

1933.
NEW ZEALAND.

WOOL-IMPROVEMENT IN THE DOMINION

(REPORT ON).

STATEMENT BY THE PRIME MINISTER (RIGHT HON. G. W. FORBES).

Laid on the Table of the House of Representatives by Leave.

THE catastrophic fall in prices of our agricultural exports during the past five years has caused widespread distress in the Dominion. In no product, however, has the fall been so pronounced as in wool. For four successive seasons Dominion woolgrowers have been forced to market their production under extremely unfavourable market conditions, the return received being well under the cost of production. Under these conditions there must be a serious danger of deterioration, and the Government is seriously concerned at the prices realized, particularly for crossbred wool. While New Zealand hopes and expects the future to bring forth a better day for the sheep-farming business and a higher standard of living for rural people, yet the promptness with which this hope and expectation will be realized will be determined by the constructive influences at work, particularly those within the industry itself.

The following tables are taken from Dalgety's *Wool Circular*, 1933-34 :—

WOOLS MARKETED IN THE DOMINION.

	Number of Bales sold.	Average per Pound. d.	Gross Value. £
1928-29	575,632	14·88	12,217,382
1929-30	425,902	8·55	5,130,897
1930-31	445,196	5·67	3,558,587
1931-32	475,135	5·26	3,571,776
1932-33	576,224	5·16	4,327,692

The vicissitudes of the pastoral industry are strikingly exemplified by a study of the above table, which reveals a descent within five years from the pinnacle of prosperity to the lowest level of modern times. It is probably unkind to go further back and refer to the boom year of 1924-25, when the Dominion clip averaged £29 5s. per bale and 20·21d. per pound.

Comparison of the North and South Island sales is as under :—

	North Island.	South Island.
1932-33.		
Bales sold	315,080	261,144
Average per bale	£6 6s. 9d.	£8 18s. 6d.
Average per pound	4·21d.	6·36d.
Weight per bale	361 lb.	337 lb.

The North Island average of 4·21d. per pound is the lowest in the history of Dominion auction sales since 1900-1.

The price-difference between the ordinary crossbred wool of the North Island and the half-bred, or Corriedale, wool of the South Island is far greater than the relative figures given above owing to the large amount of crossbred wool grown in the South Island and included in the above average figure. The total amount of "Merino" plus "half-bred" plus "Corriedale" wool in the South Island is approximately 30 per cent. of the total, and in the North Island about 1 per cent.

The growing, handling, and marketing of wool is admittedly a very complex problem, the reason for this being the great variation which occurs in diameter, length of fibre, grease content, &c., not only in different fleeces but within the same fleece. Unlike many of our other primary products, wool does not lend itself to simple standardization which would form a suitable basis of marketing,

and, at the same time, standards on which improvement can be gauged by the producer, as, for example, in the case of butter. Moreover, there is little definite knowledge available to the woolgrower, apart from opinions, often based on insufficient fact, as to the lines along which improvement in quality and price realization can be planned with sufficient certainty to enable him to devise with more exactness the lines along which long-range scheme of improvement should be directed with safety. At the present time each breeder “pursues his own fancy,” with the resultant varied condition, particularly as regards our North Island wool.

The question naturally arises as to the extent to which the fall in prices is the result of general world economic conditions or how much is due to a possible falling off in “quality” or change in demand as regards various types of wool. It may be mentioned here that “quality” has a special meaning when applied to wool, this meaning having arisen from the use of the term by the manufacturer. “Quality of wool” (that is, of a large group of fibres) expresses their average approximation to the desirable standards of response to manufacturing process to secure a particular manufactured product.

Unfortunately, there is a dearth of exact statistics to provide a complete answer to these questions. For instance, we have not readily available definite figures of the quantities of wool of various grades produced in the Dominion, or of the average prices realized for these grades, yet it is very definite that the fall in price has been most serious in the case of the coarser crossbred wools, which constitute the Dominion’s main production, than in the case of other varieties. This is exemplified by the following extract from the *Wool Intelligence Notes* of the Empire Marketing Board, No. 1 :—

	1909-13.	March, 1932.	March, 1933.
General commodities (Sauerbeck Index)	.. 100	105	96
Carpet wool .. .. .	.. 100	88	81
Merino wool .. .. .	.. 100	68	71
Crossbred wool .. .. .	.. 100	47	41

More recent sales show considerable improvement in prices of Merino and fine wools, but only slight increase on coarse and crossbred wools. Further, the term “crossbred” as used in the United Kingdom and also in Australia includes our “halfbred” and down wools: the index figure for what we in New Zealand term “crossbred wools” would therefore be appreciably lower than the figure given above.

We are naturally led to inquire as to whether this relative price-level of different classes of wool is likely to continue, and whether the situation calls for some definite effort towards improvement or possible change in type of wool which may be produced without detriment to the other and at present main source of income of most of our sheep-farmers—*i.e.*, the fat-lamb trade.

This subject is particularly worthy of study by the Dominion, because wool is the one major agricultural product which enters most into international trade: 50 per cent. of the world’s production being exported from the various countries of origin (95 per cent. in the case of New Zealand), and there is more likelihood of continued free marketing conditions in wool than for any other of our products. Moreover, in any alternation of land-utilization which may be forced upon us by threatened quota restrictions, there is a large proportion of the farm area of New Zealand (particularly the hill country) which, with our present knowledge, can only be effectively utilized for raising meat and wool. It would appear, therefore, that the sheep and wool industry is of paramount importance to the country’s future.

There has, undoubtedly, been a world trend towards the use of finer wool and lighter-weight clothing, which manufacturers have been able to produce with little, if any, decreased properties of warmth. While the grower naturally believes that wool is better value and more suitable for all purposes than cotton or artificial silk the consumer is increasingly aware that great strides have been made in the manipulation of these rival fibres. Again, the fabric manufacturers’ point of view is not an “all wool” view. His business is to make the type of cloth or hosiery, &c., for which he can find a market and, if by experiment with wool, in combination with cotton or artificial silk, he can explore new areas of demand he is not likely to keep to “all wool” products for the sake of loyalty to the woolgrower. **It is plain that any propaganda, standardization, or research to induce manufacturers and consumers to use more wool must**

Effect of Trade
Restriction.

Trends in use of
Various Types
of Wool.

be done by the producers of the raw material. This is so obvious that it is remarkable that there has been such a marked lack of co-operation between the woolgrower and wool-user. We in New Zealand are only aware, in a vague way, of the broad fields of utilization of our wools. We realize that relatively less and less is used for clothing; that much of the crossbred wool is used for moquettes and upholstery, &c., for which purposes several of the much advertised properties of wool are unnecessary; thus exposing this class of wool in particular to the competition of artificial substitutes when prices are high, but, as a wool-producing country, we are operating largely in the dark. From year to year the grower sends in his wool in the hope that it will find a profitable market. By force of long-established custom almost the only aid the grower receives is adverse criticism from those for whose purposes the wool is unsuitable. The various and regular complaints from Bradford exemplify this. The whole fault is not with the grower. Until quite recently the wool merchants in the manufacturing centres were of the opinion that it was not their business to tell the grower what types of wool to supply. They looked upon themselves as dealers whose sole task was to handle the wool as it came from the primary markets. The grave disadvantages of such a gap between user and producer need no emphasis, and one of the most urgent problems of the wool trade is to bridge that gap. During my visits to England in 1930 and 1933 I took the opportunity of discussing this aspect with manufacturers in England, and happily both merchants and manufacturers are now disposed to co-operate with woolgrowers in studying the influence of changes in the technique of manufacture, or in schedules of demand and changes in distribution of trade. Scientific research in producing and manufacturing countries has quickened the desire for closer working, but there is still a wide field to be examined.

