Cattle: and the Ord irrigation project

W M. Nunn

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A GREAT deal has been said and written about the Kimberley Cattle Industry in recent years—about its short-comings, its potential and the national importance of developing this potential—and about how the Ord Irrigation Project should be integrated with it to produce more beef.

Opponents of the Ord Scheme hold that it has nothing to offer in the way of encouragement for the major industry of the region and that effort should be channelled toward improving cattle outturn rather than producing irrigation crops.

Many of those eager to support the scheme contend that it has everything and, in a surge of wishful thinking, argue that fodder and by-product meals will quickly solve all the cattle industry's problems.

This article sets out a considered opinion as to what in the long term should take...
place, assuming that the nation decides to develop its Northern potential.

The present cattle industry

Stations are about 1,000,000 acres each in area. There are 30 of these in the Ord geographical region, and most of them are held by large concerns controlling groups of such leases.

During the "wet" the pastures—principally annual and perennial grasses—make good growth and, while green, are highly nutritious. By August they have dried out and have been selectively grazed to the point where they are of very low nutritive value indeed.

Improvements amount to a horse paddock, a bullock paddock and two or three branding yards at different points on the run. Bulls run with the herd throughout the year and stock roam at will over hundreds of unfenced square miles.

Mustering takes place between April and September. Bullocks are separated from the mob and moved to meatworks. Steers requiring another year to finish, go into the bullock paddock to be ready in hand for early delivery next season. The cow and calf herd is moved to one of the branding yards where calves are branded before the herd is released again to the wide-open general range.

As bulls run with the herd the full year, conceptions can occur in any month. Calves born in the early months of the year have a good chance of surviving and of making good growth while their mothers are on green feed.

However, it is common for the cow to conceive at the start of the green feed period and to drop her calf during the dry months, September–November. This is the period of high mortality among breeders and calves.

Limitations of the industry

Obviously several factors severely limit efficiency:

- The absence of a store cattle market. In all developed cattle areas it is usual for some regions or some properties to be devoted to breeding, while others buy store cattle from the breeder stations and produce beef for sale to meatworks.

Until a few years ago all cattle turned off from the Ord region had to walk varying distances up to 300 miles to the meatworks and were put onto the road at four and five years of age. This meant that the output each year was only a small proportion of the herd which had to be maintained on the property—in many cases as low as 10 per cent.

With road transport recently introduced, three-year-old deliveries are now possible but a high proportion of them are in only store condition and would be capable of producing considerably more beef if a topping-up period nearer the works were possible.

- Seasonal variation in pasture status. The level of nutrition from September to December each year is so low as to constitute only a subsistence diet for dry stock.

Steers grow poor on it but pick up again quickly on green feed during the wet season.

Heifers and cows which calve during the second half of the year have great difficulty in lactation and the losses of calves, and of the mothers too, are considerable.

- Lack of control of the breeding cycle. As bulls are run with the herd throughout the year a heifer may conceive in any month, according to age and development. If its calf is dropped onto green feed it may thrive and, as no provision is made for weaning, the calf may still be sucking the mother when the dry season arrives and for as long then as the mother manages to continue lactation.

Just what happens to the breeding cycle of the cow under these conditions is not at all clear but it is probable that an extended period of lactation anoestrus...
would delay subsequent conception, at least until the next wet season produced a return to satisfactory nutritive levels. In this case the next calf would be born in the dry months toward the end of the calendar year.

One thing is quite certain—that losses are high both in cows and calves, where births occur during this period.

**Improvement trends**

There has been a considerable move towards improving leases over recent years. The old system of absentee owners leaving the work of running the station to managers trained in the art of hunting cattle with a team of native riders, is giving way to one where companies with capital available are looking for investment opportunities and planning improvement programmes.

This has been brought about by better beef prices and improving roads and communications. A number of properties have changed hands in recent years.

On most stations the immediate need is for fencing, leading to a subdivision which will enable control of the mating herd.

