

## **Breed Improvement**

### **What is going to be good for the Highland breed ?**

*By Dr. Stephan Janz*

*Bringing out the Champion bull at a prestigious show is widely held as the finest pinnacle of achievement. To have many “bull-mothers” (\*) in an excellent fold of Highland cattle is considered evidence of quality, and every buyer of a prized heifer has in mind the super-bulls, which will soon be bred from this cracking good animal.*

*Not only in Germany is it the bull, that has widely come to be considered the role model for the Highland breed and whenever speeches are hailing progress in breeding or lamenting about the lack of it, invariably they culminate in a statement, which – it must be feared – is becoming the last word in breeding circles: “The bull is half of the herd.”*

*As a pure statement of fact, this sentence is as incontrovertible as it is banal. But when this statement is (as if by sleight of hand, without us actually realizing it right away) promoted as a credo and breeding programme, when the breeding perspective narrows its focus on the super-bull and when, as a consequence, on the female side the breeding target is the cow as a prospective bull-mother, then one must suspect that a concept of breeding has become current, which is problematic for the Highland breed.*

*In the following article I would like to elaborate on what I believe to be problematic. First though, essential to recognise is: For good reason the traditional principal figure of the Highland breed has always been the functional cow and in general she will be far from the coveted show-ring winner in appearance.*

## **I. Preliminary Remarks**

### **Highland Cattle are a beef breed**

The distinction between dairy cattle and beef cattle is well established in Germany. Over many generations the main use made of cattle – for either milk or meat production – has dominated their process of selection so exclusively as to cause a genetically fixed specialisation. We know that for any cattle breeder it is an either-or decision: efforts for higher milk yield lead to a lower beef performance and vice-versa. Top productivity levels simultaneously in both yields is not possible.

With some justification we count Highland Cattle among the breeds of beef cattle because since at least the 1800's they have been bred for the beef market.

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(\*) “Bull-mother” is a technical term of the German herdbook, where both bulls and cows can rise through the hierarchy of the herdbook by a system of visual assessments by herdbook inspectors: bull approvals and cow inspections. The criteria are: breed character, muscular conformation and structural correctness and a cow has to be well above average in these points to be classified as an “elite cow/bull-mother”, the female top category of the herdbook. The same goes for bulls with one additional point: a bull is only eligible for the top section of the herdbook, if he is out of a “bull-mother” and sired by an approved “elite bull”.

Whether in an organised herdbook system or not, the term “bull-mother” very aptly sums up a school of thinking, that goes far beyond the German herdbook, a bull centered way of thinking, that is the main contention underpinning this article.

## **Highland Cattle are an extensive breed**

Also well established is the distinction between so-called intensive and extensive breeds. The specialist intensive beef breeds, on the one hand, have been bred up from the original multi-purpose domestic cattle breeds through continuous selection according to the leading criterion “high and early meat yield under optimum feeding and husbandry conditions”. The extensive specialists on the other hand are not so much the product of purposeful breeding efforts as the outcome of centuries of adaptation primarily to extreme climatic conditions, allied of course to husbandry and feeding systems - anachronistic leftovers, one might say, from a distant past, long before modern systematic cattle breeding started. The decisive criterion for allocating a breed to either the intensive or extensive category should not be the actual husbandry condition, but essentially the manner in which the animals react to respective husbandry conditions: under feedlot conditions Charolais will flesh up fast, whereas Highland Cattle will become hopelessly obese. Traditional Highland Cattle can, however, thrive under harsh conditions where intensive breeds will hardly survive, and where even other extensive specialists need extra care.

## **Highland Cattle are a female breed**

Not so well established in Germany is the distinction between “terminal sire breeds” and “female breeds”, yet it is this distinction which best illuminates what is so special about Highland Cattle and what makes them a potentially economic viability even today.

Unlike Germany, Britain has a long tradition of systematic crossbreeding (\*\*), where the term “terminal sire” is applied to the bull in a crossbreeding programme devised to deliver an end product animal which has optimum fast maturity and high weight gain. The primary consideration with this end product in both sexes is not longevity, not superior mothering abilities, nor a particularly high milk yield. The primary consideration is, that the cross-bred calves, under optimum conditions, should reach an impressive slaughter weight as rapidly as possible.