Successful co-operation also implies reliable data upon which to base judgments and policies, and it is in the improvement of trade statistics that one of the larger problems of the wool industry is to be found. The situation has in part been met by the inauguration by the Empire Marketing Board of monthly "Wool Intelligence Notes," which it is understood are to be continued by the Imperial Economic Committee.

At the moment we can only guess at the trend of demands for wool and of the distribution of this demand between the various grades of wool. The following quotations bear on the question:—

DALGETY'S ANNUAL "WOOL REVIEW," 1932-33.

"According to an editorial writer in the *Textile Mercury and Argus* there is an increasing demand for finer wools compared with crossbreds in all forms of wearing-apparel, and this is having a big influence on the wool industry."

"Continental buyers have less orders for strong grades."

The following is an extract from *Index*, July, 1931—"The World's Staple Wools," by A. N. Shimmin:—

At the moment of greatest economic difficulty in production the century-old supremacy of wool is challenged by the increasing rivalry of other textile fibres and the changing habits of consumers. When wool clothing is dear, people naturally reduce their consumption. An increase of world population and the westernizing of dress in Eastern countries have operated to compensate growers and manufacturers in some degree, but wool is still exposed to the competition from artificial silk, in particular, and union fabrics of cotton and artificial silk. Initially, the question of cost turns consumers from wool to other fabrics, but there are several factors in the cross-competition of textile fibres. Attractiveness (colour and design), durability, lightness combined with warmth, are the principal items apart from cost. There can be no doubt that artificial silk made its successful entry into the textile world under the first heading. It made an instant appeal to a generation prepared for more lustrous dress than the typical fabrics made from wool. But having made that conquest, artificial silk must consolidate its gains or the consumer will tire of mere prettiness and demand durability and warmth in larger measure. Technological research is, therefore, the key to the situation. Believers in artificial silk are hard at work to establish its superiority in all the attributes demanded of a textile fibre. The measure of their success is the gauge of the woolgrower's and manufacturer's problem—for artificial silk is a synthetic fibre freed from the limitations of seasonal production by natural growth. Wool research is vital—both in primary markets (on such questions as breeding) and in manufacturing countries—to demonstrate that the clothing properties of the fibre are superior to those

of rayon. On the other flank the cotton industry is attacking with the contention that cotton is the most hygienic clothing in the world.

The changing habits of consumers are sometimes dictated by developments in fields far removed from textile activities. For example, in the United States the increased use of central-heating in homes and offices has brought about a demand for materials of thinner texture. Manufacturers catering for the men's trade have found that the cloths now in request are several ounces per yard lighter than those of former years. In the same country wool has had to give place in large measure to silk and rayon in the ladies' trade. The increased popularity of the saloon motor-car is another factor in demand for lighter-weight dress-goods. Add the influence of women's fashions in recent years, and it is not difficult to detect the source of a reduced demand for wool textile fabrics.

We must also take into the reckoning of the future of the wool trade the changed position of dress in family budgets. In all countries the home is much less the centre of social life than it was a generation or two ago. Income normally directed to expenditure on furnishings and clothes is now claimed by travel, sport, and entertainment. The acquisition of a motor-car, for example, may occur not infrequently at the expense of the consumers' wardrobe. To combat this redistribution of private incomes is difficult for all the textile industries, because the greater freedom of social life which we now enjoy has brought with it a decreasing regard for ceremonial and smartness in personal appearance, with a consequent lowering of the rate at which clothing is renewed.

In view of the vagaries of fashion and the subtle influence of income it is relevant to ask whether wool-textile research may not discover new uses for the wool fibre to compensate growers and manufacturers for the loss of trade from such causes as I have just indicated. The reports of the International Cotton Federation indicate that the cotton industry is experimenting along these lines by making cleavage cloths used in road building, bags and containers of all kinds, wall-papers and coverings. Technical problems are involved which lie beyond my field, but the suggestion confirms the feeling that the future of the wool industry is quite as closely bound up with technical research as with the mastery of economic difficulties.

Post-war changes in the distribution of wool-textile manufacture have served mainly to put new problems to the older textile countries in the search for international trade. Japan is making rapid strides in wool manufacture, and now imports nine or ten times the quantity of wool consumed in pre-war years. The result of this decided increase in the consumption of raw material has been a sharp falling-off in Japanese imports of semi-manufactured wool-goods and imports of cloth. Italy now imports three or four times as much wool as in pre-war days, and, in addition to supplying a good portion of the home market, has now built up an export trade in wool fabrics four times as large as her pre-war export. Changes of this character do not mean a net increase in world wool textile activity, because countries like Great Britain, France, Belgium, and Germany feel the effect of the displacement in the shape of reduced exports to Italy and Japan. In addition, competition for the neutral markets of the world is increased. The interesting point is that the newer countries are not able to proceed at once to the production of the highest quality goods. As the process of accommodation is completed it becomes increasingly clear that the strength of the older textile nations will lie in concentration upon these more expensive types of product. And thus we may visualize the next phase of the world's wool developments. The older countries will tend to feel increasingly the need for fine wools; the newer countries will be able in the main to meet their manufacturing needs with a supply of medium or crossbred types of wool. As the new countries expand the call will be for crossbred wools and the woolgrower will tend to specialize on the crossbred sheep because of its dual profitableness in wool and mutton. A decline in mutton consumption sufficient to increase substantially the relative value of wool seems out of the question. The meat-eating habits of peoples are, apparently, much more stable than their demands for clothes made of wool. It will be interesting to watch the developments of the next few years and to see whether advancing technique in fine-fabric production in the older countries can win back an allegiance to wool-goods large enough to warrant an increased supply of merino wools.

It is sometimes suggested that the hazards of wool production and manufacture might be eliminated by rationalization. But the small firm is typical of the industry throughout the world, and the keen individualism of the manufacturer does not take kindly to the idea of formal mergers or combines as the means of lowering costs. The fickleness of fashion is ever uppermost in the minds of those who handle or manufacture wool, and the small firm operating under the personal direction of its head is the most trusted unit in the pursuit of fashion. The aid of designers and fashion experts is sought, therefore, in attempts to anticipate the trends of fashion. New methods of marketing and advertising wool-goods are carefully canvassed. Foreign languages are studied to equip travellers for the task of exploring markets abroad, and it is realized that the personal contact of heads of businesses with customers overseas is an important factor in the expansion of trade. Everywhere it is now admitted that wool and wool-textiles may no longer be expected to sell on their merits alone. There is keen competition from alternative products, and material changes in social customs have weakened the affection of many consumers for wool-goods. When the more immediate problems of currency and prices have been solved the claims of wool will still need to be made secure by scientific research and closer co-operation between those who grow the wool and those who turn it into clothes for the people.

