DECEMBER, 1929 BULLETIN No. 1

MASSEY AGRICULTURAL COLLEGE
(UNIVERSITY OF NEW ZEALAND)
PALMERSTON NORTH

SOME FACTORS AFFECTING THE MARKETS FOR N.Z. WOOL

D. O. WILLIAMS

PALMERSTON NORTH, N.Z.
PUBLISHED BY THE COLLEGE

CONTENTS

ABBREVIATIONS USED IN REFERENCES

ABBREVIATION	FULL TITLE
An. Rev. N.A.W.M.	Annual Wool Review: National Association of Wool Manufacturers (U.S.A.)
B.R.A.W.W.I.	British Research Association for the Woollen and Worsted Industries.
C. of C.	Chamber of Commerce.
Dalgety's An. Rev.	Dalgety's Annual Wool Review for Australasia.
Dawson's Stat. Rev.	Statistical Review of the Wool and Wool Textile Trades, 1912-27: H. Dawson Sons & Co., Ltd.
Liberal Industrial Inquiry	Britain's Industrial Future: Report of the Liberal Industrial Inquiry (1928).
Manchester G. Com.	Manchester Guardian Commercial.
N.Z.O.Y.B.	New Zealand Official Year Book.
Survey of Overseas Markets	Survey of Overseas Markets: Committee of Industry and Trade (1927).
Survey of Textiles	Survey of Textile Industries: Committee of Industry and Trade (1928).
U.S.D.A.	United States Department of Agriculture.

SOME FACTORS AFFECTING THE MARKETS FOR N.Z. WOOL

D. O. WILLIAMS, M.A.

INTRODUCTION:

Unfortunately we have no precise knowledge of the destinations of our raw wool or of the proportions which various markets absorb. This paper has been prepared partly to place available information in a more accessible and perhaps a more accurate form; and partly, since the result of pursuing the first objective is largely a lament on our present ignorances, to emphasize the necessity for fuller knowledge.

The matter of wool research is now occupying the attention of all the important wool-growing and wool-using countries; and within the British Empire a strong endeavour is being made to secure the co-operation of both groups for a comprehensive programme of investigation into wool problems. Broadly speaking the plan is to make a general survey of wool production, marketing and utilization. These are not independent but closely correlated aspects of a single but highly complicated economic process. And they involve for their proper investigation the services of many classes of practical men and scientific workers.

The difficulties facing such a scheme are great. Like most natural products, wool can be adjusted but slowly either in volume or in quality to changing demands. The inherent difficulties of rapid or radical changes in quantity or quality on the supply side are exacerbated by the comparative instability of the demand side, and further accentuated where the grower has to consider the meat as well as the wool market. In his turn the manufacturer has to face problems associated with the wide diversity of the raw material he handles, with changes in its quality, and disturbing oscillations in its price; as well as those that are associated with the vagaries of fashion, changes in the modes of living, the competition of new textiles and geographical changes in demand. It is one function of the research now being organised to make these matters clearer to all who are interested scientifically or economically in the wool industry. For the distance between wool-growers and wool-users is normally great, and the knowledge that each has of the other's problems is necessarily scanty and often grotesquely wrong.

An attempt has here been made to indicate some broad changes that have taken place in regard to the demand for New Zealand wool. There has been, since the war, a redistribution of world trade in wool which has affected our markets considerably, diminishing the importance of the United Kingdom and increasing that of outside countries, chiefly Europe. One section is devoted to a statistical presentation of these changes, and another to a summary account of the course of industrial activity in the wool textile industries of England, Continental Europe, America and Japan. A further section briefly discusses the development of artificial silk and artificial wool. The result is a paper more remarkable for its inclusiveness than for any new matter it may contain. Its chief defect is very obvious lack of precise information concerning the demand for our wool. It may be hoped that this deficiency will serve to emphasize the need we have for fuller and more accessible information.

The obvious bearing that changes in demand have on the problems of wool production is the justification for seeking a more intimate knowledge of our markets. At present we are aware in a vague way of the broad fields of utilization for our wool; but we do not know the precise commercial uses to which it is put. We do not know clearly what effect on manufacturing requirements changes in fashion have had, although these effects must obviously be significant. We do not know, except approximately, how far post-war events have altered national demands for our wool. We are, in fact, ignorant on most matters that it is important and interesting for the wool-grower to know.

The class of information required is first, as has been indicated, a survey in as great detail as possible, of the requirements of each branch of the wool textile industry.* We are told often enough that we must improve the quality of our wool; but as yet we have not been told for what specific purposes our wool is required or in what general proportions different classes of wool are normally demanded.

We need to know this, not only for the United Kingdom, but for Europe and other countries also. For it is evident that Europe particularly is a more important buyer of our wool than formerly. Moreover, in certain branches of the industry there are technical

* See Barker and Frobisher: Survey of the Production and Utilization of Wool, Publication No. 94 of the B.R.A.W.W.I. for an excellent appreciation of this and related aspects.

differences (not at all clear to us) between English and Continental manufacturing processes which suggest that wool declared unsuitable by some countries is acceptable by others. Whatever the reason, Continental criticism of our wool has not been as vocal as that from Bradford. In the absence of other explanations, we are entitled tentatively to assume that it is greater satisfaction rather than greater reticence that accounts for the difference in attitude. In any case the growing importance of our trade with such countries as France and Germany (and with Japan) make it imperative for us to get their views on the matter.

In the second place, we require much more detailed information concerning the consumption of our wool by various countries. This would involve an analysis of the re-exports of New Zealand wool from the United Kingdom. So far as I am aware, no such analysis exists at present. So much wool is re-exported; but where it goes and in what proportions we can only guess. Further, it would immensely improve the comparability of figures if they were all reduced to a common basis, on the plan, say, of the Australian export statistics which are all converted to a greasy basis, or of the United States statistics which give the scoured equivalent weights. Figures which conceal significant variations in the proportions of greasy and other wool, either for one country over a period of years, or as between different countries, are rough weapons in an age of highly developed statistical services. A thorough revision of wool statistics, with a view to securing uniform procedure in the various countries concerned, is a matter of some urgency.

Finally, it would be of no little value if some medium could be devised for collecting and circulating data of general interest to wool growers and users. Current information about markets is of course, essential and is available in numerous trade journals. But what is needed is perhaps some more compendious publication, in which the information carries the seal of authoritative impartiality and where the scope is wide enough to include more than mere reference to surface phenomena. It would, for instance, be helpful if significant changes in the techinque of manufacture, in schedules of demand, in the development of competitive or auxiliary textiles, and in the geographical distribution of trade, were noted. Some of the better known trade journals have already indicated the general lines on which to proceed. But the multiplicity of publications of all kinds, and the uncertainty concerning the reliability of some, is highly confusing. If from this mass of information, some competent body could sift the authentic from the spurious or merely ephemeral, they would perform a valuable service. Perhaps the scope of some Textile Journals, already ably edited and securely established in scientific esteem, might be extended beyond their present somewhat technical reference.

I.—DESTINATIONS OF NEW ZEALAND RAW WOOL:

The United Kingdom is the most important market for our produce, although in some instances she retains considerably less than is generally supposed. From 1860 to 1870 our exports to Australia were more important than those to the United Kingdom; but the two markets together claimed 99% of the total produce shipped from New Zealand. From the seventies up to the mid-nineties the share exported direct to the United Kingdom varied round about 75%, and in later years rose to about 80%. The proportion sent direct to Australia has steadily declined from the high level of 1860-70, when it was about 58%, to the low level of about 5½% for the period 1920-7. In the last twenty years or so the most noticeable feature in the trend of our export trade has been the increasing share which has gone to countries other than these two. Foreign markets have shown the greatest increases. The annual average amount taken in 1909-13 by non-British countries was 5.6%; in 1923-7 it was somewhat over 12%.[1]

Such an account, however, presents a very inaccurate picture of the direction of our export trade. It is concerned only with direct exports to various destinations and does not take into consideration the produce which is re-exported from the United Kingdom. "Included in the exports to the United Kingdom are considerable quantities of produce which are shipped to London merely as a convenient depot for subsequent reshipment to the Continent or America."[2] If some adjustment can be made for these re-exports a closer estimate of the importance of the foreign market is possible. It is probable that such a calculation would very nearly double the percentage proportion attributable to foreign countries; and would diminish that attributable to the United Kingdom by at least 10%. Whatever the precise result a careful investigation might reveal, it is evident that proper allowance for re-exports is of considerable importance in estimating the direction and trend of our foreign trade.

1 Detailed information is given N.Z.O.Y. Books. For early years see 1915 Y.B., special article by J. B. Condliffe.

2 N.Z.O.Y.B. 1929, p. 299.

A.—WOOL EXPORTS AND RE-EXPORTS:

The most important item in the re-exports of New Zealand produce from the United Kingdom is wool. The following Table shows the value of all New Zealand re-exports from the United Kingdom, the value of wool re-exports, and the proportion which these latter bear to the total.

TABLE I.

