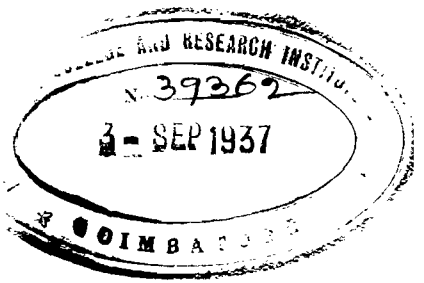
THE INTERNATIONAL GRAIN TRADE

BY

A. A. HOOKER



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"Naturam expellas furca, tamen usque recurret"

HORACE

PREFACE

ALL modern business involves a mass of technicalities and the Grain Trade is no exception. Simple actions require to be standardized, so that no conscious mental effort is incurred in execution, if the more difficult operations of the Trade are to be thought out clearly by the man of average intelligence. To this end, methods of doing business are worked out by pioneers, tried, and eventually standardized so that the operation may become automatic and permit the conscious brain to deal with a more advanced problem.

Generations of clever men evolve new methods to overcome new difficulties; discarding or replacing the old, they gradually build up the structure of their trade into the mass of technical detail with which the modern student is now faced.

The first trade in grain must date back to man's earliest existence, and can safely be guessed to have been by barter. Modern trading is essentially the same in so far as grain is exchanged for something else of value, but, owing to the universality of grain, methods have been evolved to carry out the exchange by the medium of a token, the marginal utility of a token being more constant than that of produce.

The exchange of goods is naturally preceded by a bargain which in early days was customarily a tedious affair although the goods for exchange were on the spot. Now, however, modern method enables a bargain to be made between traders at opposite ends of the earth for

the exchange of goods situated anywhere in the world in a matter of minutes.

This speed is achieved by a type of organization which is seen to the best advantage in the international commodity markets of which the Grain Trade is of paramount importance. Hundreds of years have gone to the building up of this Trade, and the student cannot fail to find interest in an examination of the most highly organized commodity business in the world.

If we exclude the farmer at one end and the miller at the other, the Grain Trade can be more properly considered in the nature of a service rather than a business, the charge to the community for this service being reduced progressively in proportion to the increase of efficiency, until the cost has largely disappeared where freedom of operation exists.

The present volume describes the Trade from its London aspect, since London remains the largest distributional centre for international grain, and it is written principally for the market clerk who is anxious to improve his knowledge of the Trade and acquire a wider and more balanced view of the world's grain business.

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INTRODUCTORY

THE FUNCTIONS OF THE GRAIN TRADE

THE first and most obvious function which the Grain Trade performs is that of "Distribution in Space." By means of the Trade, the most economically efficient distribution of grain throughout the world is possible. State interference limits the efficiency with which this service can be rendered, but the organization exists and is satisfactory in so far as it is permitted to function. National exigencies are, to-day, blocking the flow of international grain along its natural channels, but the time may come when tariffs, quotas, and exchange restrictions are no longer considered necessary, when countries are free to do business economically with one another; then the organized Grain Trade will once again be ready to perform its full function with the utmost efficiency. If its distribution is, at present, incomplete, it is through no fault of its own.

The second function of the Trade is that of "Distribution in Time," i.e. discounting the future. This can best be described as the service which evens out the supplies of grain over a period of time in the most economical manner, thus obviating unnecessary excesses and deficiencies in all markets. By indicating the anticipated future price, a futures market provides an incentive either to conserve or dispose of spot supplies, and by providing

facilities for trading in forward positions, it enables the owner of spot stocks either to carry those stocks at the market's expense, or to sell and replace for future delivery at a relatively lower price, thus maintaining reasonable equilibrium of supplies through time.

The third service which the Trade provides, though closely associated with and essential to efficient distribution, is an entirely separate function, that of "Uncertainty Bearing," i.e. market insurance.

It is a well-recognized fact that no business, whatever its nature, can be carried on without risk. The degree and variety of these risks differ widely with the class of business concerned. It must also be appreciated that the risks of a business must be reckoned in its costs, considerable allowance being made in cases where the risks are important. It therefore follows that any service by which a risk is reduced or eliminated automatically permits the business to be operated for a smaller margin of profit, and is therefore entitled to certain remuneration. The only justification for such service must be that its remuneration shall, in the aggregate, amount to less than the additional margin which it would be necessary to add to the costs were the whole risk borne by the business.

For this risk-bearing service to be efficient, it must be certain in effect, financially sound, and enable the user to eliminate as much of the risk as possible. Just as risks of a general character are insured by specialists at Lloyds, so market risks are insured by specialists in the commodity concerned and facilities are provided in organized futures markets.

PART I
DISTRIBUTION IN SPACE

INTRODUCTION

THE evolution of the Grain Trade has been continuous since the days of Adam. The first man to sow seed must have been actuated by a subconscious desire to improve the standard of living and supplement the unaided provisions of nature to keep pace with a gradually increasing population. As the family developed into the tribe, definite areas of land came under cultivation and were farmed exclusively for local needs, but later, when harvests failed and food became scarce, economic necessity bred enmity and covetous interest in the harvests of others. Sometimes a tribe would move to more fertile land, but as homes and institutions became more established, instead of man moving after food, food was moved to man.

Within the tribe, it was very soon discovered that indiscriminate pilfering was uneconomic, and that it was expedient that every member should be required to make himself useful to the community before being considered entitled to a daily ration of food. It also became evident that the services of one individual were worth more than those of another, and so originated the idea of measuring food in relation to work done. In the same way, however, as the consumptive capacity of every individual has its limitations, so was it often impossible for the tribe to consume all the grain from a bumper harvest. In such years grain could be exchanged for other needs, but to make such an exchange the grain must be measured.

From the idea of a definite measure in grain follows that of value, which, in the early days, would depend first on the immediate appetite, and later on the surplus or deficiency of supplies.

It did not take long, at this stage, before man discovered that it was useful to own property which could be exchanged for grain in lean years, and conversely that it was provident to store grain from good harvests both as an insurance against the fickleness of nature and as an asset which could be exchanged for other property. From what we have said, it can now be clearly seen how the fundamental ideas of the Grain Trade were evolved. First, "measure," second, "value," and third, "carrying." Even to this day, much grain grown in the primitive countries of the East is stored in large holes in the dry ground, just as it was in the days of Joseph.

As the size of communities enlarged, and the variety of produce and property increased, market-places were established, so that people anxious to exchange one form of property for another could meet together for that purpose, and barter what they had for what they needed. There came times, however, when the owner of surplus produce had no immediate needs; so, for his convenience, a token was introduced which enabled him to defer his choice of exchange goods until his needs became manifest. To be effective, the token had to be generally accepted as a receipt for goods to a definite value at the time of sale. It must denote an equivalent exchange value for all the goods in the market-place at the time it was accepted, and therefore all goods must have a market price on the day. This price was arrived at by the natural effect of supply and demand, and was the equilibrium price of the day.

Very little experience in the marketing of grain brought into being the professional dealer, who quickly learnt to exploit the possibilities of distribution. He soon discovered that, by keeping himself informed on the supply position in various districts, he could move grain from surplus to deficient areas with advantage. Sometimes, he advanced money to farmers on the security of their crops, so that the farmers must employ him to dispose of their harvest. From his experience, he was more able at a bargain than the average farmer, and consequently he sometimes acquired an unpleasant reputation. In the actual distribution of grain, he was greatly handicapped by the slow development of road building and efficient methods of transport. Even as late as 1817 we find people dying of famine in Lorraine, while wheat is plentiful in Brittany.

Before 1837 England was generally self-supporting as regards wheat, and consequently took little interest in the foreign trade. Local markets were spread all over the country. During the thirteenth, fourteenth, and fifteenth centuries, there were some 5000 authorized markets in this country, and some of the rules and customs are both interesting and instructive.

A Town official called a "Broker" introduced buyer to seller and witnessed every market transaction, and for this service he received a fee. The rules of the markets dealt with the following matters—

(1) Corn was to be sold on the market only.

(2) Forestalling was prohibited.

(3) No one was to put his corn for sale at a higher price than he first asked for it.

(4) The times for selling corn on the market were fixed.

(5) The admission to the market of different classes of traders was regulated.

(6) The quantity and quality of corn was regulated.

(7) Sometimes the prices were fixed.

(8) The relations between producers, porters, market and shop dealers were regulated.

(9) The validity of agency in the corn trade was regulated.

(10) The activities of the broker were limited.

(11) The right of storing corn was dealt with.

The greatest offences against the law were forestalling, engrossing, and regrating. Forestalling was going out beyond the town and buying up corn coming to market. This device avoided the payment of town tax, upset the local market, and tended to raise prices. Engrossing was simply buying with a view to selling again. Regrating was buying by a retailer in the local market with a view to selling again either in the same market or one less than four miles distant. All these methods of dealing were considered offences until 1844. It is rather surprising how the grain dealer managed to survive the constant state interference with his business. Unduly high or unduly low prices were always attributed to some malpractice which must be suppressed. In fact, it would seem that he was only tolerated because he appeared to be indispensable.

The growth of London, however, caused many restrictions on trading to be relaxed, it being necessary to devise methods for providing this large population with a regular and even supply of grain. The importance of the London market grew in relation to that of the local markets, and the London price controlled the local prices. Supplying London developed into a big business, and various classes

of dealers, badgers or baggers, corn merchants, cornmongers, corn factors, hoymen, kidders, regraters, and others were engaged. The badgers and cornmongers were dealers who bought locally and sold in larger centres. The corn factors were agents of larger men who had special knowledge of local conditions in one section or another. The Kentish hoymen were shipmasters who carried farmers' corn to market and sold it on commission. The corn merchant was a wholesale importer or exporter, and the regraters were retailers.

At first there were four markets in London, Grace Church and Newgate for arrivals by land and Queen Hythe and Billingsgate by water. These names seem to have disappeared later and Bear Quay and Mark Lane to have taken their place. About 1760, the leading dealers at Bear Quay, both corn factors and Kentish hoymen, bought a strip of land in Mark Lane and built an Exchange.