The world production of wool is of the order of 3,300 million pounds, or, on a clean wool basis, very roughly, 2,300 million pounds, and the amount entering international trade has not increased by more than 20 per cent. during the last twenty years. It might have been thought that with the pronounced falling prices of wool the competition of substitutes would have become more difficult, yet we have the following world figures for production of artificial fibre :—

					lb.
1913	..	..	..	..	27,000,000
1922	..	..	..	..	78,000,000
1927	..	..	..	..	270,000,000
1932	..	..	..	..	499,000,000

It will thus be seen that artificial fibres are a definite factor in the situation as regards demand for wool, and no reminder is needed of the relation of a decreased demand, which is out of all proportion to the relative effect on prices.

It is not necessary that we should be stamped by the competition of artificial fibres. The situation is summed up by Mr. W. Hunter, in an address to the Bradford Textile Society :—

It is probable that endeavour will be made to embody in the artificial fibre of the future the properties associated with those of wool rather than those of silk.

The main difficulty is to confer true elasticity upon such a fibre, and no simple derivative of cellulose is likely to possess this property in the required degree, although it may be possible ultimately to produce a fibre with crimp and felting power.

A new chemical basis, essentially different from that of present-day artificial silks, is necessary to obtain such elasticity.

It is therefore seen that, as yet, artificial wool has not arrived, and it is surely the business of the scientist in the wool industries to see that the position of the natural fibre in the textile market remains unassailable.

Science, as applied to wool-production and utilization, is, as yet, young, and has much prejudice to face and much to learn before it can attain its maximum usefulness. This is true of all the older industries in which there is already a vigorous practical art. The penetration of scientific methods into the tanning industry, for example, took a long time; similarly, the application of scientific methods to the dairying industry is of comparatively recent growth. The case is different with the newer industries, such as the electrical, artificial fibre, motor and radio industries, which have developed freely as straightforward applied sciences. In the older industries, the age of "scientific practice" has now definitely dawned, however.

With closer settlement and smaller holdings, there are less big farmers who can carry out the large-scale breeding practice to produce finer and more even wools with improved carcass. Moreover, even for large farmers producing a clip possibly superior to that of their smaller or less informed neighbours there is still the influence of the trend of the whole industry and the competition of substitute materials organized on a large industrial scale, with controlled production as regards both quantity and type. **Consequently some corporate and integrated action by the whole industry is necessary in both research and dissemination of reliable information to producers.**

The following extract from a report by Dr. S. G. Barker, Wool Industries Research Association, Torrington, Leeds, deals with this same point :—

History will probably label the last decade as the era of cellulose. This was an inevitable consequence following the War where nitro-cellulose and cellulose derivatives formed a large proportion of our munitions. Naturally, when it comes to beating "swords into ploughshares," &c., during peace-time, methods were sought for the utilization of the cellulose products which had been so prolifically produced during the war period.

Thus we find that rayon, cellulose films, imitation leather-cloth, and the like came into being as commercial entities, cellulose, with its many derivatives, being exploited in every possible direction.

If one-hundredth part of the money that has been spent on exploitation of cellulose had been devoted to research on methods for exploitation of wool there would have been a very different story to tell to-day.

We may now consider the question as to whether New Zealand wool has deteriorated or become less suitable for the general market. As has been stated above, exact statistics are not readily available. An analysis of the 1917-18 clip

Maintenance of
Quality.

was made by the Department of Imperial Government Supplies, and the following analysis is taken from them, as referring to fleece wool produced in the Dominion of 36's to 48-50's, hoggets inclusive :—

Grade.						Percentage of Total Wool. Per Cent.
AA	..	..	..	..	..	0.75
A	..	..	..	..	..	19.25
B	..	..	..	..	..	74.50
C	..	..	..	..	..	4.50
D	..	..	..	..	..	1.00

There are, unfortunately, no similar analyses to compare the position since 1918, but all the evidence seems to show that the position is definitely worse, and the figures seem to confirm the statement of the buyers that we are producing too much of inferior grade. Evidence on the question may be adduced from the trend of average prices for New Zealand's crossbred wool over the past twenty years, compared to the trend of prices of similar wools grown in overseas countries such as South America. To obtain an exact comparison, much investigation would be required owing to the many factors involved, but a study of the relative table given in Dalgety's *Annual Review*, 1933, page 135, is not reassuring :—

REPORT OF CHAIRMAN (W. T. HAMMOND), WELLINGTON WOOLBROKERS' ASSOCIATION,
1ST NOVEMBER, 1933.

I have been asked my opinion as to whether or not there has been any deterioration in the quality of North Island wool during the past few years.

At one time there were a considerable number of super clips coming in for sale in the various North Island centres, but nowadays the number of these has fallen very substantially, and it is only here and there that a really super clip is exhibited. The quantity of wool of a kempy and hairy nature catalogued has certainly grown during the past years, and if anything can be done which will improve the all-round quality of North Island clips this must certainly prove to be of great advantage to the growers.

It may possibly be of interest for the writer to mention that whilst he was in Invercargill a particular client who possessed a first-class lot of Romney ewes found that the wool was becoming stronger and more kempy every year. After consistent inquiry, we were able to supply him with fine-wool Romney rams, and the result of this was that the progeny showed marked improvement.

Working upon more improved lines than those outlined, we can visualize a very great improvement in the quality both of the wool and of the North Island sheep.

REPORT OF WOOL-VALUER FOR DALGETY AND Co., 31ST OCTOBER, 1933.

Overseas buyers who attend our Dominion sales have voiced the opinion that the North Island wools have gone back considerably, and that at times it is difficult to secure sufficient supplies of what is termed super spinning style Romneys. The chief defect in our wools is thinness of staple with a tendency to hairiness. The colour also is not nearly so good as was the case a few years back.

REPORT OF MR. A. E. MABIN, OF LEVIN AND Co., LTD., DATED 1ST NOVEMBER, 1933.

I have to give my opinion that, speaking generally, crossbred wools in the North Island are not what they were several years ago. Super crossbreds and high standard clips are becoming scarcer every year.

Several causes are assigned, but, whatever the cause or causes may be, there is no doubt that the quality of much of the crossbred wool now being produced is below the old-time standard.

EXTRACT FROM REPORT OF MESSRS. WRIGHT, STEPHENSON, AND Co., 1ST NOVEMBER, 1933.

Speaking generally, the wool-clip of the North Island as a whole has shown considerable deterioration during the past ten years. A smaller proportion of the total clip now consists of well-bred, well-grown sound wool of style and character.

At the same time, we consider that even off purely breeding and wool growing properties (as distinct from fattening and mixed farms) there is not now the same proportionate output of the higher grade wools, showing character, style, and brightness.

It is unnecessary at this stage to discuss in detail the factors responsible for this deterioration of the average crossbred wool, but they may be summarized as follows :—

- (1) Subdivision of properties, resulting in a multiplication of owners and clips: the latter showing, as a result of differing ideals, lack of standards as guidance, often a shortage of working capital, and, perhaps, on the average, less expert knowledge, considerable variation in style and grade, as compared with the large "even" lines of earlier days.

- (2) The unavoidable deterioration of the pastures on the poorer types of soil formation and the breeding policies often adopted in endeavours to counteract the consequent falling-off in the weights and grades of the clips.
- (3) The fat-lamb industry and the relative values of meat and wool which tend to concentrate attention on body conformation at the expense of wool.
- (4) A lack of appreciation of the finer points of breeding for wool.