TOTAL NEW ZEALAND RE-EXPORTS, AND RE-EXPORTS OF NEW ZEALAND SHEEP AND LAMB'S WOOL FROM UNITED KINGDOM.[3]

Values in Millions of £

Year	Total Re-exports £m.	Re-exports of Wool £m.	Percentage of Wool Re-exports to Total
1920	3.6	1.2	33.3
1921	2.7	.9	33.3
1922	4.7	2.8	60.0
1923	5.4	4.1	76.0
1924	7.3	5.5	75.0
1925	7.4	4.7	63.5
1926	6.4	4.5	70.0
1927	7.5	5.2	70.0

In the five-year period 1923-7 the aggregate value of our wool re-exported from the United Kingdom was £24 millions, or nearly £5 millions annually. Practically all of this is shipped to the wool-manufacturing centres of Europe and America. Obviously only a fractional amount would go to other than foreign countries. No error of any significance will be committed, therefore, if the full value of these re-exports is attributed to the foreign market for New Zealand wool.[4]

Since the war there has been a marked decrease in the amount and proportion of New Zealand wool retained by the United Kingdom. Owing to the great changes in prices that have occurred since 1909-13, values do not provide the most suitable basis for considering the developments in this respect. In the next Table, therefore, the weight of wool is used as a basis. Further, in view of the fact that the recorded weight of wool exported from New Zealand to the United Kingdom does not agree with the recorded weight of wool imported into the United Kingdom from New Zealand, results have been worked out from both sets of statistics for purposes of comparison.

3 Stat. Report of Trade and Shipping of N.Z., 1928, Pt. II., p. xi.

4 The proportion of cross-bred wool (from all sources) re-exported from the United Kingdom 1926-7, to British countries was between 2 and 3 per cent. (An. Statement of Trade of United Kingdom with Foreign Countries, 1927, Vol. II., p. 549).

TABLE II.

AMOUNT AND PERCENTAGE PROPORTION OF NEW ZEALAND RAW WOOL RETAINED BY UNITED KINGDOM.[5]

Weight in Parcels of 1000 lbs.

Year	Exports to U.K.	Re-exports from U.K.	Retained in U.K.		Imports to U.K.	Re-exports from U.K.	Retained in U.K.		Percentage re-exported
	Lbs.	Lbs.	Lbs.	%	Lbs.	Lbs.	Lbs.	%	%
1909–13	**175428**	**40805**	**134623**	**77**	**181136**	**40805**	**140331**	**77**	**23**
1914	195612	51961	143651	73	184608	51961	132647	72	28
1915	183011	11570	171441	93	200032	11570	188462	94	6
1916	162452	4562	157890	97	157853	4562	153291	97	3
1917	168062	2737	165325	98	142105	2737	139368	98	2
1918	80503	2211	78291	97	89299	2211	87088	97	3
1919	258388	4516	253872	98	254196	4516	249680	98	2
1920	162302	9479	152823	94	154196	9479	144717	94	6
1921	145386	19685	125701	87	148315	19685	128630	87	13
1922	292176	56810	235366	80	304675	56810	247965	82	18
1923	181720	64235	117484	65	181100	64235	116866	65	35
1924	154203	63506	90697	59	178631	63506	115124	64	36
1925	162039	50993	111046	69	172491	50993	121498	70	30
1926	169747	59072	110675	66	184187	59072	125115	68	32
1927	169074	71328	97746	59	192428	71328	121100	63	37
1923–27	**167357**	**61827**	**105530**	**64**	**181767**	**61827**	**119940**	**66**	**34**

The second portion of the Table worked out on the basis "Imports into the United Kingdom less re-exports" gives the more accurate measure of the amount retained by the United Kingdom. In the 1909-13 quinquennium she retained over three-fourths of the wool imported from us; but in the last quinquennium for for which statistics are available, 1923-7, the proportion fell to about two-thirds. The war years, of course, reduced re-exports to a minimum; but the Continental demand recovered during the reconstruction period after the war. In recent years, therefore, over one-third of our wool imported into the United Kingdom is transhipped to other countries, chiefly to Europe (which probably takes 80% of the re-exports) and, to a smaller extent, to North America. In these last five years there has also been a marked decrease in the absolute amount retained by the United Kingdom. The average annual amount retained in 1909-13 was a little over 140 million lbs.; but in 1923-7 the annual average was a little less than 120 million lbs. This annual decrease of 20 millions is not a reflection of diminished total exports of wool from New Zealand; for in the same periods our annual average exports rose by 25 millions from 187 to 212 million lbs.

It is worth noting that the large proportion of our wool which is re-exported from the United Kingdom is not in the class of ex-

[5] Imports into United Kingdom and Re-exports from An. Statement of Trade of United Kingdom with Foreign Countries; Exports from New Zealand from N.Z.O.Y. Books.

ceptional cases. On the contrary, it is below the general average. Since 1920 the United Kingdom has re-exported, on the average, about 43% of her total imports of sheep and lamb's wool, a proportion that appears closely to approximate the average of 1909-13.[6]

TABLE III.

TOTAL IMPORTS INTO AND RE-EXPORTS FROM THE UNITED KINGDOM OF SHEEP AND LAMB'S WOOL.

Weight in Millions of lbs.[7]

Year.	Imports.	Re-exports.	Percentage Re-exported	Percentage of N.Z. Wool Re-exported.
1920	873	220	25	6
1921	761	334	44	13
1922	1105	447	40	18
1923	739	413	56	35
1924	760	359	47	36
1925	727	339	47	30
1926	811	338	42	32
1927	822	347	42	37

B.—THE IMPORTANCE OF THE FOREIGN MARKET:

The £5 millions of New Zealand wool that has annually been re-exported in the period 1923-7 cannot be traced to its destinations. For reasons given later it appears unlikely that less than £4 millions has gone to Europe. It is unfortunate that a more precise statement cannot be made; but existing statistics are inadequate for this purpose. The British Board of Trade figures give the volume and value of the United Kingdom re-exports of wool and they show how much goes to each destination; but they do not show how much of this flow of wool is of New Zealand origin. If we turn to the statistics of the countries which import this wool from the United Kingdom we gain little more information, for, except in the case of the United States, they do not specify countries of origin of specific products imported through intermediate countries. Thus, to take two of our important customers, neither France nor Germany reveal in their statistics how much New Zealand wool they import through the United Kingdom.[8] From our point of view this is a serious defect. We

6 See Survey of Textiles, p. 275, where the proportion from the figures given works out at 44%. The Re-exports include relatively small quantities of Mohair, Alpaca, etc.

7 An. Statements of Trade of United Kingdom with Foreign Countries.

8 Advice of French and German Consuls for New Zealand.

are sellers who do not know, except roughly, who our ultimate buyers are, or rather, what the strength and trends of their demands are. Even from the narrow point of view of trade balances with other countries (a matter that unduly agitates the minds of many people) it is desirable to have this more precise information. As it is we have no accurate measure of our trading with any of our important customers outside the United Kingdom. The commodity now under discussion provides, by virtue of its great importance to us and the extent to which it enters into the English re-export trade of our produce, an excellent illustration of the inadequacy of available data. It is clearly of first-class importance to New Zealand, which depends to such an exceptional degree on her external trade for her prosperity, to have the fullest possible information on these matters.

In the meantime an attempt is made to manipulate our present somewhat recalcitrant and inadequate statistics in order to estimate the growth of the foreign market for our wool. A final statement is made in Table X. Other Tables are nevertheless introduced even though their results are eventually considered unsatisfactory. The justification of this procedure is held to be that it makes clear the probable accuracy of the final statement and demonstrates the statistical errors it is important to avoid.

One interesting development has been the increase in the amount of wool exported direct to countries other than the United Kingdom. In pre-war years (1909-13) only 6% of our total direct exports of wool went outside the United Kingdom; but the average for 1923-7 was about 20%. Full details of this development are given in Tables IV. and V.

TABLE IV.

DIRECT EXPORTS OF NEW ZEALAND WOOL TO VARIOUS COUNTRIES.

A.—Volume in parcels of 1000 lbs.

Year.	U.K.	Canada	Aust'lia	France	Germany	Japan	U.S.	Other	Total	Other than U.K.
1909–13	**175428**	**713**	**712**	**2182**	**4225**	**18**	**3888**	**508**	**187675**	**12246**
1914	195612	907	272	5687	10306	1822	5015	850	220473	24861
1915	183011	2882	1579	....	....	2999	6113	....	196584	13573
1916	162452	2508	556	4370	....	2182	13439	....	185507	23055
1917	168062	3620	....	6592	....	....	....	....	178274	10212
1918	80503	8192	523	11328	....	....	8179	....	108725	28222
1919	258388	50	....	1482	....	....	13295	1032	274247	15859
1920	162302	....	....	....	....	....	26	....	162328	26
1921	145386	2354	....	699	1477	1068	7241	490	158715	13329
1922	292176	2537	....	2530	7061	5002	10775	1452	321533	29357
1923	181720	2373	2723	5193	4662	4584	14243	2068	217566	35846
1924	154203	843	6847	7329	15804	3760	6996	10461	206244	52041
1925	162039	836	2030	7010	15955	2536	11693	3628	205727	43688
1926	169747	3003	2716	12341	4380	2719	15152	3097	213154	43407
1927	169074	4072	5856	17522	13244	2733	5191	2809	220501	51427
1923–27	**167357**	**2226**	**4024**	**9878**	**10809**	**3266**	**10655**	**4413**	**212638**	**45282**
B.—Value in Thousands of £.										
1909–13	**6763**	**32**	**22**	**78**	**162**	....	**175**	**17**	**7238**	**486**
1914	8325	47	10	218	397	59	223	28	9307	982
1915	9550	194	92	......	....	135	414	......	10386	836
1916	10865	186	35	299	....	109	891	......	12384	1520
1917	11393	311	......	471	....	....	....	......	12174	781
1918	5596	572	39	777	....	....	543	......	7527	1931
1919	18501	4	......	98	....	....	885	......	19488	687
1920	11862	......	......	......	....	....	2	......	11864	2
1921	4741	79	19	14	43	15	302	7	5220	479
1922	10998	93	6	58	195	86	415	32	11883	885
1923	9078	141	120	251	186	173	873	83	10905	827
1924	11564	64	518	517	1030	273	584	725	15275	3711
1925	14036	54	158	520	1315	215	1149	292	17739	3703
1926	9501	158	142	578	207	119	991	132	11828	2327
1927	10034	213	376	959	761	150	327	170	12990	2957
1923–27	**10843**	**126**	**263**	**565**	**700**	**186**	**787**	**280**	**13750**	**2905**

The general results yielded by this Table are striking. In terms of volume, the average annual direct export to countries other than the United Kingdom shows for the period 1923-7 an increase of 33 million lbs. over the 1909-13 level of 12 millions. If re-exports are added to direct shipments the amount annually taken by these countries is seen to have doubled, being 53 million lbs. in 1909-13 and 107 millions in 1923-7. This amount is not far short of the 120 million lbs. annually retained by the United Kingdom in the last five-year period. It would appear on this preliminary survey that the markets outside the United Kingdom have grown in competitive stature until now they rank almost equal with her as customers for our wool.