The first Corn Exchange building in Liverpool was completed in 1808, markets before that date being carried on in the street opposite the Town Hall. The first Corn Trade Association was formed in 1853 and the present building with its "Atlantic" newsroom was completed in 1854. The cental unit was introduced in February, 1859, and the futures market in 1883.

The earliest market of international interest was Strassburg. A record of wheat prices on this market from 1400 to 1550 shows an average of from 3s. 7d. to 17s. 1d. per quarter with the exception of the year 1440, when the average price was 23s. 6d. per quarter.

Up to 1789 England was generally an exporter of wheat, from 1360 to 1394 under special licence, and from 1394 to 1463 whenever the price fell below 6s. 8d. per

quarter. In 1689 an export subsidy was granted while the price remained below 48s. per quarter. Various small import duties were introduced from time to time, but in 1828 a sliding scale was brought in whereby the import duty rose as the price of wheat fell.

In 1838 Cobden and Bright came on the scenes, but it was not till the Irish famine in 1846 that import duties were reduced to 1s. per quarter by Sir Robert Peel, and later in 1869 finally abolished.

By 1837 the price of wheat in the U.K. had risen to 55s. per quarter, and the rapid growth of the industrial population made imports generally necessary. One result of the Irish potato famine was a marked expansion in the maize trade, and from that date American Mixed Corn was regularly imported.

By 1860 the Grain Trade had assumed considerable importance, and the improvement in technique was accelerated during the next few years. Most of the business was done in small sailing cargoes of about 2000 tons, but occasional shipments were made in steamboats such as the famous *Great Eastern*, which carried a cargo of 66,000 bushels from New York to Liverpool in 1863. By this time the U.K. had become the largest importer, and the London and Liverpool markets had become quite international in character. It is recorded that in the season 1865–6 cargoes of American wheat were, on arrival at Liverpool, sold back to America at a profit. In 1866 business was further speeded up by the laying of the Atlantic cable, and in 1871 the first futures market was started in Chicago.

Up to 1868 England grew about 16,000,000 quarters of wheat, and most of the mills were wind-driven, but as the native crop became smaller, and mills became more

dependent on imported grain, they naturally gravitated to the ports.

In 1883 the futures market was established in Liverpool, the basis of the market being Californian wheat. The chief exporters about this time were America, Russia, India, and Australia. A Russian crop failure in 1891 was followed in 1894 by very low prices, wheat touching 4s. 0½d. per cental in Liverpool. This drop in price is said to have been caused partly by a reduction in freights which resulted from the development of the triple expansion marine engine, and partly by the opening up of fresh land by railway extensions in the Argentine which increased the competition amongst exporters.

In 1896 the Berlin Produce Exchange, which had been the leading continental grain market, was virtually put out of business by a popular agitation resulting in a law prohibiting futures trading. This undoubtedly assisted Liverpool to capture all the European hedging business which was not placed in Chicago.

In 1897–8 the Trade was temporarily upset by the attempted corner of the Chicago market by a youth named Joseph Leiter. Looked at in the light of present-day experience, this operation does not strike one as a very big gamble, but its effect marketwise was undoubtedly very important at the time. Although the largest position he ever held was 35,000,000 bushels, he raised the price from 70 cents in April, 1897, to 185 cents in May, 1898. Having been forced to take delivery of 14,000,000 bushels of cash wheat, he was unable to carry it forward into a discount position, and the corner burst on 13th June. His total losses, amounting to between one and two million pounds, were paid by his father.

The wheat crop of the world was steadily growing

during this period. For the five years 1894–8 it averaged 316,000,000 quarters, and for the five years 1899–1903 the average had increased to 362,000,000 quarters, with the U.S.A. exports averaging about 26,000,000 quarters. Russian exports were now steadily increasing, and from 1902, when she harvested a crop of 76,000,000 quarters, Russia proceeded gradually to replace the U.S.A. as the leading exporter. In 1903 Russia exported 18,500,000 quarters against 10,388,500 in 1901.

The rest of the story to the present day can be divided roughly into three periods: the pre-war period when the chief exporters were Russia, U.S.A., Canada, Argentine, and Australia; the war period when Russia went out of the picture and the Trade was taken over by the government; and the post-war period, with Canada in Russia's place as the leading exporter, and the Argentine replacing the U.S.A. in the world's markets.

From primitive beginnings the services of the Grain Trade have been built up, the improvement in security, speed and general technique being continuous through the ages. Dealers in the international market have found it essential to be kept informed of world news, and to be able to trade in world markets. Consequently, business connexions and correspondents are maintained in all important grain centres, so that the network of the Trade is spread throughout the world. Intense international competition within the Trade has compelled the employment of every device of modern science which can add to its efficiency, and the machinery for the distribution of grain is efficient. The functions of the Grain Trade are economically sound, and the first of these is "Distribution in Space."

SECTION I

MODERN MARKET UNITS

FOR the purpose of this section, the important units of measure can be limited to those used by British traders, which must include a few continental units and those used in recognized exporting countries. The least important unit in the international trade is the hundredweight, the recognized unit of our own Board of Trade. The market unit of the United Kingdom is the quarter. Unfortunately, however, the quarter is not one unit but a number of different units, and, until it is known to what grain and to what terms of sale reference is made, it is not possible to be certain which quarter is denoted.

The unit next in importance is the bushel, which is in general use both in the U.S.A. and in Canada. The quarter and the bushel are also used for measuring grain other than wheat, and differ in weight with the various grains concerned. The following tabulation may help to dispel the rather natural confusion which must arise in the minds of those not *au fait* with the business.

Wheat	per quarter of 504 lb.:	confined to native wheat in the U.K.
	per quarter of 496 lb.:	used by London merchants for foreign wheats sold to small consumers on ex ship, ex store, or delivered terms.
	per quarter of 448 lb.:	used by Bristol and Birmingham as above.

	per quarter of 480 lb.:	used by Hull as above, and also generally in the international C.I.F. trade.
	per cental of 100 lb.:	in Liverpool for both spot and futures.
	per bushel of 60 lb.:	in both U.S.A. and Canada.
Maize	per quarter of 480 lb.:	generally.
	per cental of 100 lb.:	in Liverpool.
	per bushel of 56 lb.:	in the U.S.A.
Oats	per quarter of 336 lb.:	for native oats in the U.K.
	per quarter of 320 lb.:	for all foreign oats.
	per bushel of 32 lb.:	in the U.S.A.
	per bushel of 34 lb.:	in Canada.
Barley	per quarter of 448 lb.:	for English, Australian, Polish, Californian and Chilian.
	per quarter of 400 lb.:	for Canadian, Argentine, Persian, Russian and Danubian.
	per bushel of 48 lb.:	in U.S.A. and Canada.
Rye	per quarter of 480 lb.:	generally.
	per bushel of 56 lb.:	in U.S.A. and Canada.
Linseed	per ton of 2240 or 2204·6 lb.:	for export.
	per quintal of 220·46 lb.:	in the Argentine.
	per bushel of 56 lb.:	in U.S.A. and Canada.

In the Argentine all grain is quoted per quintal of 220·46 lb.

In Rotterdam wheat is quoted per 100 kilograms of 220·46 lb., and maize per 2000 kilograms.

The metric ton of 1000 kilograms, equivalent to 2204·6 lb., is largely used on the continental markets, particularly in Germany. Some country markets in the U.K. have their own peculiarities, for instance maize is quoted per quarter of 448 lb. at Worcester, Dorchester, and the Bristol area, and per quarter of 476 lb. at Norwich and Colchester, but these units are entirely local.

In the international market grain is sold for export in cargoes, part cargoes or parcels. The size is usually stated in tons, except in the case of grain shipped from the Atlantic seaboard of North America, when the boat load of 1000 quarters is used; for example, a sale is made of say 20,000 quarters or 20 loads. The equivalent boat load (or "load") for parcels shipped from all other seaboards is 250 tons, which equals 1166·66 quarters of 480 lb. Of course these units are split up into any convenient size by distributing merchants, the size usually depending on the size of a buyer's craft and his method of taking delivery.

SECTION II

THE DESCRIPTION OF GRAIN AND ITS QUALITY

IN the first instance, business in grain is dependent on complete reliance on the spoken word, contracts being signed later. The accurate description of the grain and its quality is, therefore, an essential preliminary to all deals.

In the early days of the Trade, wheat was sold almost entirely on sample; the pre-war business in Russian wheat for instance, often meant that a merchant would have fifteen or twenty different samples on offer at the same time. Sale on sample necessitates the sealing of a small sample by the shipper in the presence of the buyer or his broker, the sample being retained by the buyer. On the arrival of the grain, samples of the actual delivery are taken and jointly sealed by the buyer's and seller's representatives. Later, the two samples are compared, and in the event of the buyer being dissatisfied with his delivery, the samples are used to assess the amount of his claim either by mutual agreement or at arbitration. This method is still largely employed for grain from Russia, Persia and European countries, and occasionally for special parcels shipped from other countries.

A second method of determining the quality of grain, practised by Argentine and Australian shippers of wheat and shippers of feeding grains from several countries, is to sell against a standard of fair average quality, which for market purposes is abbreviated to "F.A.Q."

Samples of all F.A.Q. shipments are taken conjointly by buyer and seller on arrival at the port of discharge, and a standard is made up with which separate deliveries can

be compared. The Argentine standards are made up by a committee of the Corn Trade Association for each month of shipment and for each type of wheat. The Australian standards are made up by the Chambers of Commerce for the respective states for the whole season and forwarded to the London Corn Trade Association. Standards are always available at the offices of the Association for comparison with current arrivals, and claims for allowances to buyers are either agreed or arbitrated in accordance with the terms of the contract.

The market description for Australian wheat is according to the State in which it is grown, viz. Western Australian wheat, or New South Wales, etc. Australian wheat sold without any stipulation as to State is described as "All Ports." However sold, arrivals are compared against the standard of the State from which the wheat is shipped. The wheat is white and more or less uniform in type, the relative quality grown in different States varying from season to season.