In 1929 the Empire Marketing Board financed a visit to New Zealand of Dr. Nichols to discuss and report on methods of wool-improvement in the Dominion. Extracts from his report are as follows :—

It would seem that an educational system whereby the growers could have access to the latest information on scientific work conducted in other wool-producing countries should be established. There is a general feeling that rapid improvements could be made in the general standard of the clip if the defects in stock, preparation of wool, &c., could be pointed out to the breeders as a community ; this would involve, for early results, the instruction, preferably by demonstration, of the present generation of breeders. The question of the personnel of such a system is difficult. It is recognized that further information can only be obtained by further careful research, and it is suggested that both services would be handicapped if the research workers were called upon to conduct extensive lecture campaigns and demonstrations.

The establishment of a control institution of similar constitution to that of the Dairy Research Institution is contemplated, it being desirable that research on sheep-breeding should not be allied to or obscured in relation with educational institutions or programmes, and should be conducted in an organization with independent control of its experimental material. Such an organization would serve for co-ordination of effort as the depository of information, with definite powers of co-operation with bodies such as the British Research Association, and as the advisory nucleus in educational campaign.

Following on this report, the Research Department arranged to send Mr. D. J. Sidey, of Lincoln College, Home for a year to Leeds ; also 120 fleeces were collected from typical good breeders for information as to manufacturing uses. An extract from the report on the examination of these fleeces is as follows :—

Probably one of the most pleasing features of the examination from the point of view of the New Zealand wool-producer was that although some of the Romney and Corriedale wools showed marked irregularity of size and shape of the fibres others show a fairly high degree of regularity. It is evident, therefore, that by a careful selection within the breeds for fibre regularity, made possible by modern research methods, it should be possible to improve existing flocks to produce a type of wool that would be most acceptable to the manufacturer.

In 1930 the Imperial Wool Research Conference was held, at which the Secretary of the Research Department and Mr. D. J. Sidey both attended. Some of the recommendations of the Conference were as follows :—

1. The Imperial Wool Research Conference desires to direct the attention of the Imperial Conference to the paramount importance of continuing and intensifying scientific investigation into problems of wool-production in the principal wool-producing countries of the Empire.

2. The Conference desires to stress the importance of the closest co-operation between the Wool Industries Research Association and authorities concerned with investigations into problems of wool-production throughout the Empire.

3. In addition to the fundamental work which is being carried out at Torridon on the wool-fibre, the Wool Industries Research Association is asked to undertake responsibility for carrying out commercial trials and making technical reports on samples of wool submitted by the appropriate authorities. In this connection it has been agreed that representatives of the wool-producing countries of the Empire should be invited to serve on the Wool Fibre Committee of the Association.

The Imperial Conference of 1930 reviewed these recommendations and its Economic Committee also commented as follows :—

The Committee heartily endorse the proposals made that an economic survey of the marketing and utilization of Empire wools should be undertaken, and desire to support the suggestion that the terms of reference of the Imperial Economic Committee should be widened to enable such an inquiry to be made by that body on the basis indicated. Further, in view of the possible present overproduction of wool in relation to existing avenues of utilization, the Committee recommend that the Department of Scientific and Industrial Research of the United Kingdom, or other appropriate body, be asked to investigate the possibilities of other methods of utilization.

This report was referred by the Imperial Conference for the consideration of the several Governments of the British Commonwealth.

The position is that the Imperial authorities have carried out their part of the suggestions—*i.e.*, collection of statistical information *re* wool (published monthly as *Wool Intelligence Notes*): the setting-up of a Committee of Advice representing all avenues of utilization of crossbred fibres and experiments on new industrial uses of crossbred wools. At the same time this work receives a certain amount of support from South Africa, Australia, and Canada, but, so far, **no organization has been established in New Zealand which can speak for the wool industry, and thus take part in this liaison.** In the meantime the Empire Marketing Board has been discontinued and funds are not now available from this source for carrying-out the work. The following is an extract from a letter, dated 15th June, 1933, received from the Secretary of the Wool Industries Research Association :—

The question of the utilization of low-grade wools has been receiving attention from various points of view, as follows :—

1. IMPROVEMENT OF HANDLE OF LOW-GRADE WOOLS BY CHEMICAL MEANS.

We have been able to improve the handle of crossbred wools very considerably by subjecting them to the action of a bath of sodium sulphide under specified conditions. This subject was reported upon early in January to the Research Control Committee, and it was resolved that bulk experiments should be tried in co-operation with several members. The results are to hand to-day and are eminently satisfactory, but it is obvious from the reports received of the commercial trials that further details will have to be worked out in the near future.

2. SOLUTION AND REGENERATION OF FILAMENTS.

This work, carried out by Dr. Rimington, has been held up ever since he left owing to financial conditions. The discontinuance of contributions from the Dominions led to curtailment of work which was not directly connected with the wool industries, and this was one of the subjects which we found it impossible to finance.

3. INSULATION PURPOSES.

As regards electrical insulation, samples of crossbred cloth are now being tried by Messrs. X for impregnation with bitumen for cable work. This side of the question is being actively pursued, and the tests, which are of an ageing nature for long periods of exposure, naturally are taking a considerable time.

As already stated, there are many other uses which could be found for the fibre, but on each and every one research is necessary before it could be utilized. The growth of plastics made from synthetic resins as a phase of modern industry has rendered it essential for the admixture of shock-resisting compounds when they are moulded into various shapes. At the present time vegetable fibres have been used with very qualified success, and if a cheap medium could be rendered into the proper form it may be that the rough contour of crossbred wools would provide a suitable reinforcement for these materials. We are at present co-operating with the firms interested in this point, but unless very considerable research work is carried out on waterproofing, &c., to render them into proper form, this development will be held up for a considerable time.

There is one important consideration which makes it desirable that organized work towards the improvement of wool in New Zealand should be carried out in liaison with wool manufacturers in Great Britain, in that such work will tend to increase the interest of these manufacturers in our wools, and the work should give information as to its utilization which will enable the woollen manufacturers in Britain to make more use of them in manufacture. This would be true intra-Imperial co-operation in that it should be designed to assist the industry both in Britain and New Zealand.

The foregoing considerations in conjunction with the continued serious position of producers of crossbred wool induced me previous to my visit to the World Economic Conference to inquire from the Massey and Canterbury Agricultural Colleges as to the experiments which they were carrying out to yield some facts to guide future policy, and the following report was received. This was drawn up by a Committee of Woolgrowers working in conjunction with the Principal of Massey College. A report was also received from Lincoln College.

I have the honour to present the following report on the feasibility of growing fine wools in the North Island.

To-day the North Island, with some 15,000,000 sheep, is producing a clip composed almost entirely of crossbred wool. Further, since the decline in the use of Lincoln for crossing purposes, the proportion of the different qualities composing the crossbred clip have changed

Certainly one-half and probably a greater proportion of the wool can now be termed 46's, the remainder being 48's, 44's, and some 40's. Except for Southdown wool, the amounts of other qualities are negligible. In other words, the North Island is concentrating on the production of a narrow range of wools with the position aggravated by the high proportion of 46's. From a marketing point of view this is probably undesirable, but an alteration in policy in the direction of growing a proportion of finer wools, which necessarily involves the introduction of Merino blood in some form, is beset with considerable difficulties. The question is bound up with climatic conditions and the requirements of the fat-lamb industry. It can be taken as proved that the areas of heavy rainfall and strong pastures are unsuitable for Merino \times Longwool sheep and for the production of good half-bred wool, but there are on the other hand certain limited areas of high tussock country towards the centre of the Island which are more suitable for such sheep than for the Romney. It is safe to say that most of these districts were stocked with Merinos and Merino crosses in the earlier days, and that the more or less complete change over to longwool sheep has been brought about by the demands of the meat industry for a deep-bodied, low-set sheep, resulting in there being no market for half-bred store-sheep and cull ewes in the surrounding high rainfall districts. Quite possibly the type of wool in demand during the war also exerted a certain amount of influence. One cannot avoid the feeling that these areas should be producing more fine wool, but unless the properties are capable of fattening all their surplus stock, or are run in conjunction with fattening properties elsewhere, it is difficult to see how the present position can be altered.