In the next Table direct exports are expressed as percentage proportions of total wool exports. They show a decrease in the proportion sent direct to the United Kingdom and a corresponding increase in the proportion exported direct to other countries.

TABLE V.
APPROXIMATE PERCENTAGE PROPORTIONS OF DIRECT EXPORTS OF RAW WOOL TO VARIOUS COUNTRIES.

Year	United Kingdom Volume	United Kingdom Value	All Others Volume	All Others Value	Europe Volume	Europe Value	North America Volume	North America Value
1909–13	**94**	**94**	**6**	**6**	**3.5**	**3.5**	**2.5**	**2.5**
1914	89	89	11	11	8	7	3	3
1915	93	92	7	8	0	0	5	6
1916	87	87	13	13	2	2	9	9
1917	94	94	6	6	4	4	2	2
1918	75	74	25	26	10	10	15	15
1919	94	96	6	4	0.5	0.5	5	5
1920	100	100	0	0	0	0	0	0
1921	92	91	8	9	1	1	6	7
1922	91	93	9	7	3	2	4	4
1923	84	92	16	8	4	4	8	9
1924	75	76	25	24	11	10	3	4
1925	79	79	21	21	11	10	6	7
1926	80	81	20	19	8	7	9	9
1927	77	77	23	23	14	13	4	4
1923–27	**79**	**81**	**21**	**19**	**9.5**	**9**	**6**	**6.5**

This Table shows clearly enough the increased activity of foreign buyers at Dominion sales. Their operations, however, have not been at the expense of purchases by them in England, for as Table II. indicates, re-exports from the United Kingdom have also been increasing considerably. Both increased re-exports and increased purchases in the Dominion market reveal the growing strength of the foreign demand for our wool.

C.—DIFFICULTIES OF PRECISE MEASUREMENT OF MARKETS:

The results which have been given above must be looked upon as rough approximations only. It is necessary at this stage to make clearer the limitations of our present statistics and to modify our results accordingly.

The first imperfection is that the quantities given include in varying proportions wool which has been processed in different ways; that is, they include greasy, scoured, washed, and sliped wool. The comparability of the totals given for each year is affected by any changes that occur in the proportions of greasy and other wool. The reduction of the New Zealand weights to a comparable basis is, however, of little use unless a similar reduction is made in the English figures. The error arising from this source should be eliminated in the interests of exact statement; but it is, fortunately, small enough not seriously to affect the general validity of the results given later, and is, in any event, rather swamped by other possibilities of error.

More important are the great differences that sometimes occur between the recorded volume and value of New Zealand exports of wool to the United Kingdom and the recorded volume and value of New Zealand wool imported into the United Kingdom. Tables VI. to X. show that these differences, particularly in more recent years, are important and can materially affect our conclusions. Some differences must occur. If both countries close their year on December 31st, then some wool which is included in our statistics of exports for that year will be included in the statistics of the United Kingdom for the following year. Differences both in value and volume due to this cause, however, are not at all important over a period of years; a triennial moving average will eliminate them. In the case of values, differences in the methods of valuation may be significant and in any case New Zealand export values are F.O.B. while English import values are C.I.F.

Even if proper adjustments could be made for these considerations, they could not possibly account for the discrepancies that appear. For instance, the recorded weight of New Zealand wool imported into the United Kingdom, 1909-27, exceeds the recorded weight of New Zealand wool exports by 88 million pounds, or over 4½ million lbs. annually. Moreover, most of the excess occurs in the years 1924-7. From 1909-23 there were annual variations between the two sets of figures, the New Zealand recorded weight being greater in some years than the English recorded weight; but during this time these variations had almost cancelled out, leaving a United Kingdom excess of only 15 million lbs. for the 15 years. The four years, 1924-7, however, show an excess of 73 million lbs., or over 18 millions per annum.

In order to test the differences that result from these discrepancies several Tables have been prepared using both New Zealand export and United Kingdom import figures as bases.

TABLE VI.

VALUE OF NEW ZEALAND RAW WOOL ABSORBED BY VARIOUS MARKETS.

Values in Thousands of £.

Year	Imports into U.K.	Re-exports from U.K.	Retained in U.K.	Direct Exports to other than U.K.	Total taken by other than U.K.	Total taken by all	Percentage of Total taken by: U.K.		All Others	
	1	2	3	4	5	6	7		8	
1909–13	**7761**	**1869**	**5892**	**475**	**2344**	**8236**	**72**		**28**	
1914	8628	2549	6079	982	3531	9610	63	*	37	*
1915	11076	845	10231	836	1681	11912	86	78	14	22
1916	10928	376	10552	1520	1896	12448	85	87	15	13
1917	11125	263	10862	781	1044	11906	91	84	9	16
1918	7450	283	7167	1931	2214	9381	77	87	23	13
1919	21898	574	21324	687	1261	22585	94	87	6	13
1920	12546	1220	11326	2	1222	12548	90	89	10	11
1921	8327	889	7438	479	1368	8806	84	84	16	16
1922	15764	2790	12974	885	3675	16599	78	73	22	27
1923	10229	4104	6126	827	4931	11057	56	62	44	38
1924	15473	5467	10006	3711	9178	19184	52	56	48	44
1925	17190	4750	12440	3703	8453	20893	59	57	41	43
1926	14927	4475	10452	2327	6802	17254	60	57	40	43
1927	14108	5218	8890	2957	8175	17065	52	......	48	......
1923–27	**14386**	**4803**	**9583**	**2705**	**7508**	**17091**	**56**	......	**44**	......

* Triennial moving average.

According to this Table the proportion annually retained by the United Kingdom has fallen from 72% in 1909-13 to 56% in 1923-27. Apart from some considerations later to be taken into account, this method of calculation understates the outside market somewhat, since to make all values comparable those in Col. 5 should be the C.I.F. values of the importing countries instead of exports. Since no complete information is available of the total imports of our wool into these countries, no correction can be made for this error.

TABLE VII.

VALUE OF NEW ZEALAND RAW WOOL ABSORBED BY VARIOUS MARKETS.

Values in thousands of £.

Year	Exports to U.K.	Re-exports from U.K.	Retained by U.K.	Direct Exports to other than U.K.	Total taken outside U.K.	Total taken by all	Percentage of Total taken by: U.K.		All Others	
	1	2	3	4	5	6	7		8	
1909–13	**6763**	**1869**	**4894**	**475**	**2344**	**7238**	**68**		**32**	
1914	8325	2549	5776	982	3531	9307	62	*	38	*
1915	9550	845	8705	836	1681	10386	84	77	16	23
1916	10864	376	10488	1520	1896	12384	85	87	15	13
1917	11393	263	11130	781	1044	12174	91	82	9	18
1918	5596	283	5313	1931	2214	7527	70	85	30	15
1919	18501	574	17927	687	1261	19188	93	84	7	16
1920	11862	1220	10642	2	1222	11864	89	85	11	15
1921	4741	889	3852	479	1368	5220	74	77	26	23
1922	10998	2790	8208	885	3675	11883	69	64	31	36
1923	9078	4104	4974	827	4931	9905	50	53	50	47
1924	11564	5467	6097	3711	9178	15275	39	48	61	52
1925	14036	4750	9286	3703	8453	17739	53	45	47	55
1926	9501	4475	5026	2327	6802	11828	42	44	58	56
1927	10034	5218	4816	2957	8175	12991	37	......	63	......
1923–27	**10843**	**4803**	**6040**	**2705**	**7508**	**13548**	**44**	......	**56**	......

* Triennial moving average.

This Table inverts the proportions as shown in Table VI. The proportion annually retained by the United Kingdom for 1923-7 is given as 44%. There can be no doubt that the United Kingdom market is considerably understated. The deduction of English values of re-exports from New Zealand values of exports to the United Kingdom diminishes the net amount retained by too much. The Table is of no value, except as part of the process of elimination necessary before a more satisfactory statement can be made.

TABLE VIII.

AMOUNT OF NEW ZEALAND RAW WOOL ABSORBED BY VARIOUS MARKETS.

Volume in Parcels of 1000 lbs.

