUTE WIDTHS
RIDDLE FRAME (CLOSED SIDES)
0.5" DIA
ADJUSTOR (HOPPER GATE)
THUMB JAM NUT 0.5" DIA
10" LONG CHAIN WITH ONE SWIVEL JOINT (BOTH SIDES)
HAND CRANK ADJUSTER (RIDDLE ANGLE) 1.75" TRAVEL ADJUSTING RIDDLE TOP + MID EITHER SIDE OF HORIZONTAL
CHAIN PIVOT EYE BOLT
CHAFF BLAST EXIT
23°
4 NO HOLES TO ADJUST SHAKE FROM 1-2¼" (TOTAL)
CRANK
ROTATION
SECTION THRU RIDDLE CRANK
OSCILLATING SCREENS
VERTICALLY + HORIZONTALLY ARTICULATED PIVOT
1" CLEARANCE

#NETWORK

Seed Sovereignty Programme & Uncommon Grains

by Katie Hastings

The Gaia Foundation's Seed Sovereignty Programme is working to support growers, farmers and grassroots groups to increase and revive their local grain diversity:

Llafur Ni

In Wales, we are supporting a network of farmers and growers working together to share knowledge around regional grains. Of particular importance to the network is the lack of oats grown in our fields while the history books tell a story of hundreds of diverse local oat varieties. Having taken the seeds of 14 rare oats out of the genebanks, the group is working together to slowly bulk them out and learn more about them. A huge challenge for the group is working out how to process these oats for human consumption. Members of the network have embarked on an 'oat quest' which has taken them to old museums, agricultural experts and BBC news appearances. The group continues to work together to find the machinery and knowledge to be able to eat these traditional oats.

Sìol Arbhair

In Scotland, we are working alongside crofters to reintroduce heritage grain and revive the lost the skills associated with grain growing.
The group have teamed up with the James Hutton Institute and Soil Association Scotland to bring the crofters' heritage grain mixtures into intercropping experiments. On at least three locations, among these the Shieling Project, they hope to increase the area grown with bere (Eorna), the traditional Scottish barley. They will also explore how we can further support machinery rings for small-scale grain growing.

www.seedsovereignty.info


#HACK

DIY Home Dehuller:

Grain Huller for Rice, Spelt Wheat, Quinoa and Millet

Allen Dong and Roger J. Edberg, I-Tech, PO Box 413, Veneta, Oregon, 97487 USA

This invention became public domain on August 9, 1989, a gift to humanity

The two main components of the I-Tech rice huller are a hand mill/ flour mill or grain grinder and a rubber-faced disk made from:

- A rubber disk,
- A steel washer for mounting the rubber disk on the hand mill,
- Cyanoacrylate glue ("super glue" or krazy glue") to attach the rubber disk onto the steel washer.

The stationary disk (A) is removed and replaced by a rubber-faced disk (B). By turning the auger handle (C), rice grains are pressed between the rubber-faced disk (B) and rotating disk (D) and then rolled out. The soft rubber disk allows the hulls to be removed with minimal damage to the rice kernels. Natural (gum) rubber is used for the rubber disk because it has better abrasion resistance than synthetic rubber. The "Corona" hand mill is available from R&R Mill Co., 45 West First North Street, Smithfield, UT 84335, USA.

Short grain rice can be hulled at a rate of 200 g/min. The percentage of rice hulled varies from 75 to 99% depending on the rice cultivars, the spacing between the stationary rubber disk and the rotating abrasive disk, and uniformity of spacing between the disks. A tin plated steel burr disk may produce a black gum residue when hulling rice, until the tin is worn off. No black residue was found when using a cast iron disk or stone disk.

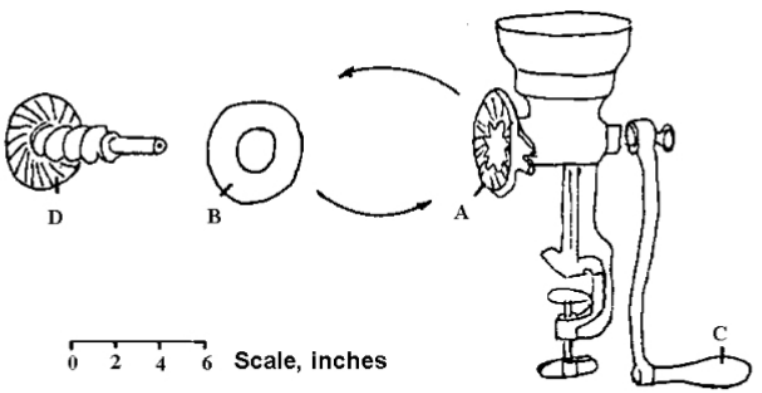
The grain huller also hulls millet (Panicum miliaceum), sesame (Sesamum indicum), and spelt wheat (Triticum spelta) as well as remove saponins from quinoa (Chenopodium quinoa). To "wet" hull sesame, soak the seeds

in 1% (w: v) lye (sodium hydroxide) solution for 10 seconds to 5 minutes, then rinse with water and 1% solution of acetic acid (Shamanthaka Sastry et al, J. Am. Oil Chem. Soc. 46:592A, 1969; Moharram et al, Lebensmit. Wissen. Tech. 14:137, 1981).

A steel burr disk is preferred for wet hulling sesame, while a stone disk is preferred for hulling spelt wheat. Hand operated rice huller: A) stationary disk, B) rubber disk, C) handle and D) rotating disk with auger. Remove stationary disk and replace with rubber-faced disk.

