

New Zealand Society of Animal Production online archive

This paper is from the New Zealand Society for Animal Production online archive. NZSAP holds a regular annual conference in June or July each year for the presentation of technical and applied topics in animal production. NZSAP plays an important role as a forum fostering research in all areas of animal production including production systems, nutrition, meat science, animal welfare, wool science, animal breeding and genetics.

An invitation is extended to all those involved in the field of animal production to apply for membership of the New Zealand Society of Animal Production at our website www.nzsap.org.nz

[View All Proceedings](#)

[Next Conference](#)

[Join NZSAP](#)

The New Zealand Society of Animal Production in publishing the conference proceedings is engaged in disseminating information, not rendering professional advice or services. The views expressed herein do not necessarily represent the views of the New Zealand Society of Animal Production and the New Zealand Society of Animal Production expressly disclaims any form of liability with respect to anything done or omitted to be done in reliance upon the contents of these proceedings.

This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](http://creativecommons.org/licenses/by-nc-nd/4.0/).



You are free to:

Share— copy and redistribute the material in any medium or format

Under the following terms:

Attribution — You must give [appropriate credit](#), provide a link to the license, and [indicate if changes were made](#). You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

NonCommercial — You may not use the material for [commercial purposes](#).

NoDerivatives — If you [remix, transform, or build upon](#) the material, you may not distribute the modified material.

<http://creativecommons.org.nz/licences/licences-explained/>

Some Economic Aspects of New Zealand's Livestock Industry

W. N. PATON, Department of Agriculture, Wellington.

World Market Trends and Prospects:

IN taking stock of the economics of our livestock industry it is most useful to speculate on probable market trends. Should dire danger lie ahead for our industry we must prepare ourselves accordingly and be possessed of the ready means to adjust, modify and make complete changes, if need be, in effectively combating competition. We must aim to retain as great a flexibility as possible in our industry without unduly hampering specialisation in order that major changes may be rapidly implemented as the need may demand.

The growing competition from synthetics is the main bogey these days employed to frighten us. So let us look at this one for a few minutes. Nature is a rather efficient elaborator of very complex products, and manufacturers find it too difficult and mostly too costly to turn out synthetic products which closely resemble the natural product. They spend no end of money trying to convince us that their product does not need to be so like the natural one, that it has some superior qualities, and that its collective properties are just as desirable. It is significant up to the present at least that the bulk of the use of synthetic textiles competitive with wool is in conjunction with wool. Moreover, wool has increased in value relative to our other main export primary products.

Margarine is another bogey employed to frighten us. It is only the "table-roll" and incidentally rather expensive article, often containing 10 per cent of butter that constitutes any real threat. Sales are greatest in grades of lower quality (inclusive of cooking-fat substitutes) where there is no possible confusion with butter. As the bulk of the raw materials used in the manufacture of margarine come from Africa and the East they are likely to become progressively dearer in price with the awakening of the peoples of these continents and their strivings for higher standards of living. Whale oil is likely to be of diminishing quantity, if not in the absolute then certainly relative to a rapidly increasing world population.

With high standards of living relatively more beef, pork, and/or bacon and poultry tend to be eaten. Lamb of a high enough standard comes into the group, but it is well out of the picture in the United States and Canada. We can expect strengthening demands for beef, which unfortunately we do not appear so well suited to produce efficiently as in the case of fat lamb, and it is this problem with which we must grapple without delay. Sterilised, evaporated and dried milk of improved types and in special containers, quick-frozen meats done up in plastic wrappers in retail cuts and quantities are developments likely to expand rapidly. Export butter and cheese needs to be packaged directly for the retail trade also, and more attention given to different types, flavours, etc. We are too indifferent as to what happens to much of our cheese, veal, etc. It is too great a temptation to food blenders and processors to use these products because they are reasonably priced, dependable, neutral flavoured, and consequently ideal as a main base for their products, such as blended butter, processed cheese, cheese-spread, fish and meat pastes, etc. These are trends likely to continue and develop in the United Kingdom and European markets. The British market is not likely to be a sufficiently expanding one because of lack of, or poor prospects for popu-