Quite a lot of investigation has been carried out—mostly in Queensland—concerning wastage in the large cattle herds of northern Australia. In a survey of 53 Queensland cattle stations north of the 20th parallel from 1962 to 1964, Howard (1966) found that cattle losses amounted to 44.4 per cent of the number branded each year and that 72.5 per cent of the females branded died on the property. On better-managed stations, with control of breeding and weaning but without any improvement of pastures, there was a 47 per cent increase in turn-off, with total losses reduced to 23.6 per cent. of brandings and female losses to 34.7 per cent. of the females branded.

The three basic practices that reduce the death toll are

- Controlled mating
- Weaning
- Methodical culling of females for age.

By mating in April for a calf drop in January-February and weaning calves at six months of age, the heavy annual losses in the October to December period can be avoided.

This type of improvement can be expected to take place throughout the Kimberley cattle areas. It will not be a spectacular improvement but it will take place just as surely as it is taking place now in northern Queensland and has done in the past in more settled areas further south.

**Improvement of pastures**

Only a small section of the Ord region can be considered to offer prospects for the introduction of improved pasture species under natural rainfall. A few thousand acres of sandy loam soils in the near vicinity of the Ord Irrigation area, with 30 in. annual rainfall, can be expected to grow Townsville lucerne and perhaps a few hundred thousand acres of Cockatoo Sands (similar to the Florina Sands now growing it in the Territory) can be counted on also, in the long term. Townsville lucerne now thrives on lighter soils with rainfall above 35 in. Another legume, *Dolichos biflorus* could prove equally valuable. We have had good stands of both these species in Kimberley trials under rainfalls of 30 in. and even 25 in. where the incidence has been favourable.

Workers in Queensland are already selecting strains for drier areas and there is little doubt that, in time, we can count on a legume for the lighter soil types close by the black soil irrigation areas.

If this seems an optimistic outlook one can recall the history of subterranean clover in Western Australia. Only a short while back it was a pasture for 20 in. rainfalls and better. We now have strains performing well in the 15 in. and 12 in. belts.

Even relatively small areas of Townsville lucerne could mean a great deal to a station property in making good the nutritional deficiency in the October-December period. Townsville lucerne is not relished by stock in the green state but is highly palatable and highly nutritious in the dry state. A paddock held in reserve therefore, offers the ideal and most economical solution to the October-December low in the nutritional status of the natural pastures.
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Journal of Agriculture, Vol 8 No 10 1967
Potential for nearby stations

Stations near the irrigation farms enjoy 30 in. of rain annually, and, although it may vary considerably in incidence, there is seldom a season which could be called a drought or compared in that respect with the dry, short seasons which are common further inland. They still have the annual period of low nutrition from October to December to contend with.

Townsville lucerne can be expected to grow on sections at least of the run and with the major Ord reservoir serving an increasing area of irrigation farm land, they are placed so that at any time they consider it desirable as a safeguard, or profitable as an economic measure, they will be able to place an order for grains, fodders or by-product meals without being faced at the same time with prohibitive transport costs. These products are of course already being produced and will be produced in increasing quantities for sale on the world’s markets. The nearby station will be able to buy at almost the farm-gate equivalent of the world market level.

What the local leaseholder does buy may not be of much consequence to the irrigation project. It may be very varied, according to season and the opportunities it offers in the various aspects of cattle grazing. The point is that the grazier close to the project can have control of his feed requirements from start to finish. While the lessee 100 miles south is dependent upon season, with stock dying on the property for want of feed to save them or an avenue to dispose of them, the station near the farms and near the meatworks, if it is properly developed, can be always in command of the situation and able to avail itself of seasonal and market opportunities.

Two stage beef production

As noted above, one of the severe limitations of the present beef industry lies in the fact that cattle are bred and raised to slaughter ages on the one property, with no outlet for store stock for those able to produce only stores and no opportunity for purchase of stores by those who could put beef onto them.

Most of the Kimberley hinterland is suitable for breeding purposes but incapable of finishing beasts to proper slaughter weights. Its output should be sold as stores at young ages, freeing carrying capacity for greater numbers of breeders.