It may be argued that lack of experience of half-bred ewes is partially responsible for the existing prejudice, but it must be borne in mind that so many of the fat-lamb districts have a comparatively high rainfall, and that the winter conditions would be very trying for this type of sheep. In certain parts of the East Coast where fat lambs are raised, and where the climate is drier, draft ewes with a proportion of Merino blood might prove reasonably satisfactory, and under existing wool-prices any disadvantage might be compensated for by the greater value of their wool. The total area suitable for the production of the ewes would not, however, be very great. It must also be remembered that Merinos and their crosses were originally tried out on this country, and were eventually discarded for the Romney on the score of unsuitability; and, further, that this occurred prior to the war period and its accompanying demand for strong wools.

Bearing in mind the foregoing, and the relative values of lamb and wool, it is difficult to see how the half-bred ewe could be popularized to any extent.

Alternative policies are the periodic use of Corriedale rams and selection for a fine-woolled type of Romney.

As regards the use of the Corriedale, various people in the lighter rainfall areas have put rams of this breed through their flocks from time to time. Needless to say, this cross results in a finer fleece, but Mr. A. C. Morton, who will be well known to you and who has had the opportunity of observing the results in detail, informs me that care is necessary when selecting the Romney ewes for this cross; the results from good-woolled sheep are quite satisfactory, but, as one would expect, harsh, rough-woolled Romneys do not "nick" with the Corriedale: the result is by no means a hundred-per-cent. success. The effect of this cross on the body conformation of the ewes must again be borne in mind. Every one aims at breeding low-set, deep-bodied sheep, and a suggestion of Merino conformation is anathema to the average Romney enthusiast.

Selection for a fine-woolled type of Romney is definitely in vogue with a limited number of stationholders on the East Coast. It has the merit of largely increasing the percentage of 48's quality in their clip and, further, it is easier for the breeder to avoid medullation in fine Romney wool. At the same time, there is always the danger of an attempt to keep up the weight of the fleece by unduly increasing density when the wool invariably loses its handle and general character. Again, the finer-woolled Romneys are not, generally speaking, such deep-bodied sheep as those producing 46's, and therefore not quite so ideal for fat lambs. In this respect it is only right to say, however, that the breeders of the finer type of wool maintain that their draft ewes fetch full market value.

There is a third alternative which might be mentioned, and that is the use of the Ryeland ram on the Romney ewe. This cross undoubtedly improves the carcass, and is an excellent move from the point of view of the meat trade, but the wool from the first cross is liable to be disappointing unless the ewes are selected with reasonable care. Ryeland wool classes from 50's to 56's, and well-grown clips from stud sheep are sold as half-bred. On the average, however, it does not possess the handle and character of Corriedale wool, and care must be taken in the selection of rams, or a harsh and wiry type of crossbred wool will result. It is significant, however, that two well-known farmers in the Kairanga who own also hill country properties, breed Ryeland \times Romney ewes on the latter places for use on their Kairanga properties for the production of fat lambs. Further, the champion pen of lambs at the last Royal Show was by a Southdown ram out of Ryeland \times Romney ewes.

While certain breeders will always experiment with the object of evolving a new type of sheep which they fancy—*e.g.*, the so-called Reform and Cottedown breeds and the Polwarth—this habit is not likely to spread unduly. As regards indiscriminate crossing, it is hard to see how this can be carried out if the object be finer wool, since the Corriedale and, perhaps,

the Ryeland, are the only sheep to which breeders can turn if one omits the Merino; the black fibres in the wool debar the use of the black-faced Down breeds. However, as you have pointed out, the College might well give a lead in this matter by determining the financial returns from the more reasonable crosses, as, for example, the value of Corriedale \times Romney and Ryeland \times Romney ewes for the production of Southdown cross fat lambs. It would make it possible to state their suitability with reasonable confidence. The results would, of course, have to be judged in the light of normal market conditions as well as the present-day state of affairs.

While it is reasonable to anticipate an improvement in wool prices before long, since the present position cannot continue indefinitely, recovery is almost certain to be slow. During this period the finer wools will continue to be relatively cheap and so partially replace cross-breeds. This period of low prices will be hard on the North Island hill farmers, but it is doubtful if, in the face of the dictates of the climate and the meat market, it would be wise to attempt to dilute the crossbred nature of the clip unless it be by the occasional and careful use of the Corriedale ram. A tremendous amount, however, can be done by improvement within the Romney breed. The fact must not be overlooked that well-bred Romney wool is fetching quite a fair price in comparison with the finer wools and that the super wools are eagerly sought after: it is the hairy, shabby wools that are the drug on the market. Personally, I am strongly of the opinion that improvement within the breed is the crying need of the moment: a very large number of the small hill-country farmers really know very little about wool; their chief aim when buying is to get well-grown strong-bodied sheep; so far as the wool is concerned, they are very careless and many of them almost indifferent so long as there is plenty of it. The work of the College is certainly drawing attention to the importance of quality in wool; the meetings held at the College, the large number of visits by farmers to the wool-research laboratories, the articles published from time to time, and the lectures and demonstrations given at shows and farmers' meetings are all playing their part in driving home to people's minds the essential characters of good wool. A tremendous amount, however, remains to be done; the field is being quite inadequately covered, and I know of no more urgent need and profitable investment than the appointment of an additional man with a sound knowledge of wool from the grower's angle to carry out demonstration work among the farmers. Working from the College as headquarters, this man should spend his whole time working through the different districts. The College is recognized as the wool-research centre for the North Island, and has a large connection among the farmers. Under its aegis a sound man would get an excellent hearing; he would be in close touch with the technical staff at this end which would provide the necessary support for him in view of the numerous points and problems which would be put to him, and, further, he would automatically gather valuable information for the research end of the organization. Frankly, the relative neglect of the wool industry is an extraordinary anomaly in New Zealand's agricultural organization. When one considers the value of the clip in normal times and the fact that a large proportion of the country can never be used for anything but sheep, one marvels at the absence of any energetic and well-organized effort to build up and maintain quality. Grain, pastures, and particularly dairying, are receiving all the attention, while wool, the most valuable single export in normal times, has been left to get on as best it can, in spite of the fact that there is a host of small men who are asking for a lead.

In view of the present economic position, the importance of concentrating on quality is greater than ever. Far too large a proportion of our crossbred clip is hairy and shabby, and I would earnestly recommend the appointment of a man such as I have indicated as being one of the best ways of improving the situation. In this case there would be no question of gambling on the results of research: a very considerable body of knowledge merely awaits efficient dissemination and a return on the financial outlay would be almost immediately forthcoming. In spite of the importance of curtailing expenditure, certain services are essential; productive avenues cannot be neglected if we are to weather the storm. At present we are standing by apparently unconscious of the existence of a big economic leakage. One penny per pound rise in the value of our clip is worth £1,000,000 per annum to the country, compared with which the salary of an efficient officer would be a mere bagatelle.