Wheat-growing in the Argentine is spread over a wide area of about twenty million acres. The earliest type to mature is grown in the northern districts which feed the ports of Rosario and Santa Fé and is known on the market as "Rosafé." The type grown around Buenos Aires is known as "Baril" (Barletta and/or Russo Buenos Aires or La Plata), and the type grown around Bahia Blanca, the hardest of the three, is known as "Barusso" (Bahia Blanca Barletta and/or Russo). Separate standards are made up for wheat shipped from each of these three districts. Export sales are made as of a specified "natural weight," i.e. test weight per Imperial bushel, and this weight is ascertained by the Corn Trade Association for all arrivals. Natural weights vary considerably from crop

to crop but usually run somewhere between 60 and 64 lb. per bushel. The buyer receives an allowance in accordance with a fixed scale for any deficiency in the natural weight below that declared on the contract.

The simplest form of describing quality, and the most modern, is based on a grading certificate issued by a state authority in the country of origin. Naturally, the absolute integrity of the inspectors who issue the certificates is a necessary qualification for the success of this system. Grading is very widely employed in the U.S.A. and Canada, where marketing methods have attained an advanced stage of efficiency. It is also used in South Africa, though not for wheat, and has recently been adopted by the Argentine, where an elevator system is being built to facilitate its operation. The latest convert to the grading system is Russia, where an elaborate plan is reported to be under consideration.

Grading has become very scientific, and a brief description of the Argentine scheme will be instructive as to the general principles. The wheat area has been divided into three zones based on the three principal ports of shipment, Buenos Aires, Rosario and Santa Fé, and Bahia Blanca, and each zone is to have three types of wheat, "Hard," "Semi-Hard," and "Soft," and each type two grades. The grades are decided on careful analysis, and the specifications given on p. 17 for the two grades of "Hard" wheat will indicate the method.

So far, no sales have been made for export on a grade certificate, and it will probably be some time before the millers of this country will be prepared to buy on an Argentine certificate, and abandon the control exercised by the Corn Trade Association over standards and natural weights.

HARD TYPE

	Grade No. 1	*Grade No. 2*
(1) Condition of grain . .	Natural sound and dry	Natural sound and dry
(2) Minimum specific weight per hectolitre . .	78 kilos	75 kilos
(3) Maximum allowance for varieties of other types in total . . .	5%	10%
(4) Maximum allowance for foreign matter . .	1%	2%
(5) Maximum allowance for wild oats and kernels of other grains . .	2%	3%
(6) Maximum allowance for "white belly" kernels .	15%	30%
(7) Maximum allowance for "broken" kernels .	2%	4%
(8) Maximum allowance for "damaged" kernels (heat damaged or sprouted) . . .	0·5%	1%
(9) Maximum allowance for "immature" kernels .	1%	2%
(10) Maximum allowance for whole "smutty" kernels	0·1%	0·2%
(11) Maximum allowance for "weevily" kernels .	To be determined according to season	

The U.S.A. authorities issue some seventy or eighty different grade certificates for wheat alone, of which the following are the classes of chief importance in the international trade.

Class I. Dark Northern Spring, Northern Spring.
Class II. Amber Durum, Mixed Durum.
Class III. Hard Winter.
Class IV. Soft Red Winter, Western Red.
Class V. Soft White, Western White.

All the above classes are divided into five grades and numbered one to five. Any of these wheats can be

designated "Garlicky," and when American prices are in line with the international market, a good business is often done in Garlicky Red Winter wheat, chiefly to the poultry trade. The only wheat exported in recent years is Pacific Coast White wheat, the price of which is sometimes brought down to world prices by means of an export subsidy. This wheat, although certificated for the domestic trade, is sold for export on sealed sample and is particularly popular in Ireland.

Canada grows 95 per cent Spring wheat, the remaining 5 per cent being composed of Winter wheat which is consumed in the country, and a little Durum wheat which sometimes finds its way to Europe, especially to Italy for the manufacture of macaroni. The Spring wheats are graded as follows—

No. 1 Hard Manitoba (the best wheat in the world).
Nos. 1, 2, 3 and 4 Northern Manitoba.
Nos. 5 and 6 Manitoba (commercial grades).
Nos. 1 and 2 Garnet (new grades introduced in 1935).
Feed Manitoba (commercial grade).

In years when harvest weather has been unfavourable a considerable proportion of the crop will be graded "Tough" or "Smutty."

Grading certificates are not entirely restricted to native produce, foreign grain being graded for delivery on American futures markets. In the season 1935–6, Argentine wheat was graded as Hard Winter wheat, and Canadian wheat was freely mixed with Northern Spring wheat for delivery on the Minneapolis futures market. Maize, also, was shipped from the Argentine and mixed with American corn to grade as Mixed Corn on the Chicago market.

As regards the remaining countries, Russia grows both Winter and Spring wheat, but, although the wheat is

sometimes described as coming from a certain district, for market purposes, the selling sample is the all-important factor. Indian exports are practically confined to a little Choice White Karachi, a wheat which finds particular favour in Hull, and, very occasionally, Red Bombay wheat, when the world prices are relatively high.

Correct description of grain is largely a matter of experience, the objects being to ensure that both buyer and seller are perfectly certain as to what grain is meant, and to employ the minimum number of words which will convey a clear description.

SECTION III

TERMS OF SALE

It is obviously of the first importance that in all grain transactions an exact definition should be understood as to the terms on which business is being negotiated. The first essential which has to be agreed is the precise point on its journey at which it is proposed that the grain shall change hands. The second essential is to define exactly what charges on the grain either for storage or transport are payable by either buyer or seller. The third point which has to be settled is the precise terms on which payment shall be made.

It is only natural that different trade interests should become concerned with grain at different points on its journey. For instance, the farmer in Canada is not concerned with grain after it has left Canada; in most cases, his interest ceases when he has sold and delivered to the country elevator. In the same way, a small miller in this country is not interested in grain until it has arrived in port. As a result of this variety of interests, certain terms of sale have been adopted by which grain can change hands at that point on its journey which is most convenient to both parties to a transaction.

The shipper or exporter may purchase grain in store at some place in the country of origin, free alongside, or free on board at some port of shipment. He will probably sell to some buyer in an importing country, cost, freight and insurance paid to the port of delivery. These terms have become abbreviated for market purposes into: ex store,

say Fort William, F.A.S. or F.O.B., say Montreal, and C.I.F. say Liverpool.

In the first two examples a date for payment and possession of the grain would be fixed. In the third case terms of payment would be cash against shipping documents in accordance with the contract customarily used for the grain in question, provision being made for payment at a prompt date in the event of the ship being unduly delayed, or against a banker's guarantee to produce documents on arrival should the ship arrive before the documents. If the bills of lading were made out for larger quantities than the unit actually sold, a delivery order clause would be inserted on the contract so that the shipper could demand payment against his delivery order. In all the examples so far considered terms are strictly cash, no credit being allowed.

The London grain importer who splits up parcels for small buyers does very often sell on credit terms. He sells to small consumers on what are known as "ex ship" terms. These terms are reckoned to include all costs up to the point at which the grain has been worked out of the ship. In the case of wheat a larger quarter of 496 lb. is customarily implied, the merchant buying per quarter of 480 lb. C.I.F. and selling per quarter of 496 lb. ex ship. The due date for payment is one month after the arrival of the vessel, although, in most cases, a cash discount of 5 per cent per annum may be taken at the buyer's option.

The merchants also sell grain on landed terms for the convenience of buyers taking delivery by road, and special rates are sometimes arranged by port authorities to facilitate this method of delivery. The Port of London quotes a three-day rate for this service.

Grain is sold in warehouse on what are called "ex

store" terms. The customary London terms include a fortnight's free rent and one month's credit. The sale is made subject to the approval of bulk, i.e. the buyer must sample the bulk and advise the seller by noon on the next market day should he wish to reject the purchase as being inferior in either condition or quality to what was in his submission sold to him. Business in stored grain is done in larger quantities for cash, especially in ports such as Liverpool and Manchester where heavier stocks are normally carried on account of the futures market being on delivered terms. Cash is paid against transfer orders, delivery orders or warehouse warrants. Terms of payment are cash on the second business day following, or if the sale is to a miller the terms are less $1\frac{1}{4}$ per cent in seven days from the date of sale and/or appropriation. Different terms obtain in other ports.

Port millers with deep-water frontage buy most of their grain on C.I.F. terms alongside their mills, and a few inland millers buy delivered to their mills. Native wheats, in particular, are bought on "delivered in" terms by local country mills except when rail transport is used, when the terms would be "free on rail" (F.O.R.).

Theoretically, grain can be sold in any position and terms can be manufactured to suit the occasion, but in practice the above examples cover most of the customary methods.

On the C.I.F. market Russian grain is usually sold by the shipper less $2\frac{1}{2}$ per cent. A maximum percentage of seeds (other than wheat) and extraneous matter is specified on the contract, and allowances for any quantity in excess of that specified are included in an allowance award in respect of quality.

Indian wheats are sold on what are known as "clean

terms," any admixture of dirt, non-farinaceous seed or other matter being allowed for by the shipper in accordance with the Association's scale. An analyst is officially appointed by the Corn Trade Association, and samples are submitted after being carefully reduced by a standard process. Payment is made on "net weights," which means that the bags used in the shipment are not included in the delivered weight for which the receiver pays. This weight is obtained by subtracting the tare of the bags, which is recorded by the reducing agents who prepare the samples for analysis, and included on the final certificate of analysis issued by the Corn Trade Association. In the case of Australian bag shipments, bags are sold as wheat, so that the necessity for obtaining the tare of the bags does not arise.

Most shipments are made full outturn guaranteed, which means that the buyer pays for exactly what he receives. There are, however, a few exceptions, notably shipments from Atlantic ports to Liverpool, which are guaranteed outturn within 1 per cent of bill of lading weights. This method of shipping makes the rendering of a final invoice unnecessary as outturns rarely vary more than 0·25 per cent from the bill of lading weight, but the advantage to the shipper is automatically counterbalanced by the buyer reducing his price 1½d. per quarter for wheat sold on those terms.

Terms of payment vary with the contract concerned, but the following examples will serve as a general indication. American and Canadian wheats are paid for by the acceptance of shippers' seven days' draft, the steamer usually arriving about the dates when the drafts mature. Argentine terms are cash against documents less ninety days' interest from date of arrival of documents in

London, at one-half of 1 per cent over advertised joint-stock deposit rate. Australian terms are cash against documents less interest at the same rate on the unexpired period of ninety-three days from date of bill of lading. The discount in both cases is on the net amount of the invoice.