Were it not for the quarantine measures taken to prevent the spread of contagious bovine pleuro pneumonia to our southwest agricultural areas, it is likely that Kimberley would have been developed as a Stage 1 breeding area supplying stores to temperate area farms. If the contagious bovine pleuro pneumonia risk could be cleared there would be interests keen to organise such movement even now.

However, we have meatworks functioning at Wyndham, Derby and Broome, and a two-stage beef production potential in both East and West Kimberley.

Those stations placed immediately alongside the Kununurra irrigation farms are ideally placed for making the first real move toward this re-orientation. Unfortunately some of them have, up till now, shown more interest in the possibility of procuring rights to irrigation land than in improving cattle and range management over their extensive leases. It has been amply shown by investigations at Kimberley Research Station and elsewhere, that grazing cattle on permanent pastures on high cost irrigation land could not compete economically with cash crop production on these farms.

When the companies concerned have learned to accept this and to look to the availability of purchased fodders and a future for Townsville lucerne, then they may see the value in developing and improving their control over stock to the point of managing programmes of beef production to put meat onto the thousands of store cattle that will be available to them once the offer is made.

The outer stations could turn out twice the number of steers they do now if they could quit them a year earlier. For many it will be two years earlier and a still greater increase. Also, these animals are often-as-not at starvation point from October to December on their home stations, and a maintenance diet to carry them successfully into the wet season is all that would be necessary to ensure good returns from slaughter the following year.
**Forms of supplementation**

A great deal of data has been put together by research in cattle areas throughout the world relating to feeding for beef production. Much of the prime beef marketed in the United States is produced in feed-lots supplying complete dry feed rations to both steers and heifers—sometimes after a season on range pastures but often directly after weaning from their range mothers.

This industry is practical only where grains and other basic feed materials are readily available at low cost and prices for beef from a nearby consumer market are relatively high. Even then, for the feed-lot to be financially successful, efficiency must be high in all phases and turnover very high indeed.

Although basic feed materials will be available there is no early prospect for a local consumer demand to bring about high prices for prime beef and our thinking must therefore be confined to the export market as it is today, with our beef going at prices which enable it to sell competitively to consumers across the world.

Supplements must therefore be directed to specific purposes and at this stage it is not possible to blueprint a design that would apply on all properties and be capable of economic analysis. A protein supplement is indicated as an urgent requirement for breeders but the need can be minimised by control of mating to bring late pregnancy and lactation into safe grazing season. A short term maintenance diet at the end of a poor season can prevent deaths on the run and ensure meatworks returns following the wet season.

A supplement for weaners under a controlled weaning system will avoid losses of both breeders and calves and bring the calves to maturity earlier.

All these phases of supplementation will be varied according to season and the scope of operations. The developed station can employ them as required and it is not necessary to visualise things like feed-lot fattening and the grazing of irrigated pastures in order to justify the conviction that the Ord Irrigation Project will bring about a very significant increase in beef production and put balance into the organisation of the cattle industry.

Feeds available will include, of course, protein meals and grains. Hay can be produced according to demand and though permanent irrigated pastures are out, there will be stubbles from grain crops for which grazing will no doubt eventually be organised.

**Lessees of the nearby stations will need to start the ball rolling.** If they do not there could be a good case for Government action to subdivide or to impose special development clauses in special regions shown to be capable of development to a scale of semi-intensive grazing.
Sorghum stubbles

The grazing of stubbles has already been mentioned but deserves closer contemplation by anyone honestly trying to visualise the significance of a sorghum industry in this respect.

Sorghum, on present assessment of yields and world prices, offers appreciably better returns to farmers than does cotton. When the reservoir is built, sorghum will not be just a support crop. It will become a major industry with areas probably well in excess of those devoted to cotton.

Fifty thousand acres of sorghum stubble could support 50,000 head of cattle for a period of months when range feeds are poor. This means an immensely expanded carrying capacity in areas close to the Wyndham meatworks and an opportunity to extend considerably the present short term killing season.