lation growth and for rising standards of living. To obtain increased returns from this market we must develop and foster fancy lines, and if need be enter upon the role of middleman and perhaps even that of retailer. We must look towards the East also, and endeavour to gain a footing and good share of trade as it develops with the rise in importance of Eastern countries. The movement may be slow as yet, but at a certain stage in the fairly near future the increase in momentum will become rapid. With rising standards of living which will undoubtedly come in the East, our trading opportunities should be good provided we look ahead and prepare accordingly. Such trade will undoubtedly call for modified or different products, and it is these changes we need to foresee as early as we may. We will need to take their goods, manufactured or unmanufactured, in exchange for our own. The export future of our primary industries could be undermined by a wrong attitude to Eastern goods. We should be thinking now of what item of theirs will best suit our case and internal economy. Here is a pointer and challenge to our secondary industries!

THE POSITION OF THE INDUSTRY IN NEW ZEALAND

Although food constitutes one of the prime necessities of life, unlike most other consumption goods, the quantitative rate of consumption per head has a fairly rigid upper limit, and the effect of this on a progressively increasing standard of living is that food ranks progressively less in importance than formerly in the family budget. High pressure salesmanship, extensive advertising of intensive type, hire-purchase methods, mass-production methods, and the harnessing of science in every conceivable manner in secondary industry, together with competition from synthetic products, all tend to weaken the relative position of primary producers. Because of the perishability of their products, and that production cannot conveniently be increased or decreased in sympathy with changes in demand, farmers are in a weaker selling position than secondary industry producers. Except in special circumstances primary products are sold for what is offered, and not what is asked for them as applies to secondary industry goods.

One gains the impression also that export trade in secondary products is more profitable than for primary products. At least it appears that a country exporting mainly manufactured goods can become a creditor nation more readily than one mainly devoted to the exporting of primary produce, although the latter may rank as an exceptionally efficient producer.

Because of heavy annual rainfall, the marked undulating nature of most of our country, the light and porous nature of extensive areas of our soils affected by volcanic showers, heavy export of primary produce, mineral deficiencies, and much highly intensive farming, fertiliser requirements in New Zealand are heavier than for most other countries, and this calls for great care if we are to avoid nutritional imbalance in our livestock.

On the other hand, we possess two important natural advantages with which to offset our disadvantages; namely equable temperatures and an ample and well distributed seasonal rainfall. The course of successful farming in New Zealand lies in exploiting these advantages to the fullest extent feasible, at the same time progressively increasing the fertility of our soils and maintaining it at as high a level as is compatible with the difficulties of intensive livestock farming.

Facets of the Profitable Farming Aspect:

In our case, where agriculture's contribution to the national economy is a major one, the profitability of farming needs to be considered at the national level as well as that of the individual. We have

applied a lot of effort in endeavouring to raise the efficiency of farmers individually and collectively, and in this we must have been reasonably successful to come out top in Colin Clark's international comparison of farm-labour efficiency. Our attempts at national and regional development planning, both rural and urban, have not shown the application and the progress that they warrant. Nor do we appear to be sufficiently appreciative of the direct and indirect effects on primary industry of the rate of growth and the course of the secondary and tertiary industry groups. Can we afford the luxury of letting things take their own course? Our overall standard of living depends on the overall efficiency of the nation. To what extent are increases in efficiency in one major industrial group being offset, or lowered overall nationally by expansion in another major group of lower overall efficiency? This aspect is one for considerable concern when we reflect for a moment on the fact that the most efficient industrial group is faced with progressively decreasing numerical representation in the moulding of national policy!