All terms of sale, when agreed, must be embodied in some form of contract, and in the following section these forms of contract are considered.

SECTION IV

FORMS OF CONTRACT

VARIOUS forms of contract have been built up over a period of many years for use in different parts of the world, and new clauses continue to be added as experience shows the necessity. The result is a very full document which takes the best part of half an hour to read through. As time is of value in business, certain forms have been standardized by the Corn Trade Associations so that members, who know these forms, can sign a contract without a preliminary study of half an hour on each occasion. The London Corn Trade Association C.I.F. contract forms are generally recognized as the best examples of their kind, and will provide ample material for a study of this subject.

The contract deals with most, if not all, of the following points: Date and place where contract is made, and the names of the parties to the contract, one appearing at the head of the form showing whether bought of or sold to, the other appearing at the foot of the form as a signature, except when the business is done by a broker, when the second party is stated as the principal for account of whom the broker is acting. Then follows a description of the grain. The quality is defined either as F.A.Q., official certificate, or about as per sealed sample, the word "about" being generally accepted as permitting a variation in quality of not more than one-half of 1 per cent below the contract value. A particular season's crop may be stipulated or, in the case of a certificate, the certifying authority may be named, viz. "Dominion" or "Federal."

Shipment must be made in good condition. The classification, in accordance with Lloyds, of the vessel or vessels permitted to carry the grain is defined, and the port or optional ports from which the grain may be shipped are sometimes named. The date on which, or period during which, bills of lading may be dated is clearly shown, and it is agreed that such bills shall only be dated when the grain is actually on board. The quantity is written in figures and also in words as so many units, the shipper being given the right to ship within a certain percentage, more or less, of the stated quantity; the usual variation being 2 per cent at contract price and a further 3 per cent (8 per cent in the case of full cargoes) at the market value at date of bill of lading. On U.S.A. and Canadian grain contracts, dockage is not reckoned in the quantity to be delivered. Then follows the contract price, also stated in figures and words. The unit of quantity is defined and the destination is given thus: "Shipped, including Freight and Insurance to ———— direct or indirect." Freight is payable on discharge by the buyer, being deducted from the seller's invoice. The payment clause is then set out in detail with elaborate arrangements for all possible contingencies, so that there can be no dispute as to when and against what documents payment shall be made. A long paragraph follows describing the insurance policies which shall be acceptable, insurance being effected for 2 per cent over the invoice amount of the goods. The method and rate of vessel's discharge is stated, and, in the case of a large port, the permitted or excluded docks are named. For parcels which form part only of a shipment, a paragraph is placed in all contracts apportioning loose collected, damages, and sweepings, also any excess or deficiency in the delivered quantity, *pro rata* between all receivers.

The right of both parties to supervise weighing at time of discharge is agreed, cargo superintendents usually being employed for the purpose, and the arrangement for weighing by Hopper Scale of 2000 lb. or over is accompanied by agreement to the customary allowance for draftage of 2 lb. per 2000 lb. Further provision is made for excess or deficiency, it being agreed that payment shall not be made for an excess occasioned by water shipped during the voyage, and that, when a deficiency is caused by accident covered by insurance, payment made on the provisional invoice shall be final.

It is further agreed that any prohibition of export, blockade or war, which makes the fulfilment of the contract impossible, shall exonerate the seller and permit him to cancel the contract or any part of it. If the contract is made by a broker, the amount of the brokerage and by whom it is payable are inserted, the brokerage being payable, contract cancelled or not cancelled. The front of the contract form concludes with a long and carefully worded paragraph dealing with the methods to be adopted in settling disputes by arbitration and by law, the parties agreeing to be bound by the law of England.

The reverse side of the form is closely packed with further rules and conditions, starting with a paragraph dealing with the notice of appropriation. (Appropriating is assigning grain shipped in a particular vessel as the grain intended to implement that particular contract.) The time allowed for giving notice varies with different contracts, but is usually either seven, ten or fourteen days from date of the bill of lading, subsequent resellers being allowed to pass the notice on to their buyers in due course. The words "due course" are often the cause of dispute, but are generally agreed to mean without any

unnecessary delay. Failing evidence to the contrary, the bill of lading is considered proof of date of shipment.

The contract provides for the method of retiring documents, the onus being placed on the buyer to advise the seller of his intention by a stipulated time. (Retiring documents implies the transfer of documents giving title to the grain in exchange for cash.) Then follows the default clause in which are set out exactly what rights the injured party may exercise with respect to buying-in or selling-out against the defaulter. This clause deals both with the non-fulfilment of the contract and acts of bankruptcy. The contract concludes with several clauses dealing with the procedure to be adopted in arbitrations, sampling, claims for quality, condition or deficiency in natural weight, with a finality rule placing a time limit for making certain claims for arbitration or appeal.

There are a number of other clauses which apply to certain contracts, some of which are printed along the side of the forms, and some added in ink or type. Among them the following may be mentioned: Strike Clauses, Ice Clauses, Australian Sea Carriage of Goods Act Clause, Special Settlement Clauses, Extension of Shipment Clause, Import Duties Certificate of Origin Clause, "Rye Terms" Sampling Clause, Harter and Canadian Act Clause, Special Discharge Clauses, and Delivery Order Clauses.

It is essential that the terms of a contract should be watertight, and the Contracts Committees of the various Corn Trade Associations are constantly watching the interests of members as they may be affected by new situations.

Broadly speaking, grain contracts can be divided into two definite classes as regards the terms governing

condition on arrival, as distinct from quality. These are known respectively as "Rye Terms" and "Tale Quale" contracts. In both cases the grain must be shipped in good condition, but under "Rye Terms" the seller is responsible for damage occurring on the voyage, such damage being settled by an allowance based on a percentage of contract price, or in some instances the buyer is entitled to reject the damaged portion. Under "Tale Quale" terms, provided the grain has been shipped in good condition, the buyer has to accept it on arrival "such as it is." It follows that where an insurance claim or a claim against the shipowners arises, it is preferred by the seller under a "Rye Terms" contract and the buyer under a "Tale Quale" contract.

Besides the C.I.F. contract forms which are standardized and numbered for the different grains and exporting countries, there are a number of other official forms in daily use, such as futures contracts and spot grain contracts. These short forms are printed in two parts, one for the seller and one for the buyer, and are perforated across the middle. Reference is made on these forms to standard clauses and forms of contract which are accepted as forming part of the contract without actually being printed on it in detail, and they are also subject to a set of by-laws.

There are also a variety of short unofficial contract forms used by merchants, the details of which are adjusted to meet the circumstances of the trade concerned. A study of such forms is unnecessary, provided their existence is kept in mind, as also the fact that no grain changes hands without some form of contract being signed.

Three examples of standard contract forms are shown at the end of this book: one "Tale Quale" No. 28, one

"Rye Terms" No. 38, and one futures contract used on the Liverpool Futures Market. The first two are official London Corn Trade Association C.I.F. contract forms, and the third is a Liverpool Corn Trade Association contract form on delivered terms.

These forms are reproduced by kind permission of the respective Associations and the copyright is strictly reserved. It must be clearly understood that this courtesy does not imply the acceptance of responsibility by the Associations for any of the views expressed in this book.

SECTION V

CORN TRADE ASSOCIATIONS

CORN Trade Associations have been formed at all the large receiving ports of the United Kingdom, and as the purpose of each one is more or less similar, a brief account of the activities of the London Corn Trade Association, Limited will afford a general idea of the various services which they render to the Trade.

The Association was formed in 1878, primarily to assist members in their business with one another by establishing uniformity in business methods, standardizing forms of contract and providing an authority to which members could refer for the settlement of disputes, but it also provides a means whereby the Trade can be represented officially in any negotiations with similar organizations or authorities outside the Trade.

In 1886 it was incorporated under the Companies Act and licensed by the Board of Trade. A small annual subscription, at the present time five guineas, is payable by members, but no profit is distributed by way of dividend. The permanent staff is, however, salaried and members may receive remuneration for definite services rendered.

The activities of the Association have developed over the course of years in a number of directions, and committees of members are appointed annually to look after the various interests. The routine work of the Association can be divided roughly into two departments. The first deals with Contract , Arbitrations and Appeals, Grain Standards, Natural Weights and Analyses. Special committees are appointed to deal with Contracts, Appeals

and Standards. The second is a Clearing House department, which deals with certain C.I.F. business which is registered, but is chiefly employed with the business of the Futures Markets. The control of this department is in the hands of a Clearing House Board.

The actual conduct of the futures markets is vested in the London Grain Futures Association, Limited, which is a separate organization, although all its members are also members of the Corn Trade Association, and its Council includes four members of the Corn Trade Executive Committee, its Chairman being the President of the London Corn Trade Association.

The Association also appoints a Finance and General Purposes Committee, and all these committees are responsible to an Executive Committee of twenty-four members elected by general ballot, four retiring in rotation each year.

The Association's contract forms are in general use all over the world, and the F.A.Q. Standards made in London are generally accepted. Representatives from other Corn Trade Associations, the National Association of British and Irish Millers, and from the Continent attend the meetings of the various Standard Committees, and as a result of the wide use of the London forms of contract, most disputes are brought to London for arbitration.

The offices of the Association, which are situated over the Baltic Exchange, are well equipped with Committee and Arbitration rooms where the best light is available for the comparison of samples. They are the scene of continuous activity, and it cannot be too clearly emphasized that a great deal of work essential to equitable business and the smooth running of the Trade is carried out by the Association in a highly efficient manner.

In 1918 the National Federation of Corn Trade Associations was formed to represent the whole Trade of the United Kingdom in matters of a national character, and this body has proved useful in negotiations with the Government and authorities in the Dominions and foreign countries. It was also hoped that by forming a federation the separate Associations throughout the country would be more inclined to work together for the common good of the Grain Trade, rather than for their own individual and local interests.