In the US, the C.S. Bell model 60 (cost ~$325) and the Corona hand mill (cost ~$40) representtwo ends of the spectrum of hand mill quality. For serious hulling, the C.S. Bell is the better choice. This mill weighs 54 pounds; its auger shaft is supported by 2 bronze bearings with oilers; the grinding disks self aligns; and the mill can be motorized. The bronze bearing with oilers allow the shaft to rotate at 300 rpm without heating up. (CS Bell, PO Box 291 Tiffin, OH 44883, phone 419-448-0791).

The Corona hand mill weighs 14 pounds; it has no bearings; the grinding disks do not self-align; and the mill cannot be motorized. (R&R Mill Co., 45 West First North, Smithfield, UT 84335, phone 801-563-3333).



Hand operated rice huller: A) stationary disk, B) rubber disk, C) handle and D) rotating disk with auger. Remove stationary disk and replace with rubber-faced disk.

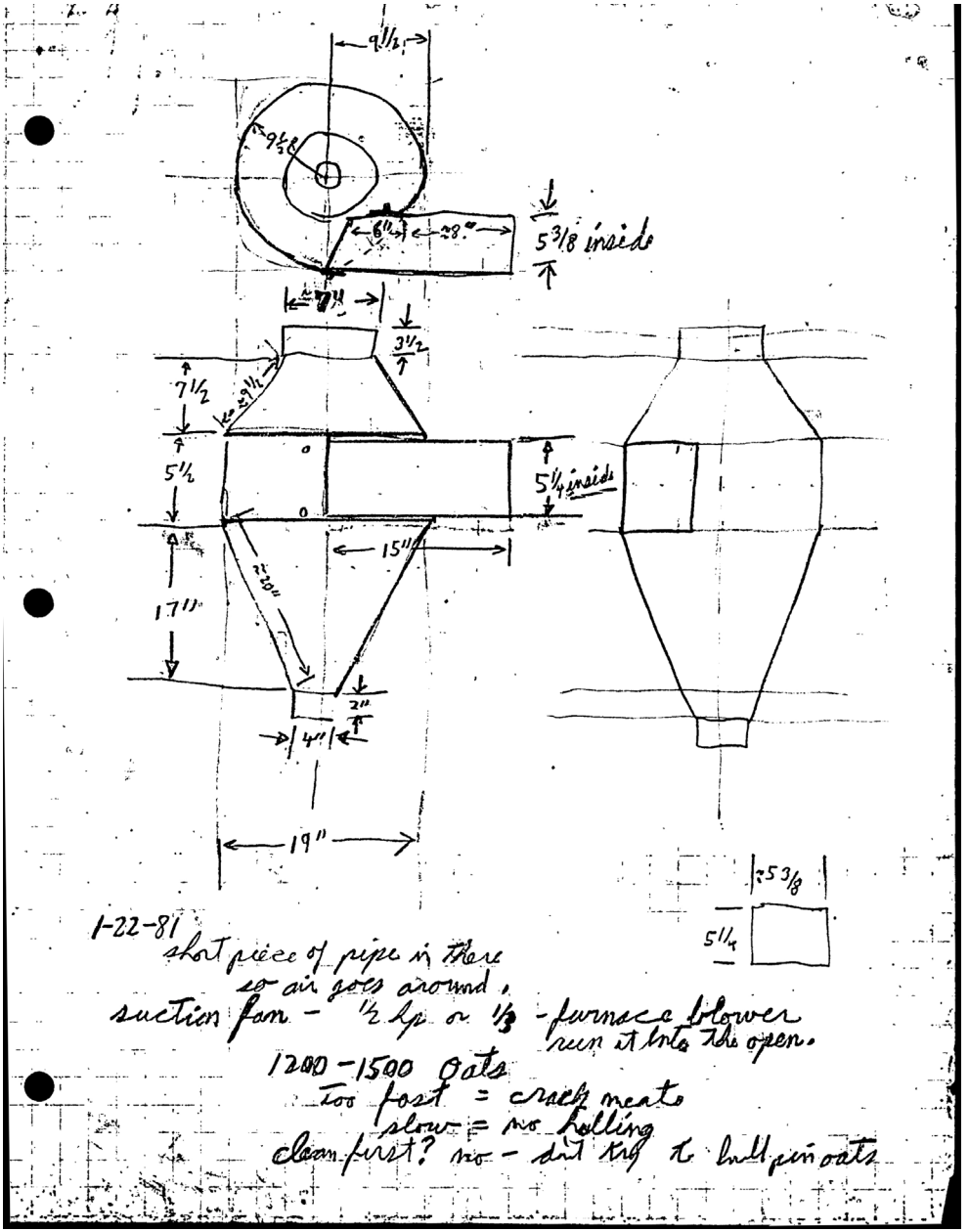


Image above: Oat and Grain Dehuller, courtesy of FarmHack
https://farmhack.org/tools/oat-and-grain-dehuller

Croft-Scale Grain Processing

Extract from a comprehensive report written by Adam Veitch, soon to be published by the Seed Sovereignty UK & Ireland Programme.

An overview of stages in grain production

Taking away the machinery for a moment, it is worth illustrating and describing the typical process steps of taking grain from a freshly cut sheath to a clean bag of naked grain.

Our starting point (1) is a freshly cut sheath of corn, bound either with twine or a twisted rope of grain. The first stage is to knock the grain out of the ear, leaving us with a resulting assortment of smaller items with our grain amongst them (2).