Year	Exports to U.K.	Re-exports from U.K.	Retained by U.K.	Direct Exports to outside U.K.	Total taken outside U.K.	Total taken by all	Percentage of Total taken by: U.K.		All Others	
	1	2	3	4	5	6	7		8	
1909–13	**175428**	**40805**	**134623**	**12247**	**53051**	**187675**	**72**		**28**	
1914	195612	51961	143651	24861	76822	220473	65	*	35	*
1915	183011	11571	171441	13573	25143	196584	87	79	13	21
1916	162452	4562	157890	23055	27617	185507	85	88	15	12
1917	168062	2737	165325	10212	12949	178274	93	83	7	17
1918	80503	2211	78291	28222	30433	108725	72	85	28	15
1919	258388	4516	253872	15859	20375	274247	93	86	7	14
1920	162302	9479	152823	26	9505	162328	94	88	6	12
1921	145386	19685	125701	13329	33014	158715	79	82	21	18
1922	292176	56810	235366	29357	86167	321533	73	69	27	31
1923	181720	64235	117485	35846	100081	217566	54	57	46	43
1924	154203	63506	90697	52041	115547	206244	44	51	56	49
1925	162039	50993	111046	43688	94681	205727	54	50	46	50
1926	169747	59072	110675	43407	102407	213154	52	50	48	50
1927	169074	71328	97746	51427	122755	220501	45	......	55	......
1923–27	**167357**	**61827**	**105530**	**45282**	**107109**	**212639**	**50**	......	**50**	......

* Triennial moving average.

The United Kingdom market is here shown to have absorbed, for the period 1923-7, about half our wool exports. This calculation, on a volume basis, is more satisfactory than those dealing with values since none of the complications in regard to costs and methods of valuation enter. Nevertheless, the amount retained by the United Kingdom market (Col. 3) does not agree with the figures given in the English statistics which are arrived at by deducting re-exports from imports into the United Kingdom. Table IX. shows the result when imports into the United Kingdom are employed in place of exports to the United Kingdom.

TABLE IX.

AMOUNT OF NEW ZEALAND RAW WOOL ABSORBED BY VARIOUS MARKETS.

Volume in Parcels of 1000 lbs.

Year	Imports to U.K.	Re-exports from U.K.	Retained by U.K.	Direct Exports to other than U.K.	Total taken oustide U.K.	Total taken by all	Total Recorded Exports from N.Z.	Percentage of Total (Col. 6) taken by: U.K.		All Others	
	1	2	3	4	5	6	7	8		9	
1909–13	**181136**	**40805**	**140331**	**12247**	**53051**	**193383**	**187675**	**72**		**28**	
1914	184608	51961	132647	24861	76822	209469	220473	63	*	37	*
1915	200052	11571	188462	13573	25143	213605	196584	88	79	12	21
1916	157853	4562	153291	23055	27617	180908	185507	85	88	15	12
1917	142105	2737	139368	10212	12949	152317	178274	91	83	9	17
1918	89299	2211	87088	28222	30433	117521	108725	74	86	26	14
1919	254196	4516	249680	15859	20375	270055	274247	93	87	7	13
1920	154196	9479	144717	26	9505	154222	162328	94	89	6	11
1921	148315	19685	128630	13329	33014	161644	158715	80	83	20	17
1922	304675	56810	247865	29387	86167	334032	321533	74	69	26	31
1923	181100	64325	116866	35846	100081	216946	217566	54	59	46	41
1924	178631	63506	115124	52041	115547	230672	206244	50	53	50	47
1925	172491	50993	121498	43688	94681	216179	205727	56	54	44	46
1926	184187	59072	125115	43407	102479	227587	213154	55	54	45	46
1927	192428	71328	121100	51427	122755	243855	220501	50	......	50	......
1923–27	**181767**	**61827**	**119940**	**45282**	**107109**	**227049**	**212639**	**53**	......	**47**	......

* Triennial moving average.

The United Kingdom is here credited with retaining 120 million lbs. annually for 1923-7, as against the 105½ million lbs. shown in Table VIII., and the percentage proportion when calculated on the totals shown in Col. 6 is 53 as against 50 shown in Table VIII.

Omitting Table VII. from consideration, it will be seen that the percentage proportions attributed to the United Kingdom range from 50 to 56 for 1923-7; while for 1909-13 all the Tables give 72 as the figure for the pre-war period. It is difficult to decide which is the most probable value to select for recent years, but there are reasons which suggest that the highest figure, 56, is best.

These reasons relate to the fact that the totals as shown in Col. 6 above exceed the totals in Col. 7 by about 14½ million lbs. per annum for 1923-27. In other words, the markets for our wool are shown in Col. 6 to have absorbed in this time about 72 million lbs. more than we have exported. The explanation may be that some wool, recorded in our statistics as an export to say, Europe, is diverted en route to England. In such an event England would record a larger import of wool than is shown in our statistics of export to her; while Europe would actually receive less wool by direct shipment from us than our export figures indicate. The case is well stated by Mr. Malcolm Fraser, Government Statistician, in a letter commenting on this matter. "The difference has struck us here also at different times, but we can only guess at some matters which may be affecting the position. For instance, a great deal of wool shipped from New Zealand is on what might be called an open consignment bill of lading, i.e., it is shipped to London or alternatively to some fourteen other ports, several being Continental. It is possible that wool leaving here with a Continental destination and treated in our statistics as a Continental export to either Germany, France, Italy, Holland, Denmark, or Sweden or some other Continental country, may be transhipped at an English port and is perhaps treated in the United Kingdom statistics both as an import from New Zealand and a re-export. Then of course, wool shipped from New Zealand on consignment to the London sales may be there brought by a foreign buyer and would be a re-export in the United Kingdom statistics. Wool shipped from New Zealand by other than United Kingdom buyers would be treated in our statistics as an export to the country of the buyer, but if on reaching England the London sales had improved the buyer might there offer the consignment at the London sales. Such wool would then be treated as an import by the United Kingdom although it had left New Zealand as an export to some Continental country. All this, however, is purely guesswork, and we have been unable so far to ascertain any satisfactory reason to account for the apparent discrepancies."

Similarly H.M. Trade Commissioner (Mr. Paish), writes:—"One possible solution, though it hardly commands complete confidence, is that the wool exported from New Zealand and intended for ultimate consumption on the Continent may have been diverted to use in the United Kingdom and for a time pass through the Customs there even when subsequently re-exported." And the same general opinion is held by several members of the trade who have been consulted on the matter.

On occasions, of course, the diversion en route may be away from England and to the Continent, in which case more wool will have entered Europe by direct shipment than is recorded in our statistics. But in order to give the United Kingdom the full benefit of the ambiguity we can assume that all of the 72 million lbs. excess is accounted for by diversion en route from outside markets to the United Kingdom. If this is done these diverted cargoes must be subtracted from the amount previously attributed to "outside countries."

D.—FINAL ESTIMATE OF UNITED KINGDOM AND OTHER MARKETS:

TABLE X.

AMOUNT OF NEW ZEALAND RAW WOOL ABSORBED BY VARIOUS MARKETS.*

Year	Retained by United Kingdom (Col. 3 of Table IX.)	Total Recorded Exports from New Zealand	Total Retained outside United Kingdom	Percentage of Total taken by: U.K.	All others
	1	2	3	4	5
1909–13	**140331**	**187675**	**47344**	**75**	**25**
1914	132647	220473	87826	61	39
1915	188462	196584	8122	96	4
1916	153291	185507	32216	83	17
1917	139368	178274	38906	78	22
1918	87088	108725	21637	80	20
1919	249680	274247	24567	91	9
1920	144717	162328	17611	89	11
1921	128630	158715	30085	81	19
1922	247865	321533	73668	77	23
1923	116866	217566	100700	54	46
1924	115124	206244	91120	56	44
1925	121498	205727	84229	59	41
1926	125115	213154	88039	59	41
1927	121100	220501	99401	55	45
1923–27	**119940**	**212639**	**92699**	**56**	**44**

* None of these Tables includes woolled sheep-skins.

This is probably the most conservative estimate of the importance of the "outside market" that can be made with available statistics. The probabilities are, I think, that this Table credits the United Kingdom with rather more than its due share of our total wool trade. Even so the results are interesting enough. In 1909-13 the United Kingdom retained 75%, or 140 million lbs., annually, of our total wool exports. By 1923-27 the proportion had fallen to about 56%, or 120 million lbs., annually. The increase in the amount taken by other countries has more than compensated for this recession since it has arisen from about 47 million lbs. annually to over 92 millions in 1923-27.

In accounting for the difference between New Zealand recorded exports and the United Kingdom recorded imports, no allowance has been made for possible changes in weight during transit. It is well known that the weight of any given lot of wool varies within wide limits in accordance with climatic conditions, but in the absence of exact information concerning New Zealand shipments in this respect, it was thought inadvisable to attempt to assess this factor statistically.

The construction of a Table, in terms of value, similar to Table X., presented too many possibilities of error to make the results worth presenting. Not only differences in methods of valuation in different countries, but wide variations over the period in costs of shipment, the task of converting a complicated series of unstable currencies into terms of our money and the impossibility of obtaining here adequate statistical information from importing countries in regard to their total imports of our wool, effectively destroyed any confidence in the conclusions obtained.

E.—THE EUROPEAN MARKET:

Further, to complete the tale of limitations, it was found impossible to estimate the proportion of our wool taken by Europe. That this proportion is a large and growing one is beyond doubt. It is probable that about 80% of the United Kingdom re-exports of our wool go to Europe, this being the proportion of the total United Kingdom re-exports in cross-bred wool taken by the Continent in the years 1926-7.[9] It would be a useful service for a statistical organisation with appropriate facilities to collect information that would enable us to check up the movements of our markets. If, to an analysis of re-exports, were added data showing the direct imports of each of the more important countries, we would possess an effective means of tracing diversions of wool cargoes on the water. And we would be able to substitute a reassuring certitude for our present statistical speculations.

The changes in the trend of our wool trade which the foregoing analysis has revealed are related to changes in the economic conditions of the major wool textile industries of the world. In the next two sections, therefore, a brief account is given of the course of industrial activity in the wool textile trades of England, Continental Europe, the United States and Japan.

9 An. Statement of Trade of United Kingdom with Foreign Countries, 1927, Vol. II., p. 549. No statistics on this classification are available prior to 1926.