SECTION VI

CLEARING HOUSES

As several references to clearing houses will occur in Part II of this book, it will be useful to describe this department of a Corn Trade Association in greater detail. A general idea of the mechanism of clearing houses can be obtained from a consideration of the London Clearing House as it functions in relation to the London Grain Futures Markets.

In order to obtain clearing facilities, all transactions in the futures markets are registered with the Clearing House by eleven o'clock on the morning following the day of the bargain. Registrations are only accepted on Clearing House forms and must be accompanied by a 3s. Clearing House stamp per contract. The form must be filled in to show the nature of the transaction together with the name of the other party, different forms being used for sales and purchases. It follows, therefore, that for each trade done the Clearing House will require two registration forms (with stamps attached) on the following morning, one from the buyer and one from the seller.

All applications for the registration of futures contracts in the London Clearing House must be accompanied by an original margin payment of £12 10s. per contract (3d. per quarter) for wheat or £15 for maize from both parties. (In Liverpool, original margins are only required of the party whose transaction shows a loss in relation to the daily call price, and the amount is £20 per contract, i.e. 1d. per cental.)

Call prices are fixed daily at 12.30 p.m. for all open

trading positions, i.e. all the monthly positions quoted on the board. Thereafter, call prices move down or up with the market in units of 3d. per quarter as the minimum trading fluctuation above or below those threepenny units is a seller's price or a buyer's price at the time of fixing. For example, if to-day's call price for March wheat is 30s., then it will be altered to 30s. 3d. if there is a buyer at 30s. 2½d. at 12.30 p.m. to-morrow, or to 29s. 6d. if there is a seller at 29s. 6½d. (In Liverpool, the minimum trading fluctuation is ⅛d., and the minimum alteration in the call price is 1d. per cental, i.e. £20 per contract.) Daily margins are called on all contracts open in the Clearing House. Apparent profits, however, may be reckoned as offsetting losses when for account of the same member.

As soon as the Clearing House receives two complementary registrations with original margin payments, the contract is numbered and a certificate of registration is issued to both parties. The transaction is then recorded in the Clearing House on what is known as a "string sheet," the seller appearing on the sheet as the first seller and the buyer as the last buyer. As soon as either party closes his side of the contract by a balancing purchase or sale, further registrations take place in the same manner, and the contracts may be connected on the instructions of the member by quoting the previous registration number. In this way "strings" are formed, members becoming intermediaries as they close out their positions and connect their contracts. Directly a member connects a purchase and sale in the Clearing House, he becomes entitled to a cash settlement for the difference and the return of all margins held against those contracts and which are not required for the completion of the settlement. Intermediaries, having squared their positions and

connected their contracts, are relieved of all further liability, and an appreciable reduction in risks and clerical labour is achieved. By means of these "strings," appropriations, when made by first sellers to the Clearing House, are passed directly on to last buyers. All invoices and correspondence are short-circuited in the same way, and, in due course, a clearing is called by the Clearing House for the transfer of documents from the first seller to the last buyer without bothering the intermediaries on the string.

In addition to the practice of calling margins on all contracts, the Clearing House further safeguards members against defaults by allocating a proportion of the registration fee to an insurance fund, which steadily grows in amount so long as there are no serious calls made upon it. The Clearing House requires all payments to be by banker's draft, and, on a resolution by the Futures Council, can call for increased margins from all members. In short, every precaution is taken to make the business as watertight as possible, security being essential for the successful conduct of all futures markets.

SECTION VII

DEPARTMENTS OF THE TRADE

IT is a great deal easier to define the functions of respective departments than to describe the activities of firms categorically. The exigencies of present-day business have resulted in considerable overlapping, so that it is now impossible to classify many firms whose business has encroached upon the functions of several departments of the Trade.

These functions can be broadly divided into three: (*a*) the shipping of grain; (*b*) intermediary; (*c*) the receiving of grain. The personnel of these sections must be further subdivided thus: (i) shippers and shipper's agents; (ii) brokers, jobbers and speculators; (iii) merchant importers and small millers, large millers.

The function of the shippers is to put grain together and set it in motion from the exporting country. They may operate from London with branches in exporting countries, or their head offices may be situated outside London with branches all over the world, or finally they may only be established in the exporting country. It is in the latter case that they appoint what are known as shipper's agents to represent them in importing countries. The shipper's agent does not in fact put grain together, but receives cabled offers on a C.I.F. basis from his shipper. He may trade in his own name or he may pass the shipper's name on contracts.

The intermediaries perform a number of services, but as a class their most important function is that of maintaining a market. Brokers may be what are termed "pure

brokers," doing no business for their own account, or they may combine broking with jobbing and professional speculation. They may, or may not, disclose the names of their principals on contracts. In the latter case, they may be required to guarantee their principal or give their own name on the contract. Should they guarantee their principal, they are not themselves responsible for the fulfilment of the contract, but they are responsible for any damages resulting from its non-fulfilment, in the event of such damages proving unobtainable from their principal. If they do the business in their own name, they become directly responsible for the fulfilment of the contract. It follows that, unless the standing of the broker is good, he will be required to disclose the name of his principal on the contract before a transaction is confirmed. In all cases where a broker declares himself on the contract to be only a broker in the transaction, he must state in the form of a brokerage his total remuneration for doing the business.

Brokers in C.I.F. grain act as a connecting link between shippers and millers, shippers and merchants, or between the market and the speculator. A considerable brokerage business is done with clients in out-ports and on the Continent. The customary brokerage is 1½d. per quarter or alternatively one-quarter or one-half of 1 per cent, the larger brokerage being charged either when the broker's cable and telephone expenses are high, or as a premium to cover a *del credere* risk which he has assumed on his client's behalf.

Finally, there are brokers who specialize in organized futures markets. In this case a scale of minimum brokerages, binding on all members, is fixed by the authorities of the market concerned. It is, of course, permissible for

brokers to charge non-members a brokerage over the minimum rate, but in practice the minimum rates are also the maximum.

The merchants or importers of grain are a sadly depleted race. Their main function is to split up large parcels of grain and distribute them to small buyers. This process includes selling on credit terms and the employment of capital in other ways such as carrying grain on the spot. It is their business to bring along grain in anticipation of their clients' requirements, whatever their view of the market. For this purpose they run a book, expressing their own market views by its balance, either long or short, and using futures markets for hedging purposes in order to correct the balance in accordance with their opinion.

All classes of traders, provided their financial status warrants it, can and do trade as professional speculators either for their own or their clients' account. They spend their lives studying markets and, by backing their opinion in a variety of ways, are responsible for the maintenance of a market. They discount the future, and so, by their action, tend to eliminate a too violent effect of ever-changing conditions.

SECTION VIII

MILLING AND THE FLOUR TRADE

DURING the past twenty years the Milling Industry has provided a striking example of the general tendency of the age. Milling capacity in this country was extended during the war beyond normal peace requirements, with the result that, for some years afterwards, millers were forced into severe competition with each other for a sufficiency of business to keep their mills employed. War-time profits slowly melted, and the building of new mills with deep water frontage and the opportunities for economies in overhead expenses, which improved technical efficiency and organization on a large scale made possible, put several of the smaller mills out of business.

In 1929 an association called the Millers' Mutual was formed with the object of organizing the milling capacity of the country as a whole. Redundant mills were bought up and dismantled, their trade being divided among the remainder. This enabled the miller to concentrate more effectively on the manufacturing side of his business, instead of expending most of his energy in guessing the wheat market and in competitive price-cutting in a vain attempt to maintain his output. The large combines continued to expand by the purchase of small mills and the building of modern port mills, until a tendency towards virtual monopoly in the industry has developed. In 1934–5, several of these combines floated public companies on the strength of their improved positions, and the shares have become a popular investment.

The developments in the Milling Industry, however,

did not prove beneficial to the Grain Trade. Concentration of buying power in fewer hands tended to reduce the open market in grain, and made the services of the intermediary difficult to maintain. The big port millers found it possible to obtain all the advantages of the Grain Trade services without the necessity of employing its members, in many cases preferring to deal direct with the shippers, and evade the fractional brokerage to which the Trade considers itself entitled. It is, perhaps, doubtful whether the millers really understand the value of those services of which they make daily use gratis.

Organization in the Milling Industry really dates back to the year 1878 when the National Association of British and Irish Millers was formed. A convention of this association is held annually at various centres where business and pleasure can be combined. The Millers' Mutual Association, the National Joint Industrial Council and the Research Association are all offshoots from this parent association.

In order to appreciate the main problem of the milling business, it must be realized that the miller's product is not flour alone, but flour and offal. For the moment, the manufacture of animal foods can be ignored. It must also be understood that the prices of flour and offal fluctuate independently, and of course the cost of miller's grist is constantly changing. The percentage extraction of flour and offal, approximately 75 per cent and 25 per cent respectively, is under the miller's control, but he is prevented from increasing the extraction of flour beyond certain limits by the necessity of maintaining a competitive quality in his flour. The miller's problem can now be briefly stated as follows—

To purchase as cheaply as possible the most economical

mixture of wheats. To reduce the cost of milling by technical efficiency to the lowest possible figure. To sell his two products at the highest possible combined price.

It is obvious that the question of grist is of primary importance. Generally speaking, the miller sets a certain standard for his flour which varies with the individual miller, the country in which the mill is situated and the taste of the consuming public which he supplies. Bearing this standard in mind, he selects his wheats in accordance with their properties and price. Strong wheat with a high gluten content usually commands a premium over soft wheat. If, however, the two classes of wheat show little difference in cost, he may purchase an equal quantity of each, selecting the grades in accordance with his judgment, the reports of his chemists, and their relative prices. When strong wheats are appreciably dearer, he will reduce their percentage in his mixture progressively to about 25 per cent, probably confining his reduced purchases to the higher grades. Apart from wheats selected for special purposes such as flavour and to make self-raising flour, the miller chooses his wheats in the main for strength, colour, or cheapness.