It will, of course, be a long time before such feed supplies are effectively used and a problem will be to find sufficient cattle.

A considerable improvement will be required over the whole cattle-raising region but it is suggested that this will happen and that the Ord irrigation area, with its vast potential for feed production, will be the major influence in bringing about the necessary development.

THE FUTURE DESIGN

1. Outer stations

The outer stations will develop as breeder stations along the lines demonstrated so convincingly in Queensland. With control of mating and weaning, calves will be dropped in January-February, weaned at six months and sent off to the beef producing areas at 18 months.

As progress is made with herd control it can be expected that some at least will introduce bulls of tropical breeds so that a proportion of the stores coming into the fattening areas will bring hybrid vigour and a much greater beef-producing potential than that of today's herds.

2. Semi-intensive areas

The semi-intensive stations will no doubt continue to run a breeder herd but they will have the capacity also to trade in stores and to put beef onto the stores available from the outer stations.

In contemplating this phase it is important to get away from the type of thinking that requires the value of beef produced to be balanced against the cost of purchased feed required to produce that beef. These stations, properly developed, can be expected to produce the beef basically from their own grazing capacity. The availability of cheap supplements simply provides the safeguard to their operations—the guarantee against drought losses and the opportunity to cash in on other people's poor season difficulties.

The Department of Agriculture is only now setting out to develop its first Range Cattle Research Station and there has been very little investigation done which can be quoted to support the views set out. The following two field trials are worth a brief reference however, as directly bearing on the discussion:

Breeder supplementation at Argyle Station, October-December, 1964

Six hundred cows were pregnancy diagnosed to obtain 292 individuals expected to calve during the trial period. These were divided into two groups, one receiving a supplement of crushed cottonseed at 2 1/2 lb. per day. Paddocking was on predominantly mitchell grass country at 20 acres per animal.

Results were as follows:

<table>
<thead>
<tr>
<th>Supplemented</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cows at 23/9/64</td>
<td>146</td>
</tr>
<tr>
<td>Cows at 14/1/65</td>
<td>146</td>
</tr>
<tr>
<td>Calves at 22/2/65</td>
<td>85</td>
</tr>
<tr>
<td>Cows still to calve 22/2/65</td>
<td>20</td>
</tr>
</tbody>
</table>

A developed station could handle this type of supplementation to avoid the sort of heavy losses that occurred in the control group.

Beef production demonstration—Broome, 1961-1962

A demonstration trial was conducted by Cattle Adviser G. A. Smith, at Yeeda Station in West Kimberley, to ascertain the live-weight gain by steers over one wet season.

Twenty steers from the open range were weighed into a river frontage grass paddock in September, 1961, and the only
form of supplementation was a balanced mineral mixture of phosphorus, copper and cobalt fed through the water to make good local deficiencies. Weighed in July, 1962, the steers recorded an average gain of 240 lb. per head.

A gain of 240 lb. per head without any supplementary feed costs, even at the same rates per lb. in inward and outward transactions, leaves a worthwhile margin for profit by the Stage 2 operator.

This order of weight gain is consistent with data obtained by Norman and Arndt at Katherine, where wet-season grazing on native pastures produced increases of over 200 lb. in two-and three-year-old cattle and gains of up to 300 lb. in aged, large-framed beasts.

No doubt economists opposed to northern development can prove by faultless budget that the forms of management referred to will be impossibly uneconomic. Others, in their enthusiasm for the Ord, may prove handsome dividends to operators at both stages, and a wonderful immediate future for both the irrigation project and the cattle industry.

This article proposes to leave it as an opinion that this is the way development will take place. Time and future prices in a later decade, together with varying beef outputs according to management, will determine the level of profits.

Meanwhile it is extremely desirable that the Department of Agriculture should be equipped to handle some effective trials ahead of commercial development to demonstrate—
- That a properly-managed Stage 1 property running breeders and selling store cattle can pay.
- That a semi-intensive grazing property putting beef on these stores nearer the meatworks, can be an economic proposition.

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