To summarize: The use of Merino rams is, I think, impracticable; the periodic use of Corriedale rams may increase on the East Coast, the brake on this practice being applied by the buyers of draft ewes for breeding fat lambs; indiscriminate crossing in an effort to evolve a new type of fine-woolled meaty sheep is not likely to occur to any extent since the Corriedale and perhaps the Ryeland are the only sheep to which breeders can turn; the College could put in hand experiments on the financial returns to be obtained from Corriedale \times Romney ewes and Ryeland \times Romney ewes used for the production of Southdown cross fat lambs; the most promising field of endeavour is selection and improvement within the Romney breed; a tremendous amount of improvement could be effected without awaiting any results from research if a man with a sound knowledge of sheep and wool were appointed to work from the College, with the main object of instructing the small hill-country farmer.

There are several suggestions connected with marketing and the use of the benzol test which I trust I may have the opportunity of placing before you during your coming visit to the College.

REPORT OF D. J. SIDEX, CANTERBURY AGRICULTURAL COLLEGE.

Herewith please find my ideas of what is necessary to bring about a general improvement in the returns from New Zealand wools. It must be borne in mind that it is the returns that count, and so any improvement scheme must have as its basis the attack on all points of the factors which influence the returns.

Boiled down, my ideas of research are—

- (1) The collection of information and the planning of experiments which will show what is the correct quantity and what is the required quality of food to bring about the required production of the maximum quantity of good-quality wool:
- (2) Collection of further data which can be made use of by inspectors appointed to assist in culling of sheep, so that a reasonable idea can be given as to whether or not the sheep is likely to breed good or poor quality wool:
- (3) An extension of our Wool Testing Scheme to determine which sheep or strains of sheep are producing the greatest quantity and best quality of wool. Similar to herd-testing:
- (4) Experiments planned to determine which branding fluids will give the best results as regards permanence in different districts in New Zealand and will at the same time scour off the fleece in the mills. Hand in hand with the research should go propaganda to further—
 - (i) Better breeding methods:
 - (ii) Greater care in general management:
 - (iii) Correct treatment of the wool subsequent to shearing.
- (5) Attention to marketing—
 - (i) Elimination of excess handling wherever possible:
 - (ii) Reclassing of small mixed clips.

Wool Improvement.

The basis of all animal production is the economical conversion of foodstuffs into animal products. Sheep are no exception to this rule, and with them we have to consider production under two main heads—

- (1) Production of flesh, chiefly fat lambs; and
- (2) Production of wool.

It is not possible to divorce one from the other because of the fact that better feeding, which is so essential in this country, will have an equal influence on the returns from wool and from fat-lamb production. This is particularly so when it is realized that so many of the farmers concerned will be owners of "flying" flocks, whose interest in wool improvement is of the slightest but whose interest in fat-lamb production is all important. In order that these men may receive information it is essential that the object of the work should be to improve the total returns from the sheep rather than the returns from wool alone. It may not be out of place to point out here that it is being realized more each year that some of our so-called diseases of sheep are attributable to a large extent to insufficient and/or improper feeding. Such diseases affect not only the lamb, but the wool production.

The improvement of wool generally comes under four main headings:—

- (1) Feeding:
- (2) Breeding:
- (3) Management:
- (4) Marketing.

1. Feeding.

Feeding has been placed first because it affects—

- (a) The quantity of wool produced;
- (b) The quality of the wool; and
- (c) The general health of the animals.

Without correct feeding the sheep are not able to display to the fullest their genetic characters for production, either in the form of quantity or quality. If we are going to strengthen our wool-production, it is essential, therefore, that our feeding be of such a standard that any selection made for greater quantity or better quality of wool will have a sound foundation.

Figures collected from experiments conducted at Lincoln College show that an increase of half a pound of wool per head results from good feeding as opposed to mediocre feeding for the winter months of June, July, and August. For better feeding from April to September the increase due to better feeding amounted to one pound per head. Along with this increase in quantity there was an improvement in quality, which was evidenced chiefly by the fewer tender or cotted fleeces in the well-fed lots. It is difficult to estimate the actual value of such improvement in quality, but in one case a competent classer estimated that there was as much as 2d. per pound difference in value between good and poor feeding. The results of these experiments show in addition that the better feeding has an equally marked effect on the number of lambs reared and the general thrift of the lambs.

One of Sir Fred Aykroyd's big objections to New Zealand wools was the variation in diameter along the length of the fibre.

The only method to overcome the decided thinning during winter is by better feeding.

Another point which has to be realized is that the spending of extra money on better sires will not be repaid if the standard of feeding is such that the progeny are not able to maintain the improvement.

To bring about such better feeding it would seem essential to collect and survey information on what are our present methods and where the weaknesses lie which need to be strengthened. At the same time co-ordination of effort by all interested in the problem should be attempted. For example, grasses are being analysed for mineral matter, better strains of grasses are being produced, top-dressing is advocated and soil surveys are being made all more or less independent of one another, and certainly little attempt has been made to correlate them with animal production which should be the ultimate object of all the work.

2. *Breeding.*

To carry on the work of economical production, it is essential to improve our breeding methods by—

- (a) *Elimination of Scrub Sires*, including under this heading any ram showing obvious wool faults—e.g., hairiness :
- (b) *Testing to Breed from High Producers*.—It is obviously desirable to have our sheep capable of producing the maximum quantity of good-quality wool from a given quantity of feed. Any scheme for improving the quality of our wool without a consideration of the quantity of wool produced will end in a blind alley. The returns from wool are a composite of its quantity and quality and so one must not concentrate on one to the detriment of the other :
- (c) *Better Breeding Methods*.—Our present system of haphazard breeding, both in stud and cross-bred flocks, must be displaced by some definite system of breeding to a type if wool improvement is to lead anywhere. This particular point is of particular importance when considering wool-marketing, as it would naturally lead to fewer wool types in a flock and consequently a smaller number of lots when classing.

In Australia, there are three main types of Merinos—

- (i) Fine ;
- (ii) Medium ; and
- (iii) Strong-woolled—

each of which has a particular sphere of usefulness. It would appear to be necessary to have at least two types in our Romney breed, which has to supply the demands of such a wide range of types of soil and climate ; a strong-woolled type to meet the demands of the rougher country and a finer-woolled type to run on the better class of country.

Indiscriminate cross-breeding, except for the production of fat lambs, should end, as there can be but little doubt that it has done more to lower the standard of wool-quality than any other single factor.

3. *Improved General Management.*

There are a wide range of topics which might be mentioned here, but the three most important seem to be—

- (a) Greater care at branding-time to use brands which will scour out and also to confine the branding fluid to one portion of the fleece :
- (b) Greater care at dipping to eliminate dip-stained wool and to control keds, the presence of which detracts considerably from the appearance of wool when displayed for sale. The use of " bloom " or other strong staining-dips for show and sale sheep should also be discouraged :
- (c) Avoidance of vegetable matter in the wool by—
 - (i) Controlled grazing to check weed grasses and clovers ;
 - (ii) Treatment of bidi-bidi ; and
 - (iii) Feeding straw long instead of chaffed and on the ground instead of in racks.