II.—COURSE OF INDUSTRIAL ACTIVITY IN THE ENGLISH WOOL TEXTILE INDUSTRY: [1]

The English wool textile industry has been in a depressed condition for several years past. In the early part of 1921 it suffered severely but in the latter part of that year and in 1922 it was active and prosperous. At the beginning of 1923 mills were running full time; but the French occupation of the Ruhr dealt a very heavy blow to England's trade with Germany in wool and partly manufactured textiles. A gradual recovery, most noticeable in the woollen section, took place early in 1924. In 1925 there was a slump (although different sections of the industry were affected to different degrees) due largely to extravagant buying at high prices in 1924 when a shortage of supplies was anticipated. The subsequent rapid decline in prices seriously handicapped the industry which had to work on stocks bought too dear. "Moreover, the break in wool prices occasioned caution and uncertainty among consumers in all sections of the industry. Throughout the post-war period the high, and perhaps particularly fluctuating, price of wool has constituted a serious adverse factor in production." [2] The slump was accentuated by labour troubles arising out of intended reductions in wages. After a strike of several weeks, Arbitration restored the old rates.

At this stage, the competition of Continental countries, France, Belgium and Italy, whose exports were stimulated by the external undervaluation of their depreciating currencies, became severe in respect of some wool textile products. It is interesting to note that although the total English imports of French tissues in 1925 were less than half the average imports for the pre-war quinquennium yet "the competition of certain classes of French goods was very severely felt by manufacturers in Bradford and other centres." [3] It had become increasingly evident that the industry was faced with the competition of countries which previously had been largely supplied by England; with increasing competition in overseas markets by countries with depreciating currencies; and with increasing competition from the same source in certain sections of the Home market.[4]

In 1926 there was a trade paralysis due to the Coal Stoppage and the General Strike, but some recovery in the wool textile industry took place. Considerable depression prevailed in important

1 Survey of Textiles, pp. 204-17; Dalgety's Annual Reviews; Dawson & Co.'s Statistical Review, 1912-27, passim.
2 Survey of Textiles, p. 211, footnote.
3 Survey of Textiles, pp. 202-3.
4 Survey of Overseas Markets, passim; Dalgety's An. Rev.; Survey of Textiles, pp. 199-200; An. Rev. N.A.W.M., 1927, p. 180.

sections of the industry in 1927. As a whole the industry lacked confidence, bought from hand-to-mouth and worked in fitful bursts of activity. At the same time the interruption of normal trade with China was a serious set-back in the heavy woollen district Since 1927 the same dullness and lack of confidence has characterised the industry generally. The year 1928 was dull and unprofitable, and Bradford was apparently unable to produce profitably after paying prices for wool which were not considered too high by Continental manufacturers.[5] "It is persistently stated that the solution of England's textile trade troubles is cheaper raw materials. It is difficult to see how Bradford can stand up to outside competition any better with cheaper wool, unless she can obtain it on more favourable terms than rival wool-using countries, and this is not practicable."[6]

The difficulties of the English industry are, of course, symptomatic of the economic dislocations which were accentuated, where they were not initiated, by the war. There has obviously been a re-distribution of trade throughout the world owing partly to the development of industries in countries once largely dependent on England. The character of the English trade has also changed, "resulting in loss of business to those engaged in the manufacture of lustre goods and low-grade heavy woollens."[7] Discussing Britain's share of world trade in wool textile manufactures the Committee of Industry and Trade conclude that on a value basis England in 1924 and 1925 had not lost ground relatively to other exporting countries, and in 1926 had lost only little; but on a volume basis she had lost considerably.[8] Neither basis of comparison is entirely satisfactory since volume ignores qualitative differences while values tend to understate the importance of exports from countries with depreciated currencies.[9]

A closer analysis of the various sections of the industry shows that between 1909-13 and 1924-26 there was a substantial decline in the quantity of tops and yarns exported, "the decline in the quantity exported to Western Europe being more than sufficient to account for the decrease in the total."[10] There was a marked recovery in 1927 but another sharp decline in 1928.[11]

The export trade in woollen tissues in 1924-8 was, on the whole, maintained as compared with 1909-13, but that in worsted

5 Dalgety's An. Rev., 1928-9, p. 102.
6 Ibid., p. 102.
7 Survey of Textiles, p. 170.
8 Ibid., pp. 175 and 221.
9 Ibid., p. 221.
10 Ibid., p. 192.
11 Survey of Textiles, p. 192; Dalgety's, 1928-9, p. 105; Dawson's Stat. Rev., 1912-27, pp. xvi and 7.

tissues appears to have fallen by half and shows a continuous decline except for a slight recovery in 1928. The marked decline in woollen tissues exported to Western Europe was compensated by increases in the exports to Japan, China, Hong Kong and the United States. In the case of worsteds, the exports to Western Europe fell off by about five-sixths; there was a marked contraction in the exports to the United States and smaller recessions in the trade with Eastern Europe and the Far East. Both woollens and worsteds have been exported in considerably less quantities to the important South American market, while practically all the Empire markets show large declines in worsteds and smaller declines in woollens. In the less important sections, flannels and delaines, and blankets, changes in the direction and distribution of the trade have also occurred.[12]

The aggregate import of wool textile products into the United Kingdom is nowadays much below the level of the pre-war years, and therefore any decline in the Home demand cannot, in general, be attributed to foreign economic invasion. In certain classes of goods, however, notably dress materials, in which French competition in the English market is severe, and in wool carpets and rugs, the English manufacturer has been hard pressed.[13]

While the English export trade in woollen tissues appears to be maintained relatively to other countries, the great decline in the export of worsteds is a serious matter and requires some explanation. The Committee of Industry and Trade presents the evidence of the West Riding Chambers of Commerce on this point.[14] The chief factors affecting the decline are held to be:—

(a) Changes in fashion, particularly in regard to women's dress. There has been a growing preference for cotton, silk, and artificial silk wear, and for knitted rather than woven garments; a diminished amount of material per dress and a smaller demand for linings. Continental craftsmanship has apparently been more successful in meeting these changes than English.[15]

(b) High costs of production owing to the highly specialised nature of the processes. These costs have increased more than the wholesale price of commodities in general.

(c) High costs of dyeing.

(d) More intense competition from the Continent.

12 Survey of Textiles, pp. 195-7; Dalgety's, p. 106; Dawson's Stat. Rev., 1912-27, pp. xvii. xviii. and 7, 12.

13 Survey of Textiles, pp. 199-203.

14 Ibid., 212-217.

15 The reasons are set out in an article in the Journal of Textile Science, June, 1929, pp 20-23.

The decline in the Home Trade is attributed to:—

(i) Reduced purchasing power through decline in real wages, increase in unemployment, and increase in taxation.

(ii) Competition of such luxuries as motor cars and cycles, wireless, cinemas.

(iii) High retail prices of wool textile goods.

Some more general interpretations of the depressed state of the industry may now briefly be considered. The Wool Record, commenting on the re-distribution of trade through the development of textile industries in other countries, says: "There is too much machinery and too many firms competing for what, after all, is a limited demand—limited in the sense that the purchasing power of the public is restricted, and limited also by the dictates of fashion."[16] With this opinion, many writers in trade Journals agree.[17] Existing plant and equipment is not being utilized to its full capacity. There appears little doubt that the English industry is suffering severely from a legacy of high overhead costs which are being scaled down by the slow and painful process of dissolution in the weaker units. The burden of these costs has been accentuated by high taxation and by a system of local rating which has pressed heavily on the more depressed industrial areas.[18]

England is faced with the fact that she has long since lost the industrial advantages she had over other countries in the 19th century. "The loss of advantage in mechanical construction over other countries, and the inability to adjust the economic position by wages and hours as easily as formerly, is producing a set of conditions which calls for a new orientation of industrial organization if we are to continue to maintain the position we have held in the past."[18a] One of the most important modern developments is "rationalization," which may be defined as "the method of technique and organization designed to secure the minimum waste of either effort or material. It includes the scientific organization of labour, standardization both of materials and products, simplification of processes, and improvements in the system of transport and marketing."[19] Rationalization has developed rapidly in recent years in the United States and on the Continent; and in certain old and most new industries in England. But little has been achieved in the Woollen and Worsted Industries.[20] It is

16 Quoted Meat and Wool, Feb. 11th, 1929, p. 5.

17 Dalgety's, 1928-9, p. 102; Times' British Empire Products Number, 1929; An. Rev. N.A.W.M., 1927, p. 180, 185; Dawson's Stat. Rev., 1912-27, p. xii.

18 Liberal Industrial Inquiry, cp. XXXI.; Quarterly Journal of Ecs., Aug., 1929, pp. 697-712.

18a Journal Textile Institute, March, 1929, pp. 47-53; Liberal Industrial Inquiry, pp. xxi.-xxiii.

19 See Auckland C. of C. Journal, Oct., 1929, pp. 14-16; League of Nations' "Memo. on Rationalisation in United States'; Meakin, "The New Industrial Revolution"; Journal of Textile Institute, Nov., 1928, pp. 261-7.