While the terminal sire, i.e. a bull that belongs to a breed that has long since been optimised for these masculine beefy characteristics, stands at the end of this crossbreeding chain, at the start of this chain there is a cow that belongs to a “female breed”. With this cow the primary consideration is, that she is capable of performing in a way, that most other cows can not:

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(\*\*) Crossbreeding: the squaring of the circle.

The traditional programme of crossbreeding in Scotland involves a Highland cow and a Shorthorn/White Shorthorn bull. The F1 bull calves/bullocks are quite a bit stronger and flesh more easily as compared with the pure Highland calves and they can still be raised extensively on fairly poor ground. The F1 heifers will later become the ubiquitous Scottish hill cows, which in terms of hardiness and mothering abilities are not inferior to Highland cows. These cows can then be crossed with a continental terminal sire, a Limousin bull for example, and can produce a modern marketable end product, still on a fairly extensive basis to start with. An alternative could be a Highland/Shorthorn X Simmental to produce a big strong milky cow, which in turn will then need better pastures in order to make full use of her productive capabilities. This cow can then be crossed with any heavy terminal sire.

Carried along by hybrid vigour this chain of crossbreeding can almost achieve the squaring of the circle within only three or four generations: use of the extreme habitat Scottish Highlands/Islands for intensive beef production.

One essential indisputable prerequisite for crossbreeding obviously is pure breeding. The other prerequisite for maximising hybrid vigour is a genetic distance between the breeds involved. It is pointless to cross Limousins with Charolais or Highland Cattle with Galloways, because they are genetically specialised in the same field.

that is, to give birth to and wean a healthy calf year after year under adverse climatic conditions, on a habitat, that does not otherwise lend itself to sustainable agricultural use. This cow must be hardy and lightfooted, she must have a superior food conversion capability for poor roughage in order to produce milk for her calf and to keep up her own condition and a successful pregnancy at the same time. She has to be long-lived in order to keep costs for replacements low. And all these “female” qualities have to be genetically fixed attributes.

### **Highland Cattle are Specialists**

Holstein-Friesians give the most milk, Charolais are the heaviest cattle, Blonde d'Aquitaine are specialists for difficult calvings and caesareans, Eringer are specialised in cow-fights and Spanish bulls are specialists for the corrida.

Highland Cattle are also specialists: specialists in productivity despite persistent wet, cold and windy weather, despite rough and steep, boggy and stony ground, despite grazing poor pastures, heather, marshland, moorland.

A truly silly advertising slogan of the Highland Cattle Society in the 1970s seemingly ignoring their breed's exceptional specialist qualities ran: “Highland Cattle are versatile “, suggesting that Highland Cattle can adapt to almost any climate, feeding and husbandry regime and thrive and perform everywhere. Highland Cattle are precisely not an ideal allrounder and, to be honest, on most sites and habitats in Germany just about any cross- cow can do as well as a Highland cow or even better.

### **Digression:**

**“The breed must be suited to the climate or it will not thrive” (W.Youatt)**

So far these are no more than truisms, one might object. What have they to do with the main subject? Indeed these are truisms, but truisms are mental staple diet, a wise springboard for breeding policies, and not to be scorned. I shall come to the core matter in due course.

As for the truisms: the observation, that Highland Cattle are extensive beef cattle and specialists for Scottish weather and landscape, cannot be emphasised enough. Who ever has had the opportunity to experience the steep, stony, boggy impassibility of a Highland glen, who ever has been looking for shelter from cold rain, driven on to the shores and hills of the western coasts by the whiplashes of a winter gale, who ever has seriously become aware how short the vegetation period is, how poor the rough grazing on the hills is and how difficult it can be to bring in enough decent winter feed even with today's efficient harvesting technology, who ever truly realises – from a cattle breeder's perspective - the impact of these conditions, will properly judge for himself to what extent the first main proposition of cattle breeding “The breed must be suited to the climate and the habitat” continues to hold true for Highland Cattle. Only a breed of cattle that has the woolly insulating undercoat plus the long rainproof overcoat of the Highland breed can survive persistent wet cold. Only a breed of cattle, that is able to make optimum use of the short vegetation period in order to lay down fat deposits (admittedly nowadays an undesirable carcass quality) can survive and actually thrive here. Genes controlling heavily muscled early maturity are not useful for survival here, but genes promoting longevity and hardiness are. It is not the highest possible final weight of the adult animal which serves the optimal adaptation to this location, but lifelong agility on four able legs. Here it is not the potential for high daily weight gains, that ensures survival, thriving and

regular breeding, but rather the superior potential for efficient conversion of poor roughage and this potential has a genetic disposition as well.