4. *Improved Handling and Marketing.*

While 1, 2, and 3 are being attended to, attention must also be given to this side of the business. In this connection, the first essential must be improved treatment of the wool in the wool-shed. No system of reskirting, reclassing, or any other treatment can undo the harm done to wool by haphazard skirting, shearing in dirty surroundings, and general carelessness in the original shed.

Elimination of excess handling subsequent to shearing must also be attended to. Reclassing and binning of small clips of a mixed class of wool is essential, but the classing of larger clips should all be done in the shearing-shed. Every handling a fleece receives after rolling up adds to the cost and detracts from the appearance. If better breeding and feeding methods are adopted much of the outcry for better classing will cease, as it is only because our flocks are so mixed that so much classing is essential. In our better flocks a minimum of classing serves to satisfy even the most fastidious buyers.

It can be seen, therefore, that any wool-research scheme must be comprehensive if it is to be a lasting effort and if continuous progress is to be made. It would be better to make it a "sheep-recording scheme" so that all factors affecting sheep-production can be co-ordinated. Wool is only one link in a worn chain, and while the strengthening of this link, without due regard to the other links, may improve matters temporarily, it cannot lead to a final definite improvement.

We have, in the work of the Wheat Research Institute, such a co-ordination of effort. Quantity of grain, flour-yield, baking-score, *i.e.*, quality of flour, are all receiving definite attention. Such an effort is equally important with regard to sheep work.

It will be seen that both the above reports stress the possibilities of increasing the average quality of our clip without recourse to big-scale breeding experiments towards new types. Nevertheless the possibility of the latter must not be lost sight of. The Corriedale breed was evolved with this end in view, and it is not impossible that a type may be evolved for our North Island hill country particularly which will combine the desired finer wool and a carcass suitable for Smithfield.

**Necessity for
Experimentation in
Breeding.**

During the past few years many producers have made experiments in various crossings, with the view to improved returns. This uncorrelated experimentation is on the whole expensive. Yet, if the results were examined by a competent geneticist and the information integrated and published from time to time, much useful information would probably be obtained, and duplication of less promising breeding practices avoided.

In connection with programmes of work in wool-research, it may be well to add the general recommendations of Dr. Nichols ("A Study of Empire Wool Production," page 140)—

In conclusion, it is suggested that for solution of the general problems from the producers' point of view the following are required :—

- (1) A study of wool supplies including consideration of—
 - (i) The relationships of sheep-types in the general organization of the industry in each country and trends of production ;
 - (ii) The most suitable environment for given types of sheep ; and
 - (iii) The bulks contributed by individual animals to the whole supply.
- (2) Investigation of specific defects of the different types of wool from the manufacturers' point of view, and of the desired wools in relation to the welfare of the animal.
- (3) Inquiry into the best means whereby the breeder may recognize characteristics which are undesirable in manufacture.
- (4) Examination of the possibility of eradicating or reducing the undesirable features or of influencing, by selection and husbandry, the kind of wool produced by a given type of sheep.
- (5) Research into the economic conditions which affect or limit the possibilities of including in practical sheep husbandry the results of any of the above.

In addition to work in the direction of carrying-out the above suggestions, major avenues of useful inquiry are in the direction of utilization and marketing. A thorough survey is advisable of the uses to which crossbred wools are put and the possible extension of utilization. Preliminary chemical work has shown that it may be possible so to treat the work as to render it softer and capable of finer spinning. If successful this would increase the avenues of utilization. It has also been suggested that the problem of solution and reconstitution of fibres with the elastic properties of wool is not insoluble.

As regards preparation for marketing, there appears to be definite possibilities of improvement both as regards better classing and possibly a wider use of binning. Such improvements could be quickly adopted. Any step seems desirable which will make wool more attractive, and the only way to obtain the best available competition from buyers is to put the wool on the market in the most attractive manner. Mixed lines of crossbred wool are almost always bought on the bulk quality showing, and nothing extra is obtained for the proportion of finer wools which such clips invariably contain.

It has also been suggested that much of our coarser wool in particular could, with advantage, be sorted into matchings and scoured prior to export; similarly with regard to bellies and pieces. It may be asked why should freight be paid on the large proportion of grease and dirt and waste material. Could not the saving in freight thus made be reflected back to the producers in the form of a higher net return ?

**Export of Scoured
Wool.**

There are apparently many technical factors against this suggestion being adopted as general practice. Spinners in general are apprehensive as to whether

the process would be carried out successfully both from the point of view of the satisfactoriness of the sorting and the technical control of the scouring operation so as not to influence the working qualities of the wool. It is probable that "woollen" manufacturers are not so exacting in their requirements in these regards as the "worsted" manufacturers, and that what applies to the fine wools may not hold to the same extent for the stronger crossbred wools. It seems desirable that before the proposed practice is adopted in any locality a careful study should be made of the availability of sufficient supplies of suitable wool for scouring, and the possibility of marketing the scoured wool to advantage. To obtain the best returns, wool must obviously be kept in a condition suitable for the requirements of the purchaser. There appears to be some evidence, however, that the export of scoured wool is likely to increase.

Export of Tops.

The further suggestion has been made that the manufacturing of "tops"* for export be undertaken in the Dominion, this having been successfully accomplished in Australia. Support to a certain extent is given to this and the previous suggestion regarding sorted wool and matchings and better classing of wool by a study of the amounts of New Zealand wool re-exported from Great Britain after having been thus treated. Moreover, there are many localities in New Zealand in which the conditions of humidity and availability of soft water are suitable.

RE-EXPORTS OF ARGENTINE AND NEW ZEALAND RAW WOOL FROM THE UNITED KINGDOM, EXPRESSED AS A PERCENTAGE OF THE GROSS IMPORTS FROM THESE COUNTRIES.

Source of Supply.	1925.	1926.	1927.	1928.	1930.	1931.	1932.
Argentina	20	12	19	8	4	3	†
New Zealand	30	32	37	43	40	31	†

The difficulties to be overcome are both technical and marketing. Tops with the same counts have variations in quality of an intricate nature to suit various users. Many years of practice have given Bradford pre-eminence in the manufacturing of tops. We may quote from "Wool Quality" by S. G. Barker, pages 32 and 33.

Very few wool tops are made from one type of wool. It is essential, from a particular spinner's point of view, to produce yarn of certain uniform characteristics, and in order to secure a top which will do this it is obvious that blending must be done in order to allow for the many differences in the wool coming from the same sources at different times, resulting from different local conditions of production. The topmaker, therefore, must maintain a constant standard of quality, without which continuity of supplies of popular yarns and fabrics would be impossible. It is obvious that the same components are not always available for the standard blending, and it is then that the topmaker must exercise his skill in order to produce a top equal in all working and finishing properties to the standard of previous deliveries, although the actual constituents of the blend may be varied. Efficient sorting permits efficient blending, the sorted qualities are the elements, whilst the blend is the acceptable compound.

Since, as already mentioned, wool sorting and blending permit the production of variety in yarns, it is obvious that in obedience to the dictates of fashion or the quest for something different, there will be, even within a quality, variation of constituents of particular blends. Thus we find a tendency to-day to get away from the old nomenclature or appellations of quality numbers, and to substitute in their places designations of different types of blends. It is thus possible, within a quality, to have several different yet representative types, each with particular characteristics suitable to particular branches of the trade.