Really strong wheat is grown almost exclusively in Canada, though some fairly strong wheats are still grown in Russia, Central Europe, and the Spring wheat belt of the U.S.A. The protein content of American Hard Winter wheat is relatively high in some seasons, and some of the Argentine crops have included wheat which might be classed as strong. Colour is obtained chiefly from Australian wheat, though good English wheat can help in this direction. An intermittent supply is available from the Pacific Coast of the U.S.A. (a wheat which is particularly popular with Irish millers), and occasionally from

India. The balance of the mixture is made up from any country where price and quality are competitive, but mainly from the Argentine and Europe, this latter portion of the grist being commonly known as wheat bought to fill the sack. Milling is a highly scientific industry, and certain wheats such as Durums have been found to possess qualities under treatment which improve the flour. The chemists are always busy with new methods both to improve the flour and cheapen the process.

Technical improvements in milling have attained an advanced standard in this country, particularly in the case of the modern port mill. Cargoes of wheat are worked alongside into silos, and the whole process of cleaning, mixing and grinding is carried out at an exceedingly low cost, especially as regards labour. In fact, it is asserted by flour importers that, sack for sack, the handling of imported flour employs as much labour as the whole process of milling.

Flour is packed in 140 lb. bags and sold per sack of 280 lb., the quality being described in a variety of ways such as Patents, Straight Run or Bakers, but the sale being made almost invariably under the miller's registered brand. Besides the milling of white flour, a considerable business is done in whole-meal and brown flour under proprietary brands.

Country mills are naturally prejudiced as regards their imports of foreign wheats, but are enabled to compete with port mills by the advantage which they enjoy from the cheapness of native wheats grown at their doors, and the cheaper cost of delivering flour to local markets and offal to local farmers. They also maintain that the quality and flavour of their flour are superior to the port-milled, possibly because a good local market for offal encourages

a tendency to extract a smaller percentage of flour, and also because their grist contains a higher proportion of English wheat. They compete effectively in the packet trade, and specialize in all-English flour which is sold to the makers of biscuits. These advantages of location, however, have recently been seriously threatened by the introduction of new cattle food compounds which the port millers are manufacturing in large quantities and advertising. New mills have been built exclusively for the manufacture of these compounds, a staff of specialists being employed for research and consultation with farmers and poultry-keepers, and this development is making it increasingly difficult for the small country miller to compete either in service or food values.

The importation of Dominion and foreign flour does not directly concern the Grain Trade, and is carried on under a distinct organization with its own association. Some of the large shippers include a flour department in their business, although the bulk of the trade is done by importers entirely independent of the Grain Trade. It does, however, directly compete with the millers of this country, who, consequently, periodically organize propaganda against it. The annual imports of flour are from three to four million sacks of 280 lb., which, compared with the total imports of wheat and flour, say twenty-seven or twenty-eight million quarters of 480 lb., only amount to approximately 10 per cent of the whole, after adjusting wheat to flour in the proportion of 4 to 3. This quantity, though small, is sufficient to provide some competition with the home miller, and in so far as it tends to prevent exploitation of the consumer, it is economically healthy competition.

Finally, a word about the baker. For general purposes,

the baking trade may be divided into large central machine bakeries and small bakers' shops. The large bakeries, owing to the size of their orders, and their better financial facilities, are in a position to influence indirectly the grain market by the adoption of any concerted forward buying policy, but, in practice, such policy almost invariably coincides with the general sentiment, and merely assists in the establishment of a natural price movement.

To appreciate the probabilities of their normal buying policy, it must be realized that the price of bread is regulated in accordance with a scale recommended by the Food Council. This scale permits an increase of a halfpenny on the quartern loaf for every 4s. rise in the published price of flour plus quota payment. It therefore follows that the baker is inclined to be a better buyer when the price of flour is in the lower half of the current 4s. range than when it is in the upper half, since his profit at the current price of bread is greater in the former case. Of course, the bakers nowadays are able and educated men taking an intelligent interest in the international grain situation, and do not confine their buying policy entirely to this rule of thumb. Their buying does assist the market to discount future price movements and in so far as it anticipates the future, it is an influence favourable to price equilibrium.

The baking trade is organized, and such decisions as the raising or lowering of the price of bread are taken by its own association, the National Association of Master Bakers and Confectioners.

SECTION IX

THE BALTIC MERCANTILE AND SHIPPING EXCHANGE

THIS Exchange is the modern counterpart of the nineteenth century coffee houses, amalgamating the business in tallow and grain carried on at the Baltic Coffee House and that of shipping originating at the Jerusalem Coffee House. The business started in these old coffee houses later developed into the Baltic Exchange, which moved to South Sea House, and the London Shipping Exchange, which absorbed the Jerusalem Coffee House. In the year 1900 these two companies, having both outgrown their accommodation, decided to join forces and build the present Baltic Mercantile and Shipping Exchange on the site of Jeffrey Square, St. Mary Axe, the new premises being opened for business in 1903.

The Exchange is one of the best examples of international business centres, and has a present-day membership of nearly three thousand. A variety of business is carried on by members, including coal, oil, oil seeds, soya beans, ground nuts and timber, but the interests in grain and shipping predominate.

The facilities for dealing in grain are extensive, it being possible for a member to buy grain in any part of the world or for shipment to any port in the world with a minimum of delay. It is also possible to charter almost any available vessel on the high seas without leaving the floor of the Baltic. Shippers, brokers, grain merchants and the larger millers are all represented, and large

transactions are personally negotiated in a few words. The more important brokerage houses doing business in international commodity markets are also members of the Exchange, and it can be safely stated that facilities are immediately available for trading in any of the world's organized commodity markets. There are two ring-markets on the floor, one for wheat and one for Argentine maize. These markets are controlled by the London Grain Futures Association, Limited, and, although only of recent date, are generally centres of active business. Telephonic and telegraphic facilities for the use of members are good, a large number of private telephone boxes being available in addition to extensive provision for public local and trunk services.

The notice boards supply current quotations from all the more important markets of the world, including a ticker service for London Stock Exchange prices. There is a service of announcements from Lloyds of ships' movements and casualties, and of course the customary general news service. In a room overlooking the floor a useful reference library is housed with accommodation for reading and writing.

The control of the Exchange and of the conduct of members is vested in a board of directors elected by the members, who must all be shareholders. The directors carefully scrutinize applications for membership, and generally take precautions against firms with insufficient capital incurring financial liabilities which they might be unable to meet. The prestige of the Exchange is naturally the primary concern of the board.

The accommodation both for business purposes and the comfort of members is good, the basement floor affording all the amenities of a club. The main hall has

SECTION X

SHIPPING AND FREIGHTS

FREIGHT is a component part of the distributional cost of grain, and, as such, it is necessary that the main features of the freight market should be understood by the grain trader for its movements to be quickly observed and discounted.

The shipowner is the seller, and the shipper the buyer of freight, and the market normally reaches an equilibrium price by the free play of supply and demand. For instance, shipping has been adversely affected by the large European crops of recent years and, conversely, high freights were obtainable during the war when European demand was heavy; then again, in 1935, the market received a fillip from the reduction in the available supply of tonnage which resulted from the withdrawal of Italian ships for the Abyssinian campaign, and a few months later, in 1936, the market eased on the poor Argentine wheat crop resulting in Europe increasing her purchases from Montreal, which is a relatively short voyage, combined with the reduction in international trade which resulted from the application of sanctions.

Broadly speaking, freights can be divided into two classes, liner freight and cargo freight. Space in liners will be available whatever the market, as grain is carried by them more or less in lieu of ballast, their main business being their passenger service. Normally, however, liner space is not sufficient to carry the grain exports of the world and cargo vessels have to be chartered for the business. It is necessary, therefore, for shipowners to

keep themselves well informed on prospective surpluses of grain which are likely to require transportation from one part of the world to another.

Cargo chartering generally takes place some time before the grain is required to be shipped, in many cases several months ahead, so that the owner is enabled to dispose his fleet throughout the world to the best advantage, and the shipper can make a forward sale of grain at a price which includes the cost of freight. A free market in freights automatically attracts shipping to the ports from which the best charters are obtainable, thus causing an economical distribution throughout the world.

In recent years, owing to the serious contraction of international trade, the supply of freight has been excessive with the result that the freight market has been depressed below the owner's cost. Eventually, the position got so bad that various governments subsidized their shipping in order to save their merchant fleets from disintegrating. Even the British government succumbed to a subsidy for tramp shipping, but accompanied its gift with conditions for the better organization of the service, and the initiation of international negotiations which have resulted in the establishment of a scale of universal minimum rates for most of the important routes.

In calculating the cost of carrying, the owner takes into consideration the round voyage, so that if a good rate of freight can be obtained for a cargo, say coal, outwards from the U.K. to Canada or the Argentine, then he can afford to accept a proportionately lower rate for bringing grain home.

The stowing of grain is a matter of some importance both from the owner's and the shipper's point of view. The owner is responsible to the shipper for turning out

the same quantity and quality of grain as he loaded, and he, through his officers, must therefore attend carefully to the separation of different grades and ensure by trimming that the grain will not shift should rough weather be encountered on the voyage. There are also the Board of Trade regulations relating to stowage which must be complied with.

Different classes of grain occupy a different cubic space for the same weight, so, for general purposes, they are divided into light and heavy grains. An amusing story is told against an Admiralty official, who, on the outbreak of war in 1914, instructed a shipper to substitute 1000 tons of hay for 1000 tons of maize in a vessel loading at Buenos Aires. It proved quite a difficult task to persuade this gentleman that although there was space in the ship for 1000 tons of maize, there was only space for about 200 tons of hay.

The responsibility of the shipowner to the shipper is carefully agreed in a form of contract called the Charter Party, and the shipper must be certain that his charter party empowers him to do everything which he has undertaken to do by contract with the buyer of the grain, and for this reason, if for no other, it is essential that the shipping and grain trade organizations should be in close touch with each other so that their representatives can negotiate authoritatively on all contractual questions. Charters can be arranged for one special voyage, or a ship can be taken on what is known as "time charter."

In estimating the cost of transport, a number of small expenses, such as the dues charged by different port authorities and the probable cost of delays, must be taken into account. The facilities of ports for the rapid handling of grain differ widely, and affect the speed with which a

ship can turn round and be ready for fresh employment. Demurrage rates, i.e. the charge for keeping the ship idle awaiting shipper's instructions, are usually agreed in advance, the rate being based on the cost of maintenance and the possibility of profitable employment. When rates of freight are good, quick discharge is obviously of considerable importance to the owner, the earning capacity of his ship depending on full and continuous employment. For this reason, certain badly-equipped ports are unpopular with owners and higher rates of freight are required to cover delays; so also are ports at which there is any prospect of labour trouble interfering with the prompt discharge or loading of the ship.