If our grain is bearded (i.e. with long awns), we may need to hummel at this stage to forcibly detach the awn from the grain (3). The resulting mixture then needs sorted into component parts, giving

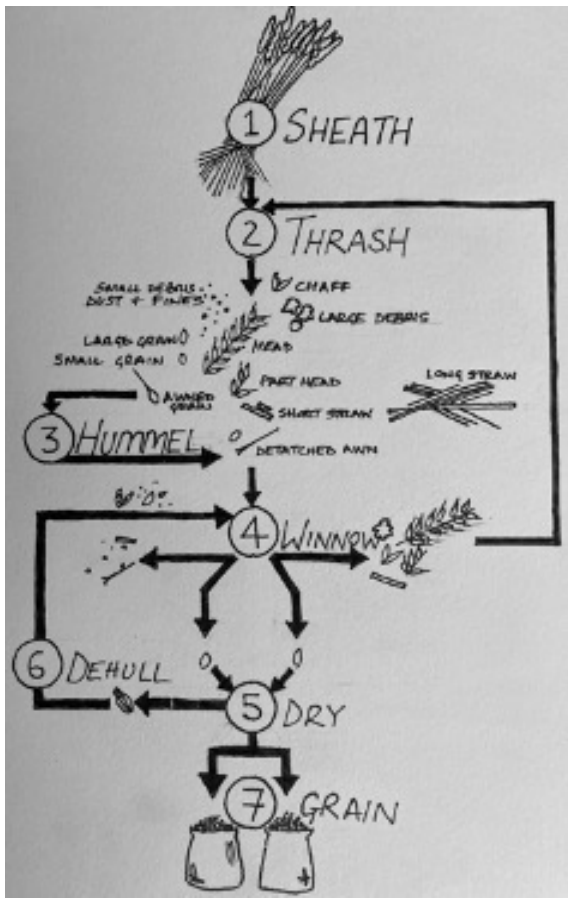


Figure i - Flow Diagram of Grain Processing

us both waste products and several grades of relatively clean grain (4). Depending on how we got to this point, we typically need to dry our grain at this point – for both storage and onward processing (5). Thereafter, if we have a hulled grain, now is the time to rub or knock the grain free from the husk (6). This resulting mixture again needs to be sorted into component parts, (4) leaving us with naked grain (7).

Processing by Hand

Processing grain by hand remains a remarkably accessible method for small scale grain growers to process small volumes of grain. It also serves a good foundation for thinking about the first principles of processing grain, and where machinery evolved to increase efficiency.

Threshing by hand

The most primitive version of initial separation that was utilised in times past was fire - "the primitive process of 'graddan' prepared the corn for grinding by what can only be described as a quick burning over a field fire." (Gauldie, 1981)

This rudimentary method of burning the grain from the ear was undoubtedly carried out in Scotland as recorded by Thomas Pennant, the curious traveller, when he wrote of grain preparation in the Island of Rum in the late 17th century "the corn is graddan'd or burnt out of the ear, instead of being thrashed; this is performed in two ways; first by cutting of the ears, and drying them in a kiln, then setting fire to them on a floor, and picking out the grains, by this operation rendered as black as coal. The other method is more expeditious, for the whole sheaf is burnt without the trouble of cutting off the ears; a most ruinous practise as it destroys both thatch and manure." (Pennant, 1772)

The more established method was to strike the head of the grain. One method for striking the grain was simply with a notched stick, known in Gaelic as maid froisidh (stick for showering grain). The practice of using this stick was known in Gaelic as frosadh a ' choirce (showering the oats). The alternative method was to hold the sheath of the grain and lash or

strike the whole sheath against a stationary object. This threshing by lashing often featured an inclined threshing frame, with cross pieces with iron nails, or many a barn was built with a 'gloy stone' - a protruding stone at waist height for lashing the sheath against.

The more established striking method for hand threshing was to use a Flail. Still widely used throughout the world, "the flail, sùist, consisting of three parts, a wooden handle, lorg, a souple, buailtein, of wood or rope, with which the sheaf was beaten, and the sail, shùiste, the thong of sheepskin or some other material that linked the handstaff and the souple." (Fenton, 1980) These varied significantly in design depending on where you were located within Scotland.

Figure ii - A selection of Scottish flails at am Fasgadh

Figure iii - a distribution of Scottish flail types in different areas

Working the flail was often done in gangs of threshers, on a threshing floor in a dedicated building. "Threshing done in two stages, firstly 'cathadh', was in the barn". (Fenton, et al., 2012). In the traditional barn design, there was a winnowing hole 'toll fhasgnaidh'. "During threshing it could be opened along with the door at the front of the house, so that a breeze blowing through the passage helped clear away the chaff from winnowing and disperse the dust created by threshing in an enclosed area." (Fenton, et al., 2012) "Threshers did not receive a money wage, but a proportion of the grain they threshed, This was called the lot usually a 25th of the task or piece of work he did " i.e. a piece worker". (Fenton, et al., 2012)

"There's a little story about the flail used many years ago on the farms. In the days of the flail the farmer would pick up a handful of corn or a tet of corn, as they ca'd it, and shake it tae see if it was clean threshed. If it rustled, reestled or tremilt, it was not cleanly threshed and the men we're classed as bein weak. The saying goes like this:-

Tremlin straes maks kickin owsen
Kickin owsen maks barkit land
Barlkit land maks peer corn
An peer corn maks thin pottage
Thin pottake maks wyke men
And wyke men maks tremlin straes[1] "

Hummerling

If the grain is bearded with awns (such as bere barley), it was common after threshing to hummel the grain with a hummerler, to forcibly remove the awns.