Don't let there be any misunderstanding of my meaning in the points raised. It is not a question of relative diligence of one section as compared with another, but of the difficulty of other groups commanding resources at all comparable in potential with the great natural advantages for grassland livestock farming which we possess in New Zealand. But just as in our primary industry we exploit our natural advantages by confining our efforts to avenues of greatest strength, so should other groups recognise the advantages, not only to themselves but also to the nation as a whole, of adopting a similar course. The high average standard of our workers in intelligence and education, health, initiative and resourcefulness, adaptability, technical aptitude, etc., constitutes collectively a resource of great potential were we to channel it to greatest advantage, where mass production methods, large industrial units, cheap local minerals, and low wage rates do not rank as major prerequisites. Switzerland is a good example of manufacturing achievements by capitalising on the quality of its labour force. Integration of the secondary industry with the primary industries group is another avenue of strength which is capable of further development with considerable advantage to both groups.

In the primary industries group we could do more to exploit avenues of potential strength and advance the efficiency of our efforts. One of our weaknesses is the existence of far too wide a variation in individual farm efficiency for all types of farming and for various resource conditions throughout the country. A lot of it represents in terms of present available knowledge and enlightenment very poor utilisation.

The Importance of Good Methods:

If we are to make good progress in efficient livestock production we must employ the best methods. By this I mean the way in which we set about our tasks whether we be farmers or research workers. The methods we employ should be the most effective ones, the ones likely to be productive of the most progress for effort made.

At the outset we have to admit that the advancement of all knowledge is due to a very simple and elementary process, namely comparison. We describe things by saying in what way they are similar to or different from other things. In order to be more precise about similarities and differences we have to measure things and measure them as accurately as the need may demand. We observe, measure, record and analyse, and the more we refine these processes the more scientific are our methods.

We should spend more time bringing scientific information together, and make the best use of the resulting frameworks of knowledge. The periodic table of the elements is a good example, and it should be of considerable value to our research chemists and others working on the role of various elements in the nutrition of plants and animals.

Measurement of Efficiency:

One of the most comprehensive and informative ways of studying the economics of farming is per medium of farm management surveys and cost of production investigations. Many must wonder why it is so very little appears in print on such work, but for some considerable time the position has been most awkward. Government policy in price fixing and price control has been the difficulty. Government has rarely given permission for the publishing of the many cost investigations that have been made since the policy was more generally adopted. What little has been released has mostly been abridged, and has given very little more than the bare bones as it were. Even where the responsibility for the fixing of prices has been handed over to the industry concerned is the position any happier concerning the publishing of details. So long as this general position obtains there is little hope of substantial public enlightenment through these channels of economic investigation. Nor is that altogether a bad thing, because cost investigations soon date through changes in input prices or in the purchasing power of money, unless a comprehensive quantitative base to enable re-costing to be done was provided for in the investigations. Cost investigation technique is necessarily involved at times in overcoming intrinsic difficulties of the case, and farmers' data do not always prove adequate in meeting requirements, and results make heavy reading as bulletins, articles, etc.

The position is considerably simplified by employing efficiency measures, which not only take the place of costings, for if we are really efficient our efforts will be profitable, but give us physical details directly relating to our main productive and management factors. Mostly it is a matter of measuring efficiency of production, but it may be important to deal also with the efficiency of harvesting, processing, storage, marketing, etc. Not only may it be to our advantage to measure efficiency in an overall form as between the beginning and ends of any of the main stages mentioned, but also within a stage. Always we measure efficiency by expressing output in terms of input for the stage or part-stage concerned. In the livestock industry we are concerned with all stages of exploitation or conversion peculiar to agriculture—namely from soil to pasture (and/or crops) from pasture to livestock, and from livestock to livestock products. We need to be efficient at all stages and by employing physical units as efficiency measures we are able to give to these various stages of conversion the attention they deserve.