Owners of tramp steamers usually offer the shipper certain optional ports of discharge with rates adjusted accordingly, the option to be declared at some specified point on the voyage. The charter designates in the first place a certain range of ports to which the ship may be ordered, and, in the second place, at how many of the ports in any particular group the vessel may be ordered to call for the discharge of separate parts of its cargo. The owner is naturally more obliging with options when space is difficult to let, and, of course, the shipper will always give preference to the owner who will include the greatest number of useful options.

There is one service which a ship performs when grain is abundant and which is not always sufficiently appreciated, namely the storing of grain. When grain is at a discount in the near position, the owner earns his freight for long voyages as a warehousing charge rather than as a charge for transport, the shipper being able to make a relatively better price for his grain the longer it is delayed in transit. Of course, if spot supplies are small, the

converse is equally true, and in such cases the shipper will give preference to the fastest vessel so that he may be able to take advantage of the premium which will be obtainable for quick delivery.

The shipping business has its own technique and its own problems which need no detailed study here, but in order to indicate in a general way the routine methods of the business, the following representative offers of cargoes with interpretations will prove instructive. The three examples given include the Australian, Montreal, and Plate services, for all of which minimum schedule rates are now in force. The Vancouver route is the only important grain route which at the time of writing still remains unscheduled.

AN AUSTRALIAN OFFER

To load at one or two ports in Western Australia, a vessel of 7500 tons 10 per cent more or less at owner's option (i.e. to load not less than 6750 tons and not more than 8250 tons). To be ready for loading not earlier than 25th January nor later than 25th February. To discharge at a port in the United Kingdom or on the Continent between Bordeaux and Hamburg (both inclusive), but excluding Rouen and Nantes and slow Irish ports (viz., Sligo, Tralee, Galway). The rate of freight to be in accordance with minimum schedule in force. "Austral" form of Charter Party.

1/2 W.A.

7500 10%

25 Jan./25 Feb. U.K. Cont. B/H range (ex R.N. & Slow Irish)

Schedule rates

A CANADIAN OFFER

Vessel of 35,000 qr. of 480 lb. 10 per cent more or less at owner's option (i.e. to load not less than 31,500 qr. and not more than 38,500 qr.). To be ready for loading not earlier than 1st May nor later than 15th May. To load at Montreal, Quebec, or Sorel. To discharge at specified named ports (picked ports) in the United Kingdom. Charterers

35,000 10%

1/15 May M.Q.S./p.p. U.K.

Option A. R. to have the option of discharging instead at Antwerp or Rotterdam. Rate of freight to be in accordance with minimum schedule in force, i.e, 1s. 9d.[1] per qr. of 480 lb. of heavy grain to London, Hull, Cardiff, Barry, Swansea, Antwerp, or Rotterdam; 1d. per qr. extra Leith, Avonmouth, Dunston; 2d. per qr. extra Manchester, Liverpool, Birkenhead, Glasgow (any other U.K. ports including Ireland, but excluding Sligo, Tralee, Galway, 3d. per qr. extra; Sligo, Tralee, Galway 4d. per qr. extra). Form of Charter Party: Baltimore Form "C."

Schedule rates

AN ARGENTINE OFFER

6400 10% Vessel of 6400 tons 10 per cent more or less at owner's option (i.e. to load not less than 5760 tons and not more than 7040 tons) owners guaranteeing a

(60 ft.) measurement of not less than 60 cub. ft. to the ton deadweight. To be ready for loading not earlier

20 Jan./ 10 Feb. than 20th January nor later than 10th February. To load at one or two ports or places in the River

N/a Lorenzo bar draft Parana not higher than San Lorenzo as much cargo as she can safely take over Martin Garcia Bar without lightening and the balance of cargo at Buenos Aires or La Plata with a reduction of 1s. 3d. per ton for cargo loaded at Buenos Aires or La Plata.

To picked ports U.K. or Cont. A/H range To discharge at specified ports in the United Kingdom or at a Continental port between Antwerp and

Schedule Hamburg (both inclusive). Rate of freight to be in accordance with minimum schedule in force (viz. 17s. 3d.[1] per ton Antwerp, 17s. 6d. Rotterdam, Cardiff, Barry, 17s. 9d. London, Hull, Liverpool, Birkenhead, Avonmouth, 18s. any other Continental port except German, German at 18s. 9d. per ton). Form of Charter Party "Centrocon."

[1] All these minimum rates have been revised upwards since they were introduced.

SECTION XI

MARINE INSURANCE

In the early days of merchant shipping, the functions of shipper and shipowner were much more closely associated, and, in many instances, actually vested in the same financial interest. A ship acted as an international store, moving round the world loading produce indigenous to one country and carrying it to another where a better market might be anticipated. Money was invested in the venture and if the ship foundered that money was lost.

As international trade developed, the functions of shipper and shipowner became separated, and, in consequence, the financial risks to ship and cargo required careful definition and apportionment. It was natural that differences of opinion should arise as to whether a ship ought to have been hazarded in an attempt to save a valuable cargo, or a cargo jettisoned in order to save a ship. Experience soon showed that the business of merchant and carrier required different and specialized knowledge but that no degree of efficiency could eliminate misfortune at sea, a risk which could ruin the most capable merchant and the most experienced owner. It was in these circumstances that independent financial interests prepared to assume these risks, undertaking to recompense both owner and shipper in the event of loss, were welcomed, and for their services an appropriate charge was arranged.

From such beginnings, the business of insuring adventures by sea has grown. Rules have been drawn up to safeguard this service from being unscrupulously or improperly used, and methods have been standardized.

The business, being international, is circumscribed by a code of international laws which are embodied in the national codes of all mercantile states, and the geographical position of this country has made marine insurance one of England's important financial interests.

A detailed account of the business cannot be crowded into a single chapter, but the following points will provide an outline of the general procedure.

Insurance is obtained by means of a contract with an insurance company or Lloyd's underwriters, by which they undertake the insurance of a specified cargo or a certain part of that cargo against risks incurred by sea adventure. The terms of this agreement are embodied in a Marine Policy and a premium based on a percentage of the value of the grain is charged.

Policies on grain are generally "Valued Voyage Policies" which provide insurance on the grain from shore to shore, at the same time naming the ocean-going vessel by which the grain is being shipped. Policies are taken out, in the first instance, for an amount 2 per cent over the C.I.F. value of the grain less freight at time of shipment, but should the value increase after shipment, a further policy will be taken out for the increased value. The insurance of increased values is often covered by a floating policy, particulars of shipments being provided by declarations from time to time as required. Should the grain change ownership on discharge it is no longer covered by a Marine Policy, once it has left the ocean-going vessel.

Claims arising under a Marine Policy may be divided as follows—

(1) Total Losses: (*a*) Actual;
(*b*) Constructive.
(2) Partial Losses.

Actual Total Loss requires no definition as its meaning is clear. Constructive Total Loss occurs when the grain is destroyed or jettisoned in order either to save life or value which is in excess of the value of the jettisoned cargo. The term Partial Loss covers all other losses.

Claims for loss are assessed and apportioned between the interested parties by what is termed an average adjustment, either particular or general; but since grain is customarily sold free from particular average, claims can only arise in the case of a general average act. A general average act is carefully defined to include expenditure as well as sacrifice, which means that the policy covers expenditure properly incurred in time of peril or for the purpose of preserving the property insured in the common adventure. The bill of lading holders are generally required to sign a general average bond before obtaining delivery of grain from a ship which has been in any trouble during the voyage. Claims for demurrage or loss of market through delay on the voyage cannot be admitted, nor are underwriters responsible for damage, inherent in the grain, which has developed during the voyage. If a course for the voyage has been agreed in the policy, *a deviation therefrom can invalidate the policy*; consequently, special arrangements with the owners for a deviation from the original course must only be made after careful examination of the policies.

The interests of underwriters, and in some cases both parties, are looked after by Marine Surveyors who investigate the causes of damage or loss and report to their employers. They are also entrusted with the disposal of salvage. The General Average Statement is drawn up by Average Adjusters and agreed as between insurer and insured. Both Marine Surveyors and

Average Adjusters are specialized professions independently employed.

Generally speaking, in all cases of damage which call for the prompt action or decision of the insured, it may be taken as a guiding principle to act in all matters as though uninsured. It stands to reason that since the underwriters are insuring your risk, you cannot act more correctly in their interests than by endeavouring to minimize the liability of that risk.

SECTION XII

BANKING SERVICES TO THE TRADE

THE finance of the Grain Trade can be divided into two kinds, the finance of market differences, and the finance of carrying. The first kind is obviously of such a nature that it could not legitimately be carried out by a bank, and is in fact borne by the firms specializing in the various branches of the Trade. The second kind, on the other hand, could not be managed without the banks, and it is one of the duties of the Trade to provide the banks with a marketable security against which they can safely lend money. The assistance of the banks is required for the carrying of grain in store and in transit. The duration of the loan is generally short, but in order that the banks may feel certain of their security, they must be satisfied as to its cash equivalent, not only at the time they advance the money, but thereafter so long as they continue to be interested. This requirement is met in two ways, either by providing them with reliable market quotations on which they can base periodical calls on their clients to maintain an agreed margin, or by proving a forward sale or hedge on a futures market which will ensure to the banks the return of their money at some future date. In exporting countries where the grain business is naturally of vital importance, hedging facilities are carefully studied by the banks, and grain is carried by this means from the time of harvest to the time of export or consumption.

The banks also advance money to established farmers against crops before harvest, but this type of loan cannot

be classed on the same footing, it being more in the nature of a loan on the farm than on the grain.

Grain in transit is financed by discounting bills on the security of bills of lading, the advance being made for a period of time which is denoted by the maturity date of the bill discounted, and which is generally arranged to cover the time required for the grain to reach its destination.