"A tool of similar appearance was the 'barley hummerler'. This had a greater number of blades, which might be parallel or arranged to cross. This was pounded on the barley to remove the long spines or 'awns'. A roller type, which gave the same action was used and later threshing machines incorporated hummerlers to deal with Barley awns." (Blandford, 1976)

1 Transcript of Audio recording from Charles Reid, Buchan/Epson by Hamish Henderson and James Porter, October 1972.

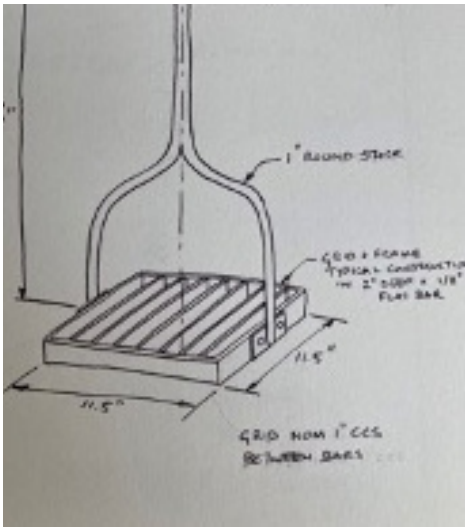


Figure iv - A sketch of a barley hummerler

Figure v - A photo of a barley hummerler

Winnowing by Hand

Before machinery was available, grain was cleaned or dressed following the flail, by being passed through a series of hand shook riddles, often with a breeze between doors or atop a small hill.

There was a multitude of examples of these riddles at am Fasgadh. They were mostly constructed of a bent hoop of laminated wood, with a sewn skin of leather of varying design. In the case of the perforated holes, they were burned into the leather with a hot awl.

The coarser riddles typically had ¼" holes, the finer riddle had 1/8" holes, often in an ornate pattern. Finally there was the ancient wecht – with no holes.

"Some useth to winnow, some useth to fan,
Some useth to cast it as clean as they can.
For seed go and cast it; for malting now so,
But get out the cockle and then let it go." (Tusser, 1573)

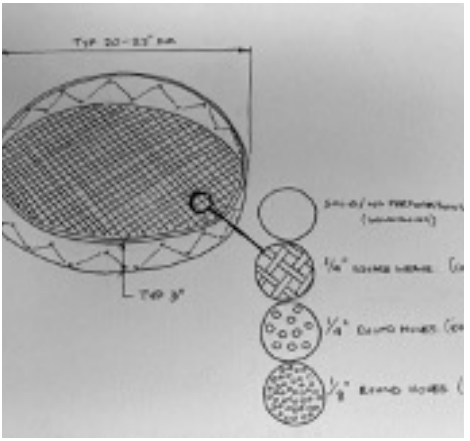


Figure vi - A sketch of winnowing riddles and wechts at am Fasgadh

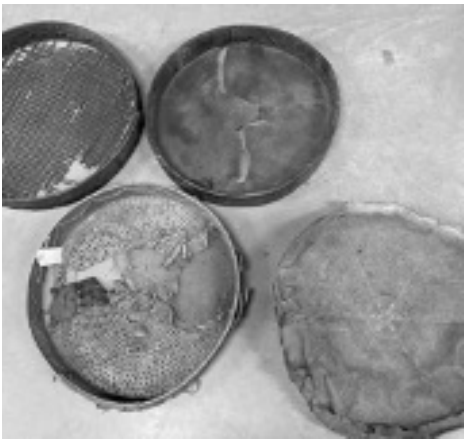


Figure vii - A selection of winnowing riddles

Dehulling by Hand

It was recorded that dehulling could be done by hand (or foot!) – when the Napier commission came across this on their inquiry tour in the late 18th century "she was grinding off the beards and hulls of barley with her naked feed, to make broth, a common thing'. (Cameron, 1986)
It was also recorded that both hummelling and dehulling could be conducted by forceful application of the flail – "originally grain was "hummelled" or de-husked with the flail on a special wooden threshing floor - the baram or barrow - to struck heavily." (Fenton, 1980)
But the most common method when it came to de-hulling husked grains by hand, was the knocking block or knocking stone. This could be made from wood or stone. The examples at Am Fasgadh are all stone, with surviving wooden versions being "a great rarity". The mallet was typically of wood. The block was called in Gaelic "*An Cnap Eorna*", the Barley

block, and often for shortness the *Cnap*, or *Cnotag*. The mallet was called *An teangaidh*, the tongue.

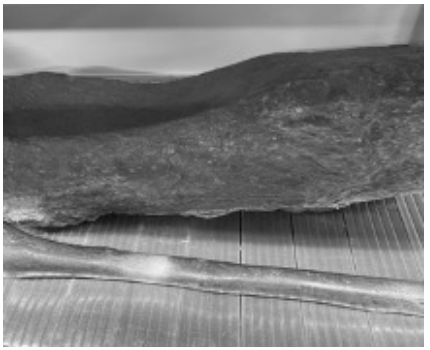


Figure viii - An example of both knocking stone and stick

Figure ix - another example of a knocking stone

The general principle was "some barley was put into a dish and damped with water. It was rubbed with the hand, and when so far cleaned and moistened it was put into the block and beaten with the mallet. The operator, usually a women, was seated, and carried on the process very methodically – first giving a stroke downwards upon the barley, and then a lighter stroke on the side of the block to shake off any grains that might have adhered to the mallet. So on she went, with a sort of musical rhythm, often with the accompaniment of song, till the grain was loosend from the husk.