20 Manchester G. Com. An. Rev., 1929, p. 25.

perhaps not too much to say that the following comment has some application to this particular case: "None the less, it is true, we think, that there is much remediable inefficiency in British industry; and that particularly in the long-established industries there is too often a wrong tradition—individualism instead of co-operation, secretiveness instead of publicity, neglect of marketing, indifference and often hostility to research."[21] Trade leaders in the industry itself have not been wanting in saying much the same thing. "A complete re-organization of productive and distributive methods was advocated, together with greater attention to research and technical efficiency, whilst the creation of larger units was suggested as a practical road along which to travel towards such a goal."[22] The size of the industrial units in the wool textile industry in England is small and although some concentration of mill ownership has occurred in recent years it has taken place chiefly in the combing, dyeing and finishing sections. "In this country mass production hardly exists."[23]

Yet in comparing the development in this industry with the progress made by the same industry in other countries, and by other industries in England, it is necessary to appreciate the difficulties of the situation. On the Continent, inflation and the stabilization of currencies on levels below those that had ruled during the post-war reconstruction period, completely or partly wiped out many capital liabilities incurred during or before the reconstruction and materially lightened annual real capital costs; but in Britain deflation and the eventual restoration of the Gold Standard on its pre-war basis had no such encouraging effect.[24] The full burden of heavy annual charges on account of large capital commitments incurred when prices were very high has pressed with increasing severity on the industry as prices have declined.

The monetary situation that provided a strong incentive to industrial re-organization and re-equipment on the Continent thus found no counterpart in England.[25] And the English industry can find little consolation in reflecting that certain sections of the people on the Continent have had to pay a dear price for the recovery of their industrial life.[26]

Apart from these considerations, rationalization in the Wool Textile Industry is peculiarly difficult. It is limited by the many types and qualities of the raw material, and by continual changes

21 Liberal Industrial Inquiry, p. 127; Survey of Textiles, p. 185.
22 Dalgety's, 1928-9, p. 102.
23 Survey of Textiles, pp. 184 and 175-88.
24 Dawson's Stat. Rev., 1912-27, p. xv.
25 Auckland C. of C. Journal, Oct., 1929, p. 15.
26 See Manchester G. Commercial An. Rev., 1929, p. 27, and Gregory "First Year of the Gold Standard" for considerations bearing on this point.

in fashion. Particularly in the case of England is this latter consideration of importance since she is still by far the most important exporting country in wool textiles. The wide range of markets which the English manufacturers have to supply calls for much more diversity in production than the comparatively uniform internal market which is the predominant concern of the American industry, for example.[27] From this point of view the problem in England appears to be, to so re-organize that she can still retain the necessary versatility in the trade while eliminating much of the present wasteful versatility in individual firms.[28] Such a task is obviously difficult; and when we are told that "even the limited standardization as is implied by the reduction in the number of sizes in which blankets are made—a development which has taken place in the United States—is considered by the trade to be impracticable here owing to the different tastes of the export markets,"[29] the task seems hopeless. Yet, that the competitive position of the British industry can hardly be restored without recourse to some comprehensive plan of re-organization is an opinion held by many.

Whatever causes of the present situation a more adequate analysis might reveal, it is clear that the British industry needs to adjust its costs of production to a competitive level; and it is evident that lower prices of the raw material are unlikely to provide it with any advantage over its rivals to whom such a reduction would be equally available. The "Economist" urges a more determined effort on the part of employers and employees to meet present realities. "Drift and uncertainty have played havoc with the industry for nearly two years. It is to be hoped that both employers and workers will now forget the futile manoeuvring in these years and co-operate to share the burden of adjusting the cost of production to the price the consumer will pay for the cloth on which the industry depends."[30]

Many of the factors which have adversely affected the industry no longer exist; and the continued depression can therefore be due only to more permanent causes. For one reason or another the English industry has so far been unable or unwilling to adjust itself to those changing conditions which constitute the present-day industrial revolution. One by one the temporary causes which have served, sometimes as an excuse, sometimes as a valid explanation, of economic distress, have disappeared: and now, after ten years, there are few signs that the task of readjustment has been seriously undertaken.[31] And while it would

27 Survey of Textiles, p. 184; An. Rev. N.A.W.M., 1927, p. 184.
28 Journal Textile Institute, Nov. 1928, pp. 265-7.
29 Survey of Textiles, p. 184.
30 Economist: "Wool and Wages," July, 1929.
31 Manchester G, Commercial An. Rev., 1929, p. 27.

perhaps be unwise to attempt to assess future probabilities on the basis of a decade so disturbed as that immediately following the war, there is little in the way of achievement in this period to warrant optimism. So far as it is possible to judge a difficult situation from so great a distance, it appears that the British industry is on the defensive, and is more eager to discern possible weaknesses in its rivals than to strengthen itself. To New Zealand, which has for so long found its major wool market in the United Kingdom, any rapid recovery which depends on the concerted efforts of English manufacturers seems highly improbable. As the Liberal Industrial Report remarks: "In certain sections of the coal, textile and steel industries those upon whom responsibility lies seem to outside observers to have proved themselves unequal to dealing with the new problems which confront them."[32] And those who are closely associated with the trade have said that "methods of production in this country in textiles have not shown any substantial progress for at least a quarter of a century" and that there was still no sign of any combination of effort for reducing overhead charges."[33]

It may indeed be that the basic difficulties of the industry are insoluble at present. If this is so, we are left with genuine regrets but no authentic hopes for recovery. If it is not so, we are left to marvel at such a meagre record of co-operative endeavour.

32 Liberal Industrial Inquiry, p. 42.
33 Dawson's Report, quoted An. Rev. N.A.W.M., 1927, pp. 182-5.

III.— CONTINENTAL AND OTHER DEVELOPMENTS.

A.—FRANCE.

One of the most striking features of the post-war situation in regard to textiles has been the rehabilitation of the European woollen industry, notably that of France. In general, the French wool textile industry lost, during the war, all its combing machines, three-fourths of its spindles, and two-thirds of its looms; or roughly about 80 per cent. of its plant and equipment.[1] A stupendous effort was required to replace these enormous losses. The effort resulted in organising and equipping an industry of the most modern type. "In proportion to the size of the industry, this machinery probably represents the most highly effective wool-handling equipment in the world."[2] Re-equipment and the general re-organization of the industry now enables France to handle a larger volume of business than before the war, and has greatly increased her competitive power.[3]

The economic causes behind this great recovery are not always unambiguous. General industrial development was partly due to the necessity, during the war, of expanding existing and creating new undertakings outside the immediate war zone. After the war the acquisition of new territories was a material factor in development. Thus the recovery of Alsace, a highly efficient industrial area, added 560,000 spindles and 9,000 power looms to the industry.[4]

The monetary policy of France was also of great assistance. During the period of depreciation there were occasions when French exports were stimulated through the maladjustment between the internal and external values of her money. Any maladjustment which externally undervalues a currency must promote exports. In these circumstances the foreign buyer could command on the exchanges more francs for his own money than were necessary to compensate for the rise in French prices. In other words, he surrenders less of his own money than formerly for the same goods; he gets them more cheaply. The expansion of French trade in 1926 is to be explained partly on these grounds. France was exporting under the stimulus of a depreciating currency which was externally undervalued.[5]

1 Effects of the War upon French Economic Life: Alftalion (Carnegie).
2 Dalgety's, 1925-6, p. 82; 1928-9, p. 109; Quarterly Review, April, 1927, "Industrial Outlook of France" (Hon. George Peel); The Survey of Textiles, p. 243, estimates French efficiency more conservatively.
3 Dalgety's, 1928-9, p. 109.
4 Dalgety's 1928-9, p. 110; Survey of Textiles, p. 243.
5 See the works of such writers as Cassel, Gregory, Hawtrey, Keynes; Survey of Textiles, p. 222.

The rise in the external value of the franc in the latter part of 1926 and subsequent stabilisation, removed some of the abnormal advantages previously enjoyed by French exporters and reduced the competitive power of producing units of inferior efficiency. "The rapid rise in the external value of the franc should in itself have been sufficient to add to the difficulties of the export trades and the evidence suggests that these have been experienced." [6]

It may be noted here that the methods of stabilization adopted in England and in France were very different. In England the value of the currency was raised to gold parity, a process that meant a depression of the price level. It is conceivable that not even England could have achieved its objective had not the value of gold fallen sharply as a result of the diminished demand for it after the war. [7] But the lowering of prices was acute enough to contribute towards depression in British industry, particularly in the iron and steel group.

France, however, elected not to attempt the impossible task of deflating to the old gold parity. She devaluated and stabilized on a new par. Such a method recognises a new and higher level of prices related to outside prices by a new par of exchange. "When legal stabilization of the franc was effected, France, contrary to the experience of Great Britain, was under no necessity to reduce prices in order to bring them to the international level, and in consequence, has been able to avoid many of the difficulties which have confronted this country (Great Britain) . . . In spite of the disadvantages which inflation brought in numerous directions, it helped to reduce the burden which would otherwise have fallen upon industry as a result of the heavy capital costs of reconstruction. Inflation also assisted in reducing the real burden of the National Debt and therefore of taxation, besides helping, in greater or lesser degree, to keep wage and other production costs, and, in consequence, French prices, at a low level in terms of gold." [8]

This is not to suggest that the French monetary policy would have been wise for England. The two countries are dissimilar in many respects; and it is conceivable, if not universally accepted, that England would have lost more than she could have gained by lowering the gold value of the £. In the case of France, devaluation was of considerable help in the task of reconstruction, although it has not, of course, been the sole factor.

France is now probably the most important single consumer of sheep and lamb's wool in the world, although statistics of con-

6 Jones: "Restoration of European Currencies," p. 132; Gregory: "First Year of the Gold Standard"; Memo. of Roy. Ec. Soc., No. 6; Dalgety's, 1927-8, p. 116.

7 Cannan: "Money," Pt. III.; Hawtrey: "Monetary Reconstruction" (2nd Ed.), p. 139, and "The Gold Standard," pp. 90-93.

8 Barclay's Monthly Review, January, 1929, pp. 4-6.

sumption admit of only the most cautious interpretation. In an opinion expressed in Dalgety's Review (1928-9, p. 110): "The French industry to-day is greater and sounder than ever before in its history."[9] This is not to say that France has entirely escaped the depression and difficulties felt in the United Kingdom and elsewhere; but in general she has felt them less severely. Whether she has yet to face a period of more acute depression than has yet been her lot, cannot be determined.[10]

B.—BELGIUM, GERMANY, ITALY, ETC.