Progress in Measurement Methods:

In taking stock of the employment of efficiency measures we find that this has been greatest in the case of the dairy industry. This is to be expected seeing that we have in our universally adopted unit of a pound of butterfat, a readily ascertainable and widely applicable unit. Progress was speeded up as soon as herd-testing returns began to be correlated with management, soil and pasture, disease aspects, etc., as well as to the cow herself. This represented great advance in method, and it is rather surprising that it took so long to gain recognition. However, too much emphasis for too long has been devoted to "per head" production without regard for differences in food consumption. Ways and means of providing a practical

method of correcting for this deficiency will undoubtedly eventuate ere very long. It is wrapped up in terms of liveweight of cow, grazing days, etc. The setting up of approximate factors for feed capacity for all main classes of stock would be helpful in the meantime. Many very useful types of broad studies on the performance of our grazing lands would be opened up by such a device.

In the case of the sheep industry, because of inherent difficulties, progress in employment of efficiency measures has been little and slow. The two main products, meat and wool, are rather incompatible to joint measurement. The setting up of widely acceptable standards for stock grazing equivalents by type and class of sheep should proceed at once. A record of grazing days, together with numbers grazed adjusted to a standard livestock unit, will give a measure of pasture production per acre, which taken again with meat and wool production will give efficiency of utilisation. With experience and research these equivalents can be improved and additional factors worked out to standardise for other variants of moment. The joint representation of meat and wool production can be resolved through adopting equivalents based on long-term price relationships, varied to the necessary extent for type of product in each case.

With pigs fluctuating in popularity with economic need, interest in efficiency recording has fluctuated also, and support for sow recording is not what it should be.

In the case of the poultry industry it is only in recent years that efficiency recording has been introduced under the Poultry Improvement Plan. Support for the Breeders' Laying Trials has to be whipped up each year or patronage would flag, and the Poultry Efficiency Recording Scheme had to be closed down for lack of sufficient support after running five seasons.

Advantageous Changes for the Future:

It has long been my considered opinion that we have not given adequate recognition of what part size of animal plays in efficiency of utilisation of our pastures. Everything seems to point to the smaller animal of a species as being a more efficient producer than the larger one, other things being equal. Here in New Zealand in the dairy industry it would appear that a preference in this respect is recognised, but it is questionable, I believe, if we have gone far enough in that direction.

The heavier and larger breeds require flatter and heavier land to do justice to their capabilities. To have stock produce satisfactorily, they must be reasonably well fed and that is not so easily done on pasture alone at all periods of the year. The last qualification is important. Supplementation of pasture in other countries is generally of very much greater moment than in New Zealand, and in many countries lengthy stall feeding of cattle in winter is involved. The effect of size is not so apparent under Northern Hemisphere conditions, and I believe it is because of this we have rather missed the significance of it in our case.

Where our pasture is too light for cattle we turn to sheep, but what odd-sized units we employ—the cattle beast on the one hand and the sheep on the other! Before having to revert to sheep there are pasture conditions which would suit smaller cattle, or some other type of animal of intermediate feed requirement which is capable of good economic returns for its particular product. Also, the smaller the animal the more prolific it is in general, and the more rapidly can

numbers be built up, and genetic studies and programmes carried out. I believe we should devote a great deal more thought in this direction and commence probing the possibilities.

Although barriers due to various limiting factors of soil type, etc., are being progressively overcome, and the fertility of such soils raised to reasonable levels, when once we thought they were hopeless more or less for all time, yet intensification remains our main hope of increased production for the future.

As I pointed out earlier, it is vital to our overall standard of living that the most efficient economic group should have sufficient voice in the formulation of future national policy to safeguard the position. We must see to it that development only follows avenues of substantial potential strength. Shortsighted protectionism allowed to drift far enough could be the cause of much distress for the nation under adverse circumstances. I believe we have reached a stage where we should take stock of where we are bound, and with what purpose, and with what prospects. We cannot afford to ignore such aspects in national policy.