The next step was to re-winnow the grain, which was done with a fan (an *dallanach*). The barley was then put into a dish with warm water, and carefully worked about with the hand, till it was perfectly smooth and white. It was then fit for use, and was called "Cnots", pronounced "Grots. Perhaps this may be the origin of the English word "groats". (Forsyth, 1900)

Another description of the use of the knocking block came from am Fasgadh's founder "To shell the barley it was browned before the fire and then put in a hollowed stone, the Cnotag (or Eornachan) in some of the

Islands, water was added and it was stirred with a stick (the Miade Cnotaig) till the kernals were freed from the husks. The Maide Cnotaig has appeared in many tales, for instance, a witch is said to have flown on one from Moidart to Lochaber." (Grant, 1961)

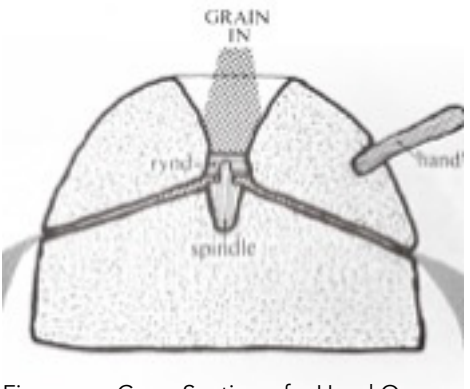


Figure x - Cross Section of a Hand Quer

Figure xi - Example Hand Quern at am Fasgadh

There was little literary evidence to support this, but it would seem likely that some grain was dehulled with the ubiquitous hand quern, it being well suited to the process. And as we will see later, the rotary mill the querns developed into were definitely utilised for the purpose of Dehulling.

"The principle of the quern held throughout the development of milling with stones: a stationary lower stone, or *bedstone*, and an upper, or *runner*, stone which was turned above it, while grain was fed through a central hole, the *eye*, in the top stone. The grain was ground between the faces of the stones, which were later grooved or dressed, to give a better cutting action, and the ground meal was distributed to the edge of the stones for collection.

Three wooden parts were essential: the *rynd*, the spindle and the handle. The rynd bridged the eye of the runner stone and enables it to be hung on the top of the spindle. The spindle projected from the centre of the bedstone, was at first fixed to carry the runner stone a little above the

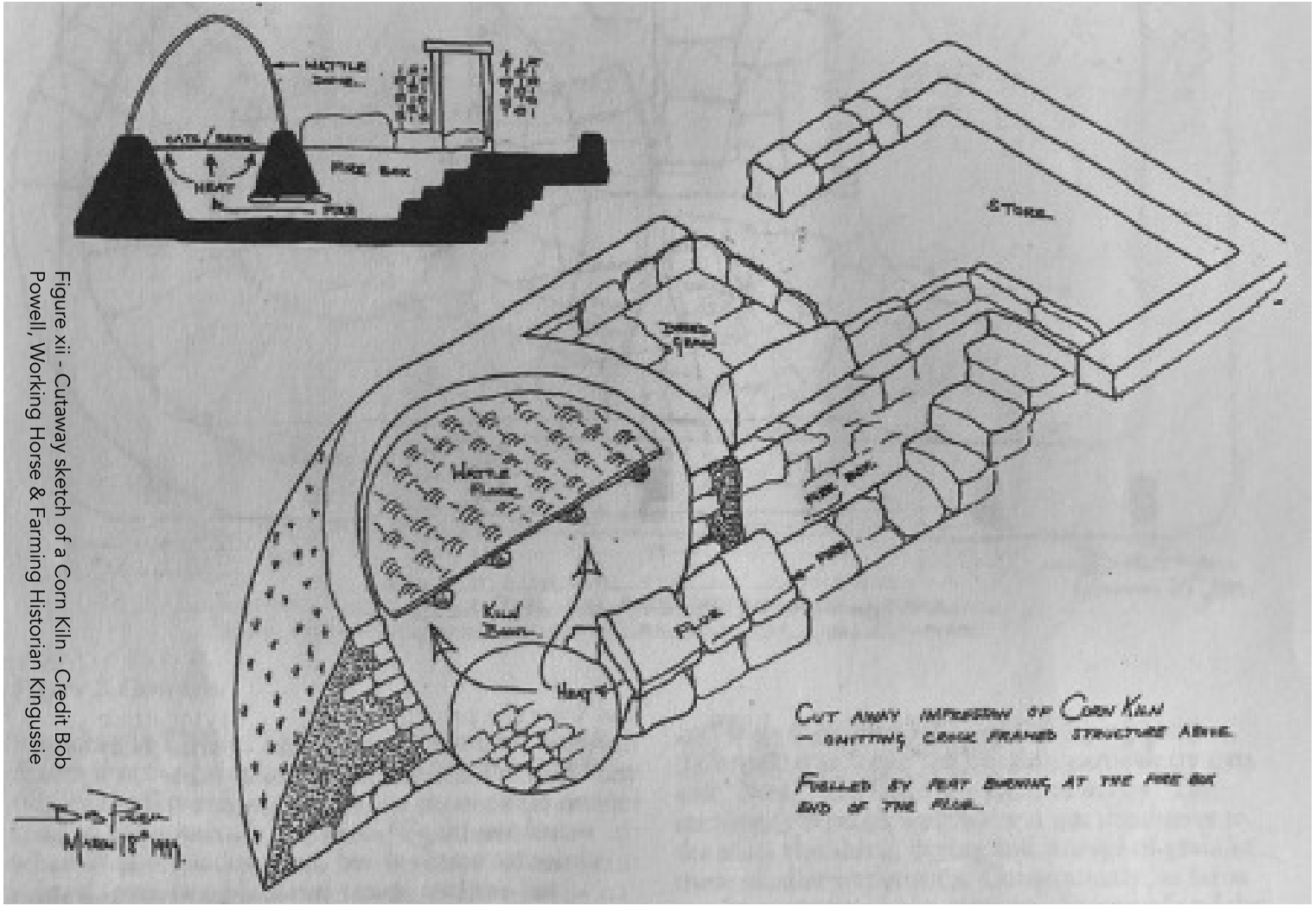


Figure xii - Cutaway sketch of a Corn Kiln - Credit Bob Powell, Working Horse & Farming Historian Kingussie

bedstone, but later the elevation of the spindle could be altered to allow regulation for the gap between the stones." (Watts, 2008) It is likely this control would have allowed crofters of old to utilise the hand quern for the purpose of friction dehulling.