I earnestly appeal to readers at this point to accept and appreciate the truisms as profoundly relevant, elementary and important facts about this breed.

The next sentence is no truism, but a wellfounded worry:

### **Highland Cattle are threatened by extinction**

Over 100 years ago the exodus of Highland Cattle into a worldwide diaspora was well under way, in large numbers particularly during the 1970s and 1980s. Highland Cattle have been cast upon the lush gardens of South England and the rich marshes of North Germany, the barren plains down-under, North American prairies and South American Andes. Some have remained in Scotland.

For over 100 years Highland Cattle in many parts of the world have not needed to call on the specific survival skills that once shaped the breed. It is inconceivable to me that, given the totality of changes the Highland breed has been exposed to over the last century – different climates, winter feeding, animal welfare, veterinary schemes, hobby breeding, show biz and not least of all various efforts to breed the animals into large mainstream beef production – such circumstances collectively should not in effect have worked as a massiv unregulated re-breeding program.

There is hardly a meeting of breeders, where shop talk does not include such topics as difficult births, weak calves, unmotherly cows, problems with fertility, poor udders, untimely arthritis and bad feet.

It is not with regard to the size of the purebred herdbook population globally that the breed is endangered. It is the fading away of constitutional characteristics along with the likely erosion of genetic integrity that is cause for worry. Talking about a threat of extinction is meant to be more than just a provocatively overstated paraphrase heading. A magnificent showy long haired and horned animal lacking the original functional specialisms of the breed will not help to perpetuate the core characteristics of that race.

What is meant by “Breed Improvement” is, in this respect, on today’s agenda absolutely.

## **II. Breed Improvement – A Retrospective**

### **Advancement or endangerment of the Highland breed ?**

“Cattle breeding was”, according to A.R.Mackay in his article about the history of the breed, “an art almost unknown in the Highlands” in the early times. This was to change, when well over two hundred years ago many Scottish farmers set out purposefully to “improve” their livestock. “Improvement” (\*\*\*) became the fashionable word amongst the “progressive”

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(\*\*\*) The term "Improvement" was given to the often reckless and radical efforts with which the "progressive" landowners and protagonists of the new Science of Agriculture applied the latest theories and executed the logic

landowners and agriculturalists in the second half of the 18<sup>th</sup> century. The Industrial Revolution in England incurred dramatic socio-economic changes which impacted on urban and rural Scotland too. About the same time equally dramatic changes fuelled by rapid spread of new knowledge from the science of agriculture, the invention of farm machinery, and the needs of the British urban population explosion, were most evident in Scotland. There was increased agricultural production through “improvements”, improvement of land utilisation by drainage, fencing, crop rotation, fertilizing; regular winterfeeding of livestock, introduction of turnips and potatoes, improvement of in-by grazing by sowing of better grasses and the applying of lime; (military) roads were built, steamboat traffic flourished, and later railways were constructed.

As far as cattle breeding was concerned, it was only now, that purposeful selection and mating of the best with the best breeding stock was systematically employed. Up until this time Highland Cattle did not exist as one formally defined breed, but as a multiplicity of fairly different local landraces each with their regional name, but readily identifiable and collectively understood to be “crodh dubh”, black cattle. In 1831 the English veterinarian and agricultural journalist W. Youatt published his book about “Cattle – Their Breeds, Management and Diseases” in which he dedicated an extensive chapter to the variants of this breed. He describes what efforts had been made during the last sixty years to increase the productivity of the stock at hand by “improvements”. These improvements on the one hand were improvements of husbandry conditions in the broadest sense. On the other hand purposeful breeding strategies had been established: on the Western Islands and along the coast of Argyll the farmers were convinced, “that no other breed of cattle will thrive on these islands and that kyloes could not possibly be improved by being crossed with others” (W. Youatt) and here it was a matter of careful selection and mating of the best specimens of the native stock. West Highland bulls, he writes, were introduced to the mainland Highlands from the islands and the west coast in order to improve the local herds. At the same time extensive experiments in crossbreeding were made – predominantly on the central and lowland mainland – and for this purpose bulls of various English breeds were introduced. Depending on breeds and local conditions some of these crosses were successful, others not. Even entire herds of English breeds were imported. However these could not withstand the Scottish climate and were consequently either abandoned or “toughened up” by crossing with a Highland bull.