We must look to the Antarctic and exploit and link products from there as well as from the East with our own to greatest advantage. There are many possibilities—whale oil, vitamins, whale meat, minerals, etc. If margarine should prove too competitive, why should we not have a foot in the other fellow's camp by making and exporting margarine ourselves? We must discover what low-priced products will suit to form the bulk of our exports to the East—goods that will fill a ship, so that our better profit margin luxury and semi-luxury goods can go along with the other lines. But we must take Eastern goods and/or materials in return, a full ship at a time, in order that we may have the benefit of direct trade, which in the past we have failed to put on a permanent basis. With rise in economic status the East with its vast population will exercise increasing weight in world affairs, and ultimately the Pacific is destined to become the hub of the world. We, as a nation within that orbit, should look to our destiny.

Discussion

COLONEL DURRANT: We have a grading system for our lambs and producers are paid a premium for the first grade. In spite of this, the third grade lambs on to-day's London market are making top prices. Would the speaker care to comment on this situation?

MR. PATON: Consumer discrimination of quality in primary products is not always sensitive enough where quality is high, as has been instanced in the case of our butter. Something of this sort is probably operating in connexion with our lamb. Also, what suits as a basis of grading at our end may not necessarily suit so well the purposes of the trade in London.

MR. SMALLFIELD: Mr. Paton raised an important point when he stressed the need for efficiency measurements for different types of farms and I am sorry he has not elaborated on that point. Mr. Paton also expresses the view that increased production in the future will come from intensification of farming. I presume he means intensification of our highly developed pasture lands. I rather think our main increase in the immediate future will come from our poorer pasture lands as a result of aerial topdressing, oversowing and other well-established techniques.

MR. PATON: To discuss in detail efficiency measurement of our grazing lands for different types of farms would require appreciable space. As regards increased production in the future, I agree with Mr. Smallfield. (My use of the word "intensification" was intended to cover the present total occupied area at all levels of exploitation from extensive to intensive, as distinct from increases due to new land being brought into production.)

MR. CORNWELL: The speaker has mentioned that before reverting to sheep we should consider other more suitable types of animals. What animal has he in mind?

MR. PATON: I was stressing smaller cattle rather than other animals and I feel that is one for the specialists to go into—hybridisation may provide the answer. As regards other animals I had nothing particular in mind but there are such animals as alpacas, vicunas, etc. to be considered.

DR. FILMER: Mr. Paton has questioned our ability to produce beef as efficiently as fat lamb. Studies at Ruakura have indicated that this is not so. Beef can be produced as efficiently but because of the higher price per lb. for meat lamb production is more profitable.

MR. PATON: Beef production at Ruakura would be a good deal more efficient than in the case of the industry as a whole. As Dr. Filmer points out, price is a factor effecting the position.

MR. NALSON: I am concerned at the suggestion that we should use cost surveys and farm management surveys as means of measuring efficiency. Experience in Britain suggests that such surveys are by no means as useful as at one time thought.

MR. PATON: Farming in Britain is very mixed in character as typified in the average farm, as compared with our specialised grassland-based sheep and dairy farming. It is for this reason that cost surveys and farm management surveys encounter difficulty in Britain in dealing effectively with single enterprises.

MR. BONNER: Why does Mr. Paton think that the prospects for an increase in the population or in the standard of living of the people are poor?

MR. PATON: Many specialists of high authority are of that opinion.

MR. MONTGOMERY: Has anything been done to study labour in the woolshed at shearing time and also the type of sheds?

MR. PATON: No, but it could be dealt with in conjunction with the Wool Section of the Department if need be. I am not aware of any serious shortcomings in that respect.

DR. LOW: I agree entirely about the danger of farm cost surveys. In any case, these are used mainly for price fixing and are relatively unimportant. Much more emphasis should be placed on farm budgeting of alternatives that face the farmer and in helping him to decide which are the most profitable.

MR. PATON: I agree that budgeting of alternatives is useful, but in my opinion specialised efficiency measures are most effective.