Drying by Hand

Drying small batches of grain by hand was a common practice in the highlands and islands. "In the moist climate of Scotland, grain must be dried before it is ground, otherwise the kernels will not granulate easily. This was especially true of oats. Drying was less necessary for the harder grains of bere or barley." (Fenton, 1976) For small batches this was performed in either an iron pot at the hearth, or in within a net *tarran* hung over the fire. "Aigar meal was prepared from grain dried very slowly in a pot over a fire before being ground in a quern. (Gauldie, 1981). This is likewise decribed by Am Fasgadh's rounder "the grain was heated in an iron pot above the fire and turned with a stick to heat more evenly before being ground. The purpose was to harden the grain. The quern consisted of two round stones set on a firm table with a strong handle fixed in the upper stone. When the handle was turned the meal fell to the clean table." (Grant, 1961)

Later it was commonplace for a crofter to have a dedicated corn drying kiln, and many a blackhouse would have featured a round corn kiln at one end. There is a recreated kiln barn at am Fasgadh, which is well documented.[2]

In the corn kiln, the main structure revolved around a circular drying floor originally of timber ribs with straw mats, on which the grain was laid, and fired via an adjacent firebox. It was "also common for "a 'toll-càthaidh' (chaff hole), to admit wind to clean the corn." (Fenton, et al., 2012). The grain in the kiln was laid at a depth of 6", for 5 to 6 hours, turned at regular intervals.

2 Paper by Bob Powell – A Scottish Highland Corn Drying Kiln-barn Recreated


#BREW

Brewing a Bere and Oat Beer

by Richie Walsh

Bere barley is possibly the oldest known type of barley still grown today in Britain. It is a six-row barley grown primarily in the Highlands and Islands of Scotland. Bere, or an ancestor of bere was probably brought to Scotland by the Vikings.

In modern brewing malted two-row barley is used to make up the majority of the grain bill as it has a lower nitrogen content than its six-row cousins. This allows more starch to be converted into sugar in the mash and therefore into alcohol in the fermentation process. Six-row barley is said to give a more grainy flavour compared to two-rows more malty flavour. It is more commonly used in American beers alongside rice and corn which are rarely used in modern European beers. That being said, as bere has been grown in Northern Scotland and its islands for possibly over a millennium, the Scottish people have traditionally made bere malt which they have made into whiskey and beer. In the recipe below a mix of 2 row Pale Ale malt and six-row bere malt is used with a little bit of oats.

After over a decade of highly hopped IPAs using primarily American hops dominating the craft beer market, it must be malt's turn to take central stage in our beers again. Where better to start than historical British barley which is seeing a renewed interest from small scale growers. The fantastic work that Peter Martin and his team at The Agronomy Institute of Orkney has been doing in highlighting the history and many uses of bere, combined with the renewed interest that their work has sparked with crofters on the highlands and islands, makes bere an obvious choice of historical grain to experiment with in brewing.
The use of oats in beer is already seeing a renewed interest. This is partly

due to its use to create a haze in the growing in popularity New England IPA style. New England IPA is a style of beer that uses large hop additions, but added at the end of, or after the boil. Instead of adding bitterness which is achieved through boiling the hops, the late additions add aroma and fruity flavours to the beer. Haziness is a key characteristic of this style which many brewers use oats to achieve. Whether raw, malted, or rolled oats are best to achieve this haze has been the subject of many an argument on brewing forums since the creation of this style. Examples of using oats in any form can be found online including many award winning recipes. Oats are not limited to New England IPAs though. They have historically been used in Oatmeal Stouts to add a silky mouthfeel and a head that doesn't dissipate until your glass is empty. A stout is a clever recipe to use oats in as you do not notice a haze in a black beer, but with the growing popularity of New England IPAs customers seem to be less looking for a crystal clear pint and more looking for something interesting.

In the recipe below I will include a small amount of oats to add in head retention and give a silky mouthfeel. Using as much oats as a brewer would for a New England IPA is not recommend as haze is not our goal here, just 10% of the total grain bill will be made up from oats.

Equipment

I will try to simplify to brewing process as much as I can and make it possible to make this recipe with items that you might have on hand, or that you can order from a homebrew shop. If you have ever made elderflower wine, you most likely have some, if not all of this equipment on hand. Two 5l food grade plastic buckets and an airlock are needed to make this recipe. You can usually recycle old sauce buckets from your local fast food place for this, or order buckets from a homebrew shop with your ingredients. One bucket will need to have the airlock fixed in place. You can order an airlock with a rubber washer. These airlocks require an 8mm hole to be drilled to fit the washer.

This recipe if for 4.5l (1 IMP Gallon). The recipe can easily be scaled up to larger volumes.