In other wool-consuming sections of Europe there has also been great expansion. Belgian mills did not suffer nearly as much as the French during the war; and after the war some additional mills were acquired through the transfer from Germany of Eupen and Malmedy.[11] Considerable reconstruction and re-organization has taken place and Belgium now possesses a highly competent industry capable of expansion.

Germany, in pre-war days the third wool-consuming country after Great Britain and the United States, is rapidly emerging from the economic chaos of the war. The cession of Alsace to France, the collapse of the mark, the French occupation of the Ruhr, and internal political difficulties seriously menaced her industrial life and so paralysed her wool industry that in 1923 its complete break-down was predicted.[12] Since then her use of wool has annually increased until now her consumption is not far below that of pre-war years.[13] Here again the period of recovery has permitted the introduction of modern equipment and the application to the industry of that scientific and organizing ability for which the German peoples are renowned.[14] The increased activity of Germany is attributed largely to progressive trade with Russia with which country she has close trading relationships.[15]

The Italian wool textile industry has shown continued and rapid expansion during and since the war, partly as the result of water-power developments. It is now one of the chief wool industries of the world. There have been great increases in the number of combs, spindles and power looms; and the mills are equipped on modern lines. Remarkable increases in the exports of wool felts, blankets and unprinted woollen and worsted tissues have brought the Italian industry more and more into competition with British trade.[16]

9 For the statistics see Survey of Textiles, pp. 243-6.
10 Dawson's Stat. Rev., 1912-27, p. xiv.
11 Survey of Textiles, p. 246.
12 Dalgety's, 1923-4, p. 76.
13 Territorial changes materially affect the comparability of pre-war and present statistics. See Survey of Textiles, pp. 247-51.
14 An. Rev. N.A.W.M., 1927, p. 185.
15 Dalgety's, 1928-9, p. 112; 1925-6, pp. 82-3; Dawson's Stat. Rev., 1912-27, pp. xxvii.-xxviii.
16 Survey of Textiles, pp. 218, 251-3; Dawson's Stat. Rev., 1912-27, p. xxxi.

Czechoslovakia and Poland both have big wool textile industries but are faced with difficulties of finding external markets to replace the internal ones they lost in the Treaty settlement.[17]

Since 1913 there have been large developments in the Japanese industry where the retained imports of raw wool are now about six times as great as those in the years just before the war. The increasing adoption of European clothing, however, has caused the demand to outstrip increased production, so that imports of manufactured goods have also increased. In the opinion of observers, Japanese manufacturers are likely before long to extend their production sufficiently to cover most of their requirements. The industry is now producing "a bigger proportion of its own tops and yarns than was formerly the case, and there are definite indications now that a determined effort will be made within the next few years to make the industry as nearly self-supporting as possible in yarns, apart from specialities . . . The developments indicated above can have only one meaning, viz., that Japan is gradually becoming self-supporting in woollens, as she has already become in cottons. In a long view of the situation, the conclusion is inevitable that imports will be confined first to raw wool, and secondly, to certain specialities, and British representatives on the spot have no hesitation in declaring that the Japan market is becoming more difficult for them every year."[18]

These developments have been reflected in a remarkable increase in purchases of raw wool, and there is every reason to expect a continued expansion of our exports to this market.

C.—UNITED STATES.

The United States of America is one of the chief wool-consuming countries of the world; but her production is almost exclusively for the internal market. The comparative uniformity of this market, the large demand, and the habit of buying ready-made clothing have been factors facilitating the development of standardization and mass production. In general the industry shows a larger typical magnitude in producing units and is more closely integrated than is the case in older manufacturing countries.[19]

The last five years (1923-7) have witnessed a decline in her wool consumption from the preceding five-year level, to a level which is below that of 1913-7. Consequently with the considerable increase in equipment which has occurred since pre-war days, the

17 Survey of Textiles, pp. 253-6, 218.
18 Dalgety's, 1928-9, p. 139; Dawson's Stat. Rev., 1912-27, p. xvi.; Survey of Textiles, pp. 267-8.
19 Survey of Textiles, p. 257.

industry has recently been depressed and has been unable fully to employ all its machinery.[20]

The negligible quantity of exports reveals how largely the industry is dependent on high tariff protection. Since the tariff policy shows no sign of downward revision, the tendency is for the industry to become more self-sufficing as is shown by the great decrease in the imports of tops. In the case of woollen and worsted woven fabrics there has also been a great decline in the aggregate volume of imports; although the quantity imported from the United Kingdom shows no diminution. "In view of the very heavy tariff rates in force, it seems probable that these imports consist mainly of goods which, by reason of their high quality or special character, meet a demand which cannot be supplied by the American industry."[21]

From the point of view of wool-producing countries the noticeable features of recent years are the increase in the volume of wool locally produced and the decline in imports of raw wool. The United States normally produces about half her current needs in wool. Recently, domestic production has increased and since 1925 it has been somewhat above the pre-war level. In 1922 the lowest level of home production was reached since 1897; but in 1927 the output reached a figure (328 million lbs.) which had been equalled before on three occasions only.[22] According to Mr. Clyde McCarroll the domestic wool-growing industry is on a sounder basis to-day than ever before, and has possibilities for further expansion. In his view the decline in per capita consumption in the United States has been more than offset by increased population and the development of new uses for wool. To an increasing extent (apart from wools that cannot be locally produced) this demand will be met, he anticipates, by the expansion of domestic production.[23]

D.—STATISTICS OF IMPORTS AND CONSUMPTION OF WOOL:

In the following tables approximate statistics of net imports (in this case total imports less total exports) of wool are given, together with figures bearing on the apparent consumption of wool by the chief wool-consuming countries. The figures are to be looked upon as no more than rough indicia of the trend of trade in each country; and comparisons as between one country and

20 Smith: "Tariff on Wool," pp. 135-6, 139, 161; Dalgety's, 1923-4, p. 91; 1927-8, p. 125; 1928-9, pp. 117-8; Textile Journal, Sept., 1929, article by Hiram T. Nones; Dawson's Stat. Rev., 1912-27, p. 47.

21 Survey of Textiles, pp. 258-60.

22 Commerce Monthly, Nov., 1928, p. 3.

23 Commerce Monthly, Nov. 1928, pp. 4, 26; see also Textile Journal, Sept., 1929, article by Hiram T. Nones.

another in any one year cannot validly be made. In the case of consumption figures, it must be clearly understood that they do not necessarily represent the quantities of raw material actually manufactured in the respective years; since stocks may be carried over from one year to another. Moreover, as is noted in the appropriate place, allowance has to be made for B.A.W.R.A. stocks held in the United Kingdom. [24]

TABLE XI.

NET IMPORTS OF WOOL [25]

(Millions of lbs.)

Year	France	Germany	Belgium	Italy	United States	Canada	United Kingdom
1909–13	517	439	104	26	203	7	465
1922	634	406	118	76	377	9	639
1923	533	275	112	72	394	15	303
1924	455	301	105	72	268	9	384
1925	504	280	77	72	339	7	360
1926	594	309	92	95	310	11	437
1927	627	402	38	81	267	3	454*

* Preliminary Estimates.

The net imports into the United Kingdom compiled from English sources are:—

TABLE XII.

Year	Imports	Re-exports	Domestic Exports	Total Exports	Net Imports
1910–13	800*	321†	36†	357	443
1922	1106	447	61	508	598
1923	739	413	58	471	268
1924	760	359	52	441	349
1925	727	339	54	393	334
1926	811	338	54	392	419
1927	822	347	62	409	413

* Survey of Textiles, p. 275; World's Wool, 1928, p. 33; Dalgety's, 1928-29, p. 103.

† Survey of Textiles, p. 275; World's Wool, 1928, p. 33.

It will be noted that these figures are in all years below those given in the American estimate; but both show the same percentage decline in the average of 1923-7, viz., about 19%, from the pre-war average.

24 Survey of Textiles, p. 170.

25 Compiled from U.S.D.A. Year Books: Tables on International Trade in Wool.

An approximation of the amount available for consumption may be made by taking account of the home clip. In the case of the United Kingdom the following shows the rough trend:

TABLE XIII.
APPARENT CONSUMPTION OF SHEEP AND LAMB'S WOOL.
(Millions of lbs.)

Year	Net Imports	Home Clip	Retained	Dalgety's Estimate
1910–13	443	125	568	589†
1922	598	102	700	696
1923	268	101	369 (561)*	562*
1924	349	104	453 (523)*	524*
1925	334	109	443	444
1926	419	114	533	534
1927	413	118	531	533

† 1913 only. U.S. Dept. of Commerce Trade Bull., 301, gves the 1909-13 annual averages as 588.

* Includes in 1923, 192 and 1924, 70 million lbs. of B.A.W.R.A. stocks; see Survey of Textles, p. 170.

The figures given for the home clip are taken from Dalgety's Annual Reviews. Estimates of domestic production vary according to method adopted. See Ministry of Agriculture and Fisheries: Report on Wool Marketing, 1926, p. 59.

The Table shows that in this class of wool there has been a decline in the apparent consumption in latter years. In a much more elaborate estimate of the wool consumption of the United Kingdom, the Survey of Textile Industries (p. 175) includes also Alpaca, Mohair, Shoddy, etc. The following abridgement gives the chief results.