Throughout the 19th century some landowners had embraced with such zeal “agricultural improvement” ( i.e. more yield = more income) that they cleared cattle from hill grazings which were then overstocked with non-native sheep breeds. When income from sheep failed they overstocked with red deer. They did not bring back the environmentally friendly Crodh Dubh.

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of a new national economy: the England of the early Industrial Revolution needed vast amounts of wool and meat for both the population explosion and the supplies for the substantial English Navy. The traditional subsistence economy of Highland Scotland could no longer adequately supply the southern demand. Landowners of Highland Estates, many resident in England and many former Lairds, considered the faster yield from large-scale sheep ranching would answer the market demand better and more profitably than had the cattle breeding economy. Accordingly they cleared their land of people and cattle and brought in southern sheep and shepherds. This, on top of the banning of everything reminiscent of the Highland cultural identity after 1745, permanently changed the Highlands.

These "Clearances" to make way for sheep were inextricably linked with infrastructural agricultural "improvements", but these for some meant death, starvation, imprisonment, expulsion or emigration for others. The slowly manifested and longterm environmental damage caused by the powerful landowning "Improvers" is still being assessed.

The results of these so called “improvements” towards the end of the 19<sup>th</sup> century were:

1. The huge population of native cattle throughout Highland Scotland and the Islands had largely been replaced by sheep.
2. The cross-bred Scottish “hill cow” – which in some way always traces back to Highland Cattle – had become the standard animal in Scottish beef production.
3. The remaining true Highland Cattle – there was no herdbook until 1885 – had declined in numbers to such an extent, that even the taken-for-granted Highland basis for crossbreeding schemes was threatened. These Highland Cattle, however, had changed enormously: the small rugged starved beasts, that early travellers had seen on their southbound droves and described as being “of the size of Lincolnshire calves” (A.R.Mackay) had been replaced with carefully bred, better fed animals and had become more or less the cattle that we know today. It was only in 1884 that the Highland Cattle Society was founded, and that by inviting for herdbook registration those contemporary cattle which met the newly established criteria, the first formal steps to consolidate the breed as such and protect it from genetic dilution were taken. (\*\*\*\*)

### **III. Breed Improvement Today**

**“Always ask: Is what I propose to do going to be good for the breed?” (Gordon Kohl)**

The adverse conditions in which this hardy breed evolved do not even remotely exist here in Germany today. Not in terms of the economy, the husbandry, the climate and environmental habitat of Scotland 200 years ago.

Breed improvement was then, unequivocally, a means to increase levels of productivity, the relative uselessness of other breeds of cattle in the challenging Scottish environment having become obvious.

Completely unclear now however, and indeed currently controversial, is what we here today seek to improve in the Highland breed and what we currently must address.

Our situation can, with few exceptions, be broadly summarised as follows:

- We are hobby-breeders. We breed Highland Cattle because we want to breed these particular animals, not because we have to in order to make the best use of marginal land with the best suited breed of cattle.
- We are not farmers, we are not meat producers in the true professional sense. For some of us marketing our beef works well, because of great personal efforts and

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(\*\*\*\*) “Highland Cattle are one of the oldest breeds of cattle and have virtually been unchanged since times immemorial.” This is a lovingly cherished myth, a fiction, that may not have been strictly true, even at the time of registrations for the first two volumes of the herdbook. And after the foundation of the herdbook there were still many herds, small and large, whose owners disagreed with the newly devised and limiting “breed standards”. They bred for commercial reasons, not for representation and not for breed conservation. These folds saw agricultural ups and downs, further infrastructural development and two world wars, some of their stock undoubtedly were traditionally pure-bred, others quite likely had seen the occasional use of a Shorthorn or other bull. It was in the 1980s with the (export) boom that it became economically attractive to register even the commercial Highland Cattle. The process of genetic consolidation that had begun in 1884, therefore, could now be said to have been more or less completed, but certainly not without significant change since “times immemorial”.

ingenuity, it works well because of the exotic bonus of the breed and it works well for relatively small numbers in a niche market.