- 8 litre or larger cooking pot - 2.5 litre or larger cooking pot
- 5 litre food grade plastic bucket x 2 - Airlock

- Thermometer - Syphon
- A mashing Brew in a bag nylon bag - Sieve or colander that fits over your large pot
- Hydrometer - Cleaner (VWP or PBW)
- Sanitizer (Star San) - Long handle spoon (not wood)
- Weighing scale - 14, 330ml, or 9, 500ml dark bottles. If it is your first brew order PET screw top bottles with your ingredients. If you decide you want to continue brewing a crown capper is a great piece of kit to invest in.

Ingredients

When making beer from malted grain the first step is to crack open the grain. You don't want to grind it into flour, but just crack it open so the water comes into contact with the inside of the grain. A good grain mill will make a mix of large and small particles. A homebrew shop will usually give you the option to buy your grain whole or crushed. If you don't have a malt mill, buy your grain crushed. Uncrushed grain has a shelf life of 18 months while crushed grain needs to be used as soon as possible, so keep this in mind when buying crushed grain. If using flaked oats they do not need to be milled as the inside of the grain is already exposed. If you were to replace the flaked oats in this recipe with raw or malted oats they would need to be crushed.

Target hops are recommended for this recipe as they are an excellent British dual use hop. That is to say, they can be used for bittering and for aroma. Feel free to change up the hops variety, but watch the IBUs (International Bitterness Units) printed on the packet. The idea of this recipe is to let the bere malt flavour shine through with a nice balance of aroma from the late hop additions and minimal bitterness from the early boiled hop addition.

The choice of yeast in a recipe plays a more important role in the flavour of the beer than most people realise. Nottingham ale yeast is recommended for this recipe. The flavour profile of Nottingham is considered to be very neutral and will therefore let the bere flavour shine through. Furthermore, Nottingham ferments clean in a large range

of temperatures from 14°C- 21°C, making it an ideal yeast for brewing without temperature control in all but the high summer months in the UK. It is also available as a dry yeast which is perfect for the beginner brewer. If you wanted to play around with yeasts, or indeed brew in the summer when ambient temperature is over 21°C, you could try a Scandinavian Kveik yeast to honour bere's Viking history, or for the more advanced brewer with temperature control and experience of using liquid yeast you could try WLP028 Edinburgh Ale yeast for a true Scottish ale character.

If all goes according to plan this recipe should make 4.5l of 4.9% British Golden Ale.

- 500g Pale Ale base malt
- 5g Target Hops for bittering
- 400g Bere malt -5g Target hops for Aroma
- 100g Oats (Rolled, raw, or malted) - 1 sachet of Nottingham yeast

Method

1. *Mill:* Crush the grain if you have not bought crushed grain. If using rolled (porridge) oats they do not need to be crushed. Raw, or malted oats will need to be crushed. You may need to adjust your mill to a smaller setting to ensure a good crush as the oats are likely to be smaller than the barley. Then place all the grains in your brew in a bag and tie a knot on the end.

2. *Mash in:* Heat up 4l of water to 73°C in your pot. When you have reached this temperature turn off the heat and dunk in your bag of grains. This should drop the temperature to about 68°C. If you are a little under or over, don't worry about it. Put the top on and then wrap the pot up with towels, jumpers, a sleeping bag, whatever you have on hand to insulate your pot and keep the temperature steady inside. Set an alarm for 60 minutes.

3. *Sanitise:* Use this time to clean and sanitise your fermentation bucket, large spoon, syphon and thermometer. If using PBW or VWP for

cleaning, follow the instructions on the packet, rinse off with hot water, then sanitise with Starsan following the instructions on the packet. You can clean and sanitise your second bucket at this point. Bring the Starsan through the syphon to sanitise the inside. You can then keep your tools in this bucket of Starsan as you work later to keep them sanitary. Starsan leaves a foam behind. Do not rinse this off, or worry about it. It does not harm your beer in any way.

4. *Sparge:* When there is about 10 minutes left on your timer heat up 2.1l of water to 76°C in another pot. When your timer goes off, lift the grain bag out of the water and place in a sieve or colander over the large pot. Slowly pour the 2.1l of 76°C water over the grain bag to wash off any remaining sugars into your large pot. Remove the sieve / colander and turn the heat on under the pot.

5. *Boil:* When the pot begins a rolling boil add 5g of hops (bittering addition) and set a timer for 60 minutes. Boil with the top off. Many unwanted chemicals that would cause off flavours in the beer will leave in the steam.

6. *Flame out:* When your timer goes off, turn off your heat and add 5g Target hops (aroma addition). Leave the top off and wait 20-30 minutes for your brew to cool down to about 80°C or lower.

7. *Cooling:* Place the pot into a sink of water and wash your hands like a surgeon. It is from this point on that there is risk of infecting your brew. Take your sanitised spoon and stir your brew. Keep stirring and replacing the water in the sink as it gets warm. Add ice to the water in the sink to speed up this process. The idea here is to get your brew down to about 20°C while not letting it sit for any amount of time in the 25°C-40°C where pathogens could take hold. Watch out for splashing water from your sink bath into your pot as this water is not sterile and could ruin your brew.

8. *Transfer and pitch yeast:* Once your brew is close to 20°C syphon it over to your brew bucket. Open the packet of yeast and sprinkle

onto the top. No need to stir. The packet saysmit is for up to 25l, but use the whole packet. Nothing bad will come from using too much and if anything over pitching will ensure a good healthy ferment. Put on your lid and airlock. Fill airlock with a little diluted Starsan. Don't move your bucket for about 2 hours to allow the yeast to hydrate inside. Then move to a dark place where the temperature remains pretty constant. A cupboard is good, but it will throw out a lot of aromas you probably don't want your clothes to absorb. Where you keep your hoover or cleaning chemicals is good. Leave it there for four weeks.