TABLE XIV.
QUANTITY OF WOOL, MOHAIR, ALPACA, SHODDY, ETC., RETAINED IN UNITED KINGDOM.
(Millions of lbs.)

Year	Total Retained of Wool, Mohair, Alpaca, etc.	Estimated Quantity of Wool from Imported Sheep Skins	Estimated Quantity of Recovered Wool consumed	Total Quantity Retained Cols. 1, 2 and 3	Quantity of Wool, etc. Retained per head of Population
	(1)	(2)	(3)	(4)	(5)
1909–13	601	35.5	209	846	18.7
1919–23	684	28.5	104	817	17.5
1924–27	513	22	73	609	12.7
1924	481	22	69	572	11.9
1925	464	18	62	544	11.3
1926	545	22	90	658	13.6
1927	563	26	72	661	13.7

The aggregate amount of wool of all kinds available for consumption in 1919-27 was thus about 14% less than in 1909-13; and in the best year of the period 1924-27 was over 20% lower, At present it is impossible to obtain accurate and comparable statistics of wool consumption. Even the figures available from countries with highly developed statistical services do not often make clear the method of compilation; and more often than not fail to distinguish between scoured wool and wool in the grease. In the Tables which follow the sources are cited; but no close comparability as between one country and another can safely be assumed.

TABLE XV.

APPARENT CONSUMPTION OF SHEEP AND LAMB'S WOOL

(Millions of lbs.)

Year	U.K.	U.S.A.	France	Germany	Belgium
	1	2	3	4	5
1909–13	588	517	552	483	109
1920–23	587	593	455	287	104
1925–27	502	599	570	375	84*
1925	442	622	512	330	......
1926	532	596	584	351	75
1927	532	582	614	446	93

* 1926-27

Sources: Averages for 1909-13 and 1920-23 from Pratt: International Trade in Staple Commodities; derived by him from Trade Information Bull., 301 (U.S. Dept. of Commerce). Remaining years from Commerce Year Book, 1928, Vol. II., p. 701 (U.S. Dept. of Commerce).

NOTES.—

Col. 1: The figures for 1925-27 are almost identical with those given above in Table XIII.

Col. 2: Agrees very closely with the estimate to be derived from U.S.D.A. Year Book, 1928, p. 952, Table 416; and with that in Dawson's Stat. Rev., 1912-27, p. 45.

Col. 3: If the formula "Home clip plus imports less total exports of raw wool" is used, higher figures than those given result. But the estimate as shown has included combed and carded wool in re-exports because of the large amount of wool sent to France to be conditioned. (Commerce Year Book, 1928, Vol. II., p. 701, footnote).

Col. 4: Net imports plus home production yield approximately the same results.

E.—DOMESTIC WOOL PRODUCTION IN MANUFACTURING CENTRES:

The United States is the only important wool-consuming country which produces a large propotion of its own raw material. In practically all other cases, the manufacturing countries have to import by far the greater proportion of their wool requirements, while the great wool-producing countries have relatively minor manufacturing industries, The present domestic production in the United States is now somewhat above the level of the pre-war quinquennium; but most of the other chief manufacturing countries show declines in the home clip. The 1909-13 estimate of the United Kingdom most commonly given is 134 million lbs., but the average for 1923-27 is somewhere about 110 millions. The German clip has declined from an average of about 50 millions to an average of about 45 millions; that of France from about 80 millions to slightly under 50 millions. Italy seems to have maintained its local clip round about 55 millions. The Belgian clip is negligible.

French authorities in recent years have been anxious to increase the French sheep industry; and to that end have carried out extensive breeding experiments. There seems little doubt, however, that the great dependence of France, and of Europe generally, on importations to meet their manufacturing requirements will not be materially lessened by local increases in wool production.

The following Table, by comparing the amounts locally produced with those imported, gives a rough measure of the dependence of the countries listed on external supplies.

TABLE XVI.

DOMESTIC PRODUCTION AND IMPORTS OF WOOL

(Millions of lbs.)

	U.K.		France		Germany		Italy		Belgium		U.S.A.	
Year	D.P.	I.	D.P.	I.	D.P.	I.	D.P.	I.	D.P.	I.	D.P.	I.
1909-13	134	506	81	601	52	482	55	30	1	300	314	203
1925	96	414	45	540	50	299	57	77	1	101	292	339
1926	99	491	48	640	42	326	56	103	1	115	312	310
1927	118	516	47	686	39	425	56	89	1	40	328	267

NOTES.—The 1909-13 annual averages of production are computed on a greasy basis. See Australian Commonwealth Year Books from which the figures of Domestic Production (D.P.) have been taken.

Figure of imports (I.) from U.S.D.A. Year Book, 1928, p. 955. The 1927 figures are preliminary estimates.

IV.—ARTIFICIAL SILK AND ARTIFICIAL WOOL:

A.—RAYON:

The Wool Textile Industry, like other old textile industries, has been faced in recent years, not only with the shifting pressure of competition in different countries, but also with competition from artificial silk products. Behind the growing competition of Rayon lie such factors as changes in conditions of living and rapid alterations in fashions.[1]

The increasing use of motor cars of the closed-in type and the vogue of central heating, notably in America, as well as the more pervasive influence of outdoor sports for women, have combined to alter materially clothing demands. The broad effect of these and other developments has been to reduce both the yardage required in women's clothes and the weight of garments for both men and women. Woollen and cotton underwear for women has been largely replaced by Rayon and silk; while in outerwear the competition of Rayon has also been effective. In promoting this large and increasing extension of artificial silk, lower prices, multiplicity of attractive designs, the wide adaptability of the fabrics to many demands, have been important factors.

The reduction in weight in underwear and dresses led to a demand for heavier coats. Unfortunately for wool, the cheaper furs were requisitioned to meet women's demand in this respect. Modern " art " in manufacturing effected the apotheosis of the rabbit, opossum, muskrat, woodchuck and hare, which in their somewhat startling metamorphosis became seal, sable, ermine, chinchilla, beaver and fox.[2] On the whole, in men's wear, wool has suffered through a general reduction in the weight of garments and not through any radical changes in fashion.

There has been some reaction against the rather too ubiquitous fur coat in recent years; and wool has regained some of its earlier favour. But although it will continue to be a very important textile, wool can hardly hope to regain its former position in those fields where artificial silk appears to have securely established itself.

In other places and in other uses wool is extending its scope. Increasing population and the use of wool in the motor car and other industries tend to mitigate the severity of the competition from other fabrics. And if the West is tending to replace woollen garments by silk, the East is tending to abandon silk in favour of wool.

1 Commerce Monthly, Aug., 1928, and February, 1929: Articles by Janice Reed have been drawn on freely.

2 See Chase: " Your Money's Worth," pp. 109-10.

Artificial silk is used in combination with other textile fibres; but since the war the percentage used in the wool textitle industry has been very small.[3] Artificial silk has thus been less an auxiliary than a competitor to wool. Yet it is impossible to say with any accuracy what the net effect of this competition has been. Although there has been a re-distribution in the world trade in wool it does not appear that world demand has decreased. On the contrary, the opinion is held that it has increased; and that the use of artificial silk has so far done no more than retard the rate of this increase. There can be little doubt, however, that the Rayon industry will continue to expand rapidly in the future and will make its competition more keenly felt.[4]

B.—ARTIFICIAL WOOL:[5]

A great deal of energy is now being directed to the production of "substitutes" for natural wool. Neo-laine (near-wool) is a French product of vegetable origin for which it is claimed that it has greater strength than wool and can be successfully mixed with the natural product. Another French textile product, known as N.T. (Nouveau Textile), has been experimentally manufactured. From Germany has come "wool-silk," an artificial wool produced from artificial silk fibres, which is said to be similar to natural wool both in properties and appearance.[6]

It may perhaps be well to discount some of the claims made for these products, but it would be foolish in the extreme to dismiss these developments as unimportant or chimerical. They have already passed the stage of incubation in the inventor's mind. They have already provided raw materials upon which manufacturers are experimenting. In the case of N.T. the production costs were stated to be about 9d. per pound; and many of the articles made (in Yorkshire mills) by an admixture of N.T. and natural wool, required neither special equipment nor special training of operatives.[7]

It is impossible to predict the future of these and similar inventions or their effect on the demand for natural wool; but the history of Rayon suggests that before very long they will effectively enter the market. The wool-grower will then be concerned with the question whether artificial wool will act as an ally or as a rival to natural wool. At the moment the general opinion is that it will act as an auxiliary, and be mixed with natural wool

3 Survey of Textiles, pp. 283-4-; 306.

4 Dalgety's, 1928-9, pp. 158-63 quotes several representative opinions.

5 Dalgety's, 1928-9, pp. 164-6.

6 I.C.I. Bulletin, April, 1929.

7 Dalgety's, 1928-9, pp. 165-6; "News Bulletin" prepared by Commercial and Industrial Section of Dept. of Markets and Transport, Canberra, 11th July, 1929.

to produce goods at lower prices than are now possible. If this is the case (and it is likely to be the case in the early years of the industry at least), it is probable that the invention may permit woollen articles to enter markets hitherto inaccessible. Wool-growers, however, would be wise not to rely too securely on so favourable an outcome, but to admit that the new product probably has competitive as well as complementary potentialities. In any case, its reactions on the demand for wool, once it becomes effectively incorporated into industry, will need the closest attention of wool-producing countries. It is to be hoped that the result will be a larger and wider geographical diffusion of wool textiles. But whether the outcome will even then be beneficial to particular wool-growing countries or not will depend also on possible alterations in the type of wool best suited for mixture with the artificial fibre. It seems probable that the next decade will do much to clear up present ambiguities, provided we are alert to study the trend of events.