It is obvious that such a state of affairs makes the standardization of wool quality an extremely complex and difficult matter. **Nevertheless, the question of exporting scoured wool or tops is well worthy of thorough exploration.** Standard prices for crossbred tops rule on the world's markets, and it appears probable that the spinner could blend different tops to secure his desired results in the yarn. **If it were possible to establish this industry more employment would ensue in the Dominion,** and a more direct guide given to the producer in the improvement of quality.

* Tops consist of a continuous band of combed fibres in an untwisted condition. The topmaker first sorts the fleeces into "matchings" by putting together those portions of different fleeces which correspond in "quality." They are then blended, scoured and carded, &c.

† Not yet available.

It will be realized from the foregoing considerations that there are many possible avenues of improvement which may result in higher net returns to the wool-producer, particularly of the crossbred wools such as are produced almost exclusively in the North Island, and to a large extent in the South Island.

Organization for Improvement.

It appears desirable that some organization should be set up to constitute a centre of information and research into all matters of importance to the sheep-farmer so that reliable information may be disseminated for their guidance, obtained both by local investigation and by liaison with overseas organizations.

New Zealand seems to be lagging in this regard compared with other Empire countries. The Council of Scientific and Industrial Research, Australia, has organized a Research Station and Bureau "for the fundamental study of the sheep with a view to building-up a body of knowledge which will enable definite guidance to be given to pastoralists so as to enable them to overcome certain serious difficulties with which they are at present faced." A sum of £20,000 was given by a prominent squatter, Mr. F. D. McMaster, and the work is supported by the Australian Pastoralist Research Trust and the Woolbroking and Pastoral Companies to an amount of £3,000 per annum.

Action in other Empire Countries.

In South Africa, whose progress in wool-production is so marked during the past few years, an important step towards securing standardization of the various grades has been taken by the formation of woolgrowers' associations, and a Wool Council has been set up for research and investigation. The Council is financed by a levy of 10d. per bale of wool.

In Canada, the Research Council has also organized a combined effort by growers and manufacturers and, like South Africa and Australia, is working in co-operation with the Wool Industries Research Association of the British Council of Scientific and Industrial Research.

All the above countries are importing improved sires for the improvement of their flocks.

Numerous cases could be cited of industries in other parts of the world—*e.g.*, rubber, cotton, &c.—which have successfully combined for co-operative action in investigating the problems of production and utilization of the product concerned, and experience in New Zealand, as in all parts of the world, has shown **that progress can only be made when the industry itself takes the main part in any investigational activities undertaken on its behalf.** Only in this way are the results of investigation quickly translated into necessary action in the industry and the programme of work fully adapted to its needs.

In May last, meetings were held at Palmerston North, convened by a committee of woolgrowers in co-operation with Massey College, to discuss questions of wool improvement, when a report was presented by the Committee. On the concluding day of the meeting the question of organization of some permanent body was discussed, and it was unanimously resolved by a meeting of 350 sheep-growers: **"That the time had come when a concerted effort should be made to raise the standard of the sheep and wool of the North Island; that the Government be asked to pass legislation enabling the imposition of a levy of not more than threepence per bale on all wool grown in the North Island, or in the Dominion if the South Island wished to come into the scheme; and that the total sum and any subsidies accruing be administered by a committee, elected by the sheep-farmers, whose duty it would be to organize and carry out a definite plan to bring about all possible improvements in the industry."**

Recent Consideration by Woolgrowers.

A provisional committee was elected and asked to formulate more definitely the functions of the proposed permanent committee. This committee considered the matter and made the following suggestions:—

(a) INSTRUCTION TO FARMERS.

To set up an efficient advisory and instructional system for sheep-farmers; the instructors to be appointed and controlled by the committee, to be practical men with a thorough knowledge of sheep and wool, and to be engaged in giving lectures and demonstrations throughout the North Island.

(b) ELIMINATION OF SCRUB SIRES.

To introduce, with the co-operation of the Breed Societies, a suitable system for the voluntary inspection and certification of sires. The object of the scheme would be the elimination of scrub sires, that is, only animals which have definite major faults and which are undoubtedly a menace to the quality of our sheep and wool.

(c) RESEARCH.

To assist financially and to stimulate research in urgent problems connected with wool, sheep parasites and diseases, sterility and other relevant matters.

(d) PREPARATION OF THE CLIP FOR SALE.

To collect and circulate facts and figures on the economic advantages of classing, binning, &c., and to provide the farmer with data which will help him to decide the most profitable methods to adopt.

(e) FREIGHTS ON WOOL BY LAND OR SEA.

To investigate from time to time the freights on wool with the object of determining whether any reduction may reasonably be obtained.

(f) DISSEMINATION OF INFORMATION.

To arrange for the collection, publication, and distribution to sheep-farmers of the results of research both in New Zealand and abroad, and of any information of especial value to the industry. This might take the form of a half-yearly booklet and include the Proceedings of the Meeting of Sheep Breeders held annually at Massey College. There is no one periodical which reaches more than a fraction of the sheep-farmers, and this represents a serious lack of contact with the various sources of information which should be remedied as soon as possible.

(g) CONTACT WITH OTHER BODIES.

To keep in close contact with the Department of Scientific and Industrial Research, Breed Societies, other farmers' organizations, and any other bodies in New Zealand or abroad engaged on work of interest to or affecting the sheep and wool industry.

Arising from this meeting and the committee's deliberations, further meetings were held in Wellington and various parts of the North Island, and the proposals have on the whole been favourably received, and the Government has been asked to promote legislation along the following lines:—

- (a) For the establishment for the North Island of New Zealand of an administrative organization, representative of sheepowners, to be known as the New Zealand Sheep and Wool Improvement Council, or by some similar appropriate name:
- (b) For the extension of the scheme to the South Island, or to any specific areas in the South Island, after a favourable ballot taken of the sheepowners in the areas concerned.
- (c) The Council to be a body corporate, with power to hold money and other property and having other incidental powers:
- (d) The Council to have power to expend its moneys in schemes for the improvement of the standard of flocks in the North Island and (in the event of the South Island or any defined portion of the South Island being brought within the scope of the Act) for the improvement of flocks within the South Island or such defined portion, as the case may be. For this purpose, the Council to have power to co-operate with other bodies having similar or cognate objects:
- (e) The funds of the Council to be provided by means of a levy on all wool produced in the North Island or in any area in the South Island in which the Act is operative, and sold in New Zealand or exported from New Zealand. The amount of the levy to be fixed by the Governor-General in Council, at a rate not exceeding 3d. a bale, except that the rate may be increased if a proposal to increase it beyond 3d. is carried by a two-thirds majority at a referendum of affected sheepowners taken for the purpose.
- (f) The moneys of the Council to be held in its own bank account, to be operated on in accordance with its own rules, and not to form part of the revenues of the Government. The accounts of the Council to be audited by the Audit Office.
- (g) Incidental provisions to make the above scheme operative.

This statement has been prepared, therefore, to bring the matter before the notice of the House since the question is one of considerable national importance, and it appears essential that some action should be taken to improve the present outlook of our wool industry through the adoption of a long range policy tending towards greater stability in the future.

Approximate Cost of Paper.—Preparation, not given: printing (780 copies). £16 10s.