- Our herds are small.
- Breeding-related decisions are substantially and primarily based upon visual assessment of the animals' external appearance by herdbook inspectors, show judges and the breeders themselves.
- Success as a breeder is to a very large extent measured in term of success at shows.
- Small in numbers, but impossible to ignore are breeders who, in Germany as well, see the future for our breed in the determined use of modern breeding technologies in order to bring Highland Cattle on a fast track towards a higher performing modern beef breed.

### **Traditional Highland Cattle - Forward to the Roots**

In my opinion the task for us in Germany in the 21<sup>st</sup> century from a breeding point of view can only be to delay with the highest degree of sense and intelligence what I have above described as a massive unintentional re-breeding process, and attempt possibly to correct and reverse this process here and there and to use modern breeding methods and technology in the service of this intended outcome. The programme – if we want to call this breeding philosophy a programme – “Traditional Highland Cattle – Forward to the Roots” is a breeding programme that to a large extent plays out in the minds of the breeders. It results from insight and understanding and modest acceptance of what the breed basically is and from the individual breeders' honesty and “keen eye”. A sense of appropriateness and a grip on adequate proportions play a more important role than tape measures, scales, computer programmes and a set of rules and regulations. Gordon “Crop” Kohl, the Grand Old Man of the Canadian Highland Cattle Society, once summed it up in a reflective speech to American Highland breeders: “ To breed Highland Cattle , then, is to accept an individual share of responsibility for the future. Always ask: Is what I propose to do going to be good for the breed?”

Based on what has been said so far, I would like to try to outline elements and cornerstones of such a programme of breeding performance. It is more a school of thought that I offer for your contemplation than a set of rules and instruction.

### **Take It Seriously !**

For all of us, no matter how small our herds are, it starts with taking seriously the truisms that I have set out about our breed. If we do not for example take seriously that the capacity of our cattle to become obese, when continuously offered inappropriately (for Highland Cattle) rich feed (feedlot conditions or lush meadows for most of the year), has something to do with their superior adaptation to wet and cold climate and to a short vegetation period, then we fail to realise what irreparable harm we would do, were we to use ultrasound and DNA analysis as a matter of course in order to identify for selection only those individual animals which can take intensive feeding to yield beef without becoming obese: we would breed away some of this particular constituent characteristic of the breed - hardiness.

### **Accept It !**

The next step would be to accept these facts as they are. We have a breed that does not lend itself to mainstream beef-production. And no one forces us to breed this particular breed of cattle. It is as simple as that.

## **Set Priorities !**

A performance breeding programme that promotes the core competencies of our breed to the full is in principle not difficult and as an example Don Badger, a Canadian breeder from Québec, has described his operation in this journal (i.e. the German Highland Cattle Journal) in 2001: The herd is out on marginal land around the year, with hard winters, short summers. Any cow that does not take to the bull or miscarries, any cow that needs assistance in calving, does not accept her calf, does not have enough milk or has an unfunctional udder – any such cow will be culled. Any calf that is not vital, does not suckle or needs help otherwise to get started – any such calf goes to the slaughter in due time. Any animal with udder problems, bad feet or joints will be culled. Only after radical elimination of all animals, which in earlier times would have had no chance of productive survival, the attention then focusses on the positive selection of the animals which perform best: best in terms of milk yield ( weaning weight of the calf) and best in terms of post weaning weight gain. Only the top third stays in the breeding programme. In other words, apply to domesticated species the laws of the wild - "survival of the fittest".