9. *Bottling:* If possible put your bucket into a fridge 24 hours before bottling. If it is cool (but not freezing) outside you can also put your bucket outside. This will let most of the dead yeast drop to the bottom of your bucket. It is not necessary though. If you can't do this you will just have a bit of extra yeast in the bottle. Nothing to worry about.

   If this is your first brew, buy yourself enough screw top PET plastic bottles from your homebrew shop when ordering your ingredients. If you are a seasoned brewer, or are starting to take your brewing to the next level, you will already have a crown capper, glass bottles and crown caps. You can save a few pounds here by bottling in clear soda bottles, but be warned you will have to keep them in complete darkness as light reacts with the hops in your beer and spoils it. Do not bottle in wine or spirit bottles as these are not designed to hold carbonated beverages and may explode under the pressure.

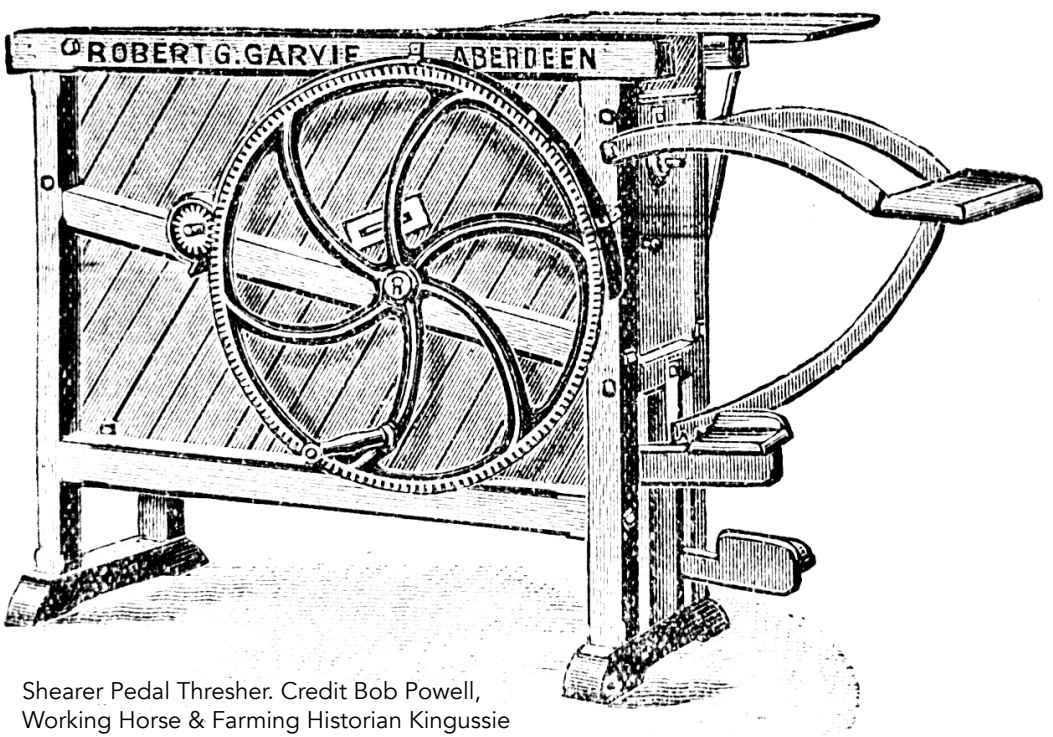
   Add half a teaspoon of sugar to cleaned (PBW or VWP) and sanitised (Starsan) 330ml bottles, or ¾ of a teaspoon to 500ml bottles.

   Syphon your brew with a cleaned and sanitised syphon into your cleaned and sanitised second bucket leaving the dead yeast at the bottom behind. It is best to place to end of the syphon at the bottom of the bucket you are transferring to avoid splashing. Adding oxygen by splashing may result in off flavours.

   Then syphon your clean brew into your clean bottles where you have added your sugar. You can squeeze the syphon shut in-between

bottles, but it will most likely get messy do this over a basin or a large pot to catch drips.. Cap them and place back into a dark place for four weeks.

After four weeks in the bottle your bere beers will be ready to enjoy. Put in the fridge for 24 hours before opening and enjoy with friends.



Shearer Pedal Thresher. Credit Bob Powell, Working Horse & Farming Historian Kingussie


#BAKE

Bere Pancakes

by Rosy Gray

Makes about 12

Ingredients

- 180g Beremeal
- 60g plain flour
- 5g baking powder
- Pinch salt
- 20g melted butter
- 260g milk
- 30g sugar

Method

1. Mix the dry ingredients together
2. Heat a frying pan or griddle and melt the butter
3. Then add the milk and melted butter to the dry mix, whisk thoroughly
4. Spoon mix onto hot pan, when bubbles become visible in top, flip them over
5. Couple minutes on that side, then slip them onto a plate and under some jam.

“For the fullest experience, first cycle to Barony Mill, collect some Bere and have these for breakfast over looking the Brough of Birsay, as the wild Atlantic waves crash over the causeway. Otherwise it’s also possible to source Bere Barley elsewhere. ”

Cynhelir y digwyddiad fel cydweithrediad rhwng Rhaglen Sofraniaeth Hadau Sefydliad Gaia a Grawn Cyffredin.

Tha sinne airson ath-bheothachadh a thoirt air. Tha an tachartas seo ga ruith mar chompàirteachas eadar an Seed Sovereignty Programme aig Bunait Gaia, agus Common Grains.

This event is being run as a collaboration between The Gaia Foundation's Seed Sovereignty Programme and Common Grains.

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