This kind of breeding, which unambiguously sets the priority on the maternal characteristics and performance is technically not demanding, but it does require a certain size of herd as a precondition and a well functioning, financially rewarding outlet for the produced beef. And it does require a financial interest in – I should better say: financial dependance on – the success of the overall operation because the intrinsic force of a straightforward, financially rewarding commercial operation sometimes offers a more reliable guideline than moral principles that allow a degree of arbitrary decisions.

## **The Functional Cow**

Let us turn to the cows in our herds and assess them dispassionately: let us issue plus-points for each pregnancy and for calving intervals of up to one year, for every problem-free calving, for every calf born and weaned healthy, for a sound udder for good feet and walking, for a long productive life and for a good temperament.

Let us issue minus-points for each abortion, for each miscarriage, for each calving problem requiring intervention, for each mastitis and bad udder, for bad feet and arthritis, for early cullings of parents/siblings for any one of these reasons, and for a bad temper. Let us make sure that these problems are not related to any faults in our husbandry, mineral deficiency or such like.

With this mode of evaluation we move towards an initial assessment of the functionality of our cows and for this no more is needed than detailed and precise notes on every animal. Above all other performance criteria, such as size and weight and such as visual assessment by herdbook inspectors and success in the show ring, the functionality of our cows should be our top criterion for selection and culling in our programme.

## **Milk Yield**

We may often find that our most functional cows are not the most eye catching animals in the field, but rather unspectacular beasts. We will often find that these unobtrusive animals regularly wean a well grown calf and are able to put more into their calves than some of the more visually impressive cows in the herd. If that is so – most reliably this can be assessed when with a short calving period most calves are approximately the same age – then this is a



strong indicator of a superior milk yield of the dam and the next strong argument for which of our functional cows should remain in the herd and whose offspring should particularly attract our attention in the next selection round.

### **Individual Postweaning Performance**

After we have – at least in our minds – culled our least functional cows and their offspring we will follow our better cows best grown calves after weaning in order to assess their individual performance. By the end of the following year we will then be able to make a good judgement, if among those animals that had reflected a superior maternal milk yield at weaning there are now some that have also shown a superior postweaning performance. (Arithmetical adjustments may have to be made in order to be able to compare weights of calves of different ages and of calves out of cows of different ages. There are models how to do these calculations.)

### **External Assessment**

We have now identified the best performing offspring of the milkiest of our flawlessly functional cows and these are the animals that, provided they stand up to a visual external examination for structural correctness and breed character, should get their chance at breeding and be kept in the herd as replacements for any cow that has to go.

I am quite deliberately bringing up the selection criterion “external assessment” at this point only. I do understand and share the joy of every breeder at - in our eyes – a particularly beautiful animal, but beauty must be the icing on the cake and not the main event and not the basis of our breeding decisions.

As far as the visual assessment of structural correctness is concerned: if, an animal is descended from longlived functional lines on both sides, it is likely to be structurally sound and even in this point visual assesment should not necessarily override valuable knowledge about the forebears of one’s livestock. For example my eldest cow, now aged 20 years, fit on her feet and leading her 16<sup>th</sup> good calf was classified as just above average in the point “structural correctness”, when she was inspected as a young cow some 15 years ago, but my faith in her likely heritage has been proved justified.

*(What has been said about inspections and external assessment is also true for success or failure in the show ring. If our heifer, that we have selected for replacement in our own fold as described above turns out to be a showy beast and wins a trophy then this is a true First Prize and we can be very happy and proud. But self-confident breeding, based around functional performance, means that we stick by this animal even if she does not win any rosettes. Conversely: A Champion Heifer can not show her functional qualities and there are sadly too many examples of beginners who have taken a nose dive after indiscriminate buying of expensive show winners in the expectation of establishing a spectacular fold of Highland Cattle in this way.*

*Biological functionality and visual assessment may indeed be very controversial. In spite of this a show success is still very widely considered a main criterion of good quality among many breeders and we still do not differentiate clearly enough between show success and breeding value.)*

## **We Need Cow Fathers, Not Bull Mothers**

Up until now the discussion has been explicitly about cows and heifers. But of course the same breeding principles apply to the selection of a stock bull. If we accept the observation that “Highland Cattle are a female breed” then this amounts to the slightly aphoristical motto “Female Bulls Wanted !”.

Obviously this does not mean that a bull should look like a cow, but it means, that in the case of the bull, too, the exterior must never be the sole criterion for selection decisions, as, for example, the female functionality with which we are concerned cannot be observed by looking at the bull. So it is all the more important – because “the bull is half of the herd” – to consider the above mentioned priorities of female functionality in the sire's forebears when we decide against castrating a promising bull calf in order to bring him out as a stock bull.

A bull calf that we think might have stock bull potential **must** be descended from exceptionally functional parental lineage. Compromises here are not appropriate. For many reasons previously stated the German herdbook categorisation of particular cows as “bull mothers” is not helpful to our programme, whereas the recently introduced category of “elite cows”, which specifies a minimum number of calvings at intervals of less than a year, is. If our main breeding focus is to be the functional Highland cow then what we need in our herds is a “cow father” rather than “bull mothers”.

A bull calf that we think might have stock bull potential **must** be significantly superior to his age peers in the herd at weaning and he **must** go on like this after weaning, therefore demonstrating superior milk yield of his dam as well as superior individual potential for growth and weight gain.

It is one of the practised inconsistencies in Highland breeding – not only in Germany – that even where the concept of the importance for the breed of female functionality is accepted, this often turns out to be hardly more than lip-service, because as far as bulls are concerned it is again and again the visible, measurable terminal-sire characteristics which are aimed for. And when this practice is criticised the customary objection runs: “Where will this lead? If we carry on with these heavy giants so untypical of the breed, we will soon end up with Highlanders that look like Charolais and with all the problems that would entail.” I do not consider this – always somewhat illhumoured, morose – objection to be relevant because it is quite beside the point. The point is not size and weight as such. The growth in size and weight might indeed endanger the breed, when and if – as is alltooften the case - the invisible functional substructure is missing. But if we nail the breed down, strictly and unflaggingly, to the traditional functional female qualities on one hand, then the bulls will not grow into Charolais-skies on the other. And whenever along this line of breeding we do get an exceptionally well grown bull calf of spectacular appearance, then indeed we have made true and valid progress.

## **A Bull Is A Bonus**

This pithy slogan belongs in every Highland breeders treasure chest. I got it from the herdsman of a commercial Hebridean Highland fold and it sums up my message brilliantly: the widely practised “breeding of bulls”, where terminal sire qualities are obsessively looked for, where these qualities are found and fostered and fed out, where one show cracker after the other is expertly brought out, all this is not what breeding Highland Cattle is about. In a herd

which has been consistently bred for maternal characteristics a visually outstanding bull calf is a rare occurrence – much rarer than the large number of young bulls on the market would lead us to expect. When such a bull does arrive you rub your eyes in disbelief, cry “gosh!” and relish a bonus for your own fold.

**“You Can’t Breed Good Highland Cattle by Computer.” (Jack Ramsay, quoted by Û.Cochrane)**

Having quoted most of my favourite aphorisms I would like to finish with my top favourite: “You can’t breed good Highland Cattle by computer “ – and not by weighing and measuring your cattle again and again. Good Highland breeding is not merely a matter of technology and biotechnology (although these have a role to play and I have no problem whatsoever with the use of such aids). Good Highland breeding – and that is the credo and message of this article – proceeds solely on the basis of an understanding and acceptance of that which makes the Highland breed what it is, what marks it out, what makes it special and what differentiates it from other breeds. And whatever technical finesse is employed, the fundamental breeding resources are honesty, consistency and patience.

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***Epilogue***

*This essay is a translation and revised version of an article that was published in the German Highland Breeders Journal 2008 (Vol. 13). For many years I had felt uneasy with certain attitudes, debates and developments specifically in the German Highland breeders community. This uneasiness has prompted me to think about it some more and eventually to write down my thoughts, addressing primarily my German fellow breeders.*

*All credit for this translation and my sincere thanks go to Ûna Cochrane. She initiated it and her thoughtful comments and tireless proof reading were immensely helpful.*

*I dedicate this essay and give it as a present to my friends Minty and Aeneas Mackay who have shown and taught me for many years on their farm Ardalanish on Mull how the Highland breed is suited to the land if one respects the land as well as the breed.*