Bills of lading, which are issued in triplicate, have been aptly termed the keys to the goods, and the banker must be exceedingly careful that the bills against which he is lending money or for which he is paying on behalf of a client are the correct keys to the goods in question. If a client should by letter of credit instruct his banker to pay a sum of money in exchange for documents which are described in the letter, and the documents presented do not in fact agree with that description in some material detail, the bank by accepting them will incur an unknown liability. A very small discrepancy may entitle his client to refuse acceptance. It therefore follows that the banker must take greater care on a falling than a rising market. It can be clearly seen from what has been said that a good knowledge of the technicalities of the trade and a close contact with the market are essential qualifications for commercial banking.

On the arrival of the grain at its destination, bankers offer further facilities which are constantly used by merchants, not only in the carrying of spot stocks, but also in the distribution on credit terms. This latter service, which is not too widely known, is called hypothecation. An established merchant can go to his bank with a bill of lading for a parcel of grain which he signs over to the bank, and receive it back for release, and distribution of

the grain, on presentation of a list of small consumers to whom the grain has been sold on credit terms. This would naturally be subject to the names being acceptable to the bank. The banker will then lend the money value of the bill of lading to the merchant on his undertaking to liquidate the loan by presentation of his buyers' cheques as they are received.

The banks provide one other service which is essential to the grain shipper, namely a market in foreign exchange. The importance of this market to the Grain Trade has considerably increased since the war. So many countries have abandoned a gold basis that the exchange risk on forward grain contracts is exceedingly hazardous until covered by a forward sale of currency with a first-class bank. The exchange risk is also present in many classes of arbitrage business or straddling between markets in different countries, although, in fact, no actual shipment may be contemplated. If the risk is covered with a bank, it may happen that the profit will lie entirely with this cover, the difference in price between the two grain markets remaining constant.

The risk of exchange fluctuation can be stated in the following proposition: If a commodity is purchased in "A" currency and sold in "B" currency, it follows that, provided the commodity retains a constant gold value in both markets, its price will rise where the currency falls and fall where the currency rises. Or to bring the general proposition down to a concrete example, if wheat is bought in dollars and sold in sterling, other factors being constant, the transaction will improve if dollars depreciate in relation to sterling and deteriorate if sterling depreciates in relation to dollars.

SECTION XIII

STATISTICAL AND NEWS SERVICES

THE formation of a market in grain is accomplished by buyers and sellers arriving at an equilibrium price by bid and offer, and this price should, therefore, provide a reasonably accurate indication of the supply and demand both on the spot and in prospect. It follows that traders on both sides of the market require to be fully aware of the available facts and conditions affecting supply and demand before they are in a position to operate intelligently. Efficient and accurate information is therefore worth remuneration and can command it from both sides, because no one trader can afford to be less well-informed than another.

In the U.S.A. various educational institutions interested in statistical research, such as the Stanford University, publish information gratis. Large brokerage houses with statistical and crop-reporting departments distribute a constant stream of information to their clients which is quickly disseminated throughout the international trade, and there are also services which collect and distribute information for payment, such as the Sandford Evans Statistical Service.

All the important producing countries employ government departments for the collection of statistics and crop-estimating, and these official estimates afford a fairly accurate basis for discovering the international supply position.

In the United Kingdom, two trade newspapers publish daily editions and weekly reviews of the market position,

together with price graphs and estimates of the international supply and demand for each season, Messrs. Broomhall's *Corn Trade News* of Liverpool, and the *London Grain Seed and Oil Reporter.* Reuters have a statistical news department and a rapid service of quotations which is used by many brokerage firms in all parts of the world. The International Institute of Agriculture at Rome also collects information and issues commentaries on grain from time to time. In countries where agriculture concerns a majority of the people, the ordinary daily and weekly press provides news and estimates of interest to the Grain Trade. In the Argentine, the *Times of Argentina* and the *River Plate News*, and, in Canada, the *Winnipeg Free Press* represented by a notable woman crop expert, Miss Cora Hind, all collect useful information from a large number of correspondents in the farming districts. Altogether, the Grain Trade is provided with such a mass of material that it is with the utmost difficulty a student of the international position can select accurate facts from individual opinions and rumours.

The main objects of all these services can be enumerated collectively as follows—

(*a*) To provide the Trade with information as to the quantity of grain held in store wherever the figures are ascertainable, the visible supplies in different countries having an important bearing on market prices.

(*b*) To report the shipments of grain and the quantities on passage with details of destination when possible, with particulars of customs entries.

(*c*) To report business done with prices and full details of every transaction about which reliable information can be obtained.

(*d*) To report daily influences on markets with the current trend.

(*e*) To report present weather and forecasts in all parts of the world wherever the growth or movement of crops can be affected, and to estimate the size of important crops from time to time.

(*f*) To report any items of news which can affect or interest the Trade, such as the activities of trade organizations, or developments of a political or financial nature which might influence markets.

(*g*) To provide, generally, as accurate a picture of the supply and demand position as they can, assisting their readers with as much data as they can discover to form an intelligent opinion on the likely trend of prices in all markets.

(*h*) To report on the freight market, with details of all charters and information on the movements of grain carriers.

(*i*) To report on all secondary markets such as foreign exchange, bags and flour, etc.

In addition to the agencies enumerated, a vastly improved meteorological service is now available for the use of the Trade. By the international co-operation of air services, shipping companies and government agencies, very complete weather maps are now compiled from wirelessed reports, which are making forecasts of the immediate weather prospects increasingly accurate. In London, these maps are obtainable from the Air Ministry, and a very little experience will enable the reader to obtain a fair idea of the weather being experienced in the various grain belts.

SECTION XIV

WEATHER AND CROPS

SUB-PARAGRAPH (*e*) of the preceding section requires considerable amplification, as it is by far the most important from the point of view of the active grain trader. The weather in each country where important acreages of grain are sown must be watched with the closest attention. The condition of the seed bed is the first concern, and the amount of moisture received before seeding is carefully noted. The weather during seeding is important, particularly in Canada on account of the short growing season. Excessive rain or drought can prevent the whole of an intended acreage from being sown or can delay sowing beyond the normally safe time. In the prairies, wheat seeded after 25th May runs serious risk of frost before harvest; the fastest growing varieties take approximately 103 to 108 days to mature in Manitoba and 110 to 115 days in Alberta. In some parts of Northern Alberta where the sun's rays are less powerful, the best types of wheat, such as Marquis, take as long as 120 days to mature.

Careful selection of seed is always important, and after harvests which have suffered from either frost or rust, it is often difficult to obtain sufficient supplies of good quality seed. Normal germination of wheat should be at least 85 per cent in six days, whereas germination from rusted or frosted seed may be below 20 per cent in the same period, and the lowered vitality of such seed calls for ideal growing conditions for a normal crop to be harvested. Rust-resistant wheat is being produced in Canada, but

sufficient seed is not yet available for general distribution, the best variety at present being an American wheat called Thatcher recommended by the North-west Crop Improvement Association.

Winter wheats, especially in the United States, have to survive frost in the earlier stages of growth, alternate freezing and thawing with insufficient snow-cover being the most harmful kind of weather. An appreciable percentage is always winter-killed in the U.S.A., but it is difficult to obtain a reliable estimate until the crop recommences to grow in February or March.

Estimates of sub-soil moisture for both Winter and Spring grains are important: continuous rains during growth are essential when sub-soil moisture is known to be deficient, whereas grain seeded in land amply supplied with sub-soil moisture can survive quite long periods of drought, particularly wheat with its roots which grow to a depth of six feet or more.

Too much rain in the later stages accompanied by a warm humid atmosphere produces rust, which is classed as red, yellow or black, the latter being a particularly virulent fungus which spreads rapidly. The spores travel with the wind, often at an altitude of a thousand feet, for long distances. The disease itself attacks the stalk, gradually eating it away and thereby preventing the sap from reaching the ear. It is often a race between the ripening of the wheat for harvest and the rust, and, if the rust wins, the berry shrivels up and withers for want of nourishment. One of the worst examples of this disease occurred as recently as 1935. In that year, a Spring crop in the U.S.A. which promised 300 million bushels, was reduced to half that quantity of very light-weight wheat, and a Canadian crop which might otherwise have been

about 500 million bushels was reduced to under 300 million bushels, thus entirely altering the international statistical position for the 1935–6 season.

Good rains on land which has been insufficiently prepared often produce an excessive growth of weeds. This has frequently happened in Russia, the harvested grain containing a large percentage of admixture, which reduces the milling value of wheat on account of the difficulty of extracting seeds, such as Melilot, which taint the flour. Frost, just prior to harvest when wheat is in what is known as the milk stage, shrivels the grain and generally lowers the grade. Excessive rain during harvest toughens the grain and increases the moisture content, thus reducing its milling value, but not reducing the size of the crop.

Besides the afflictions of disease and unsuitable weather, insect pests of various kinds take their toll of the crops; among the most important are the locust or grasshopper. A close watch is kept on these pests by government departments, both in the Argentine, where it is known as the locust, and in the U.S.A. and Canada, where the grasshopper menace sometimes assumes considerable proportions; and, when large numbers are reported to be hatching out, extensive campaigns are organized against them. Hessian fly, cut-worms, wire-worms, chinch bugs, and a variety of other insects also cause damage to crops, and are reported from any district where their activities are sufficiently important to merit comment.

Enough has been said to show that the well-informed grain trader has plenty to think about. It must also be fairly obvious that some considerable knowledge is necessary before he can hope to make accurate deductions from the tangled mass of facts, figures and forecasts which are served to him daily, and hourly, by the news services of the Trade.

SECTION XV

THE BEARING OF NATIONAL POLICIES ON PRICE

THE primary consideration in selling policy should, economically speaking, be based on cost of production. However, not only is this often exceedingly difficult to arrive at, but in cases where the State decides the policy, cost of production bears no relation to selling price.

In the case of Russia, grain is exported mainly in order to obtain foreign exchange with which to finance necessary imports, and it therefore follows that in times when international prices are low, more grain must be sold to obtain the same amount of foreign exchange.

In the case of France, where, by means of import duties and quotas, internal grain prices are maintained at a level which is considerably above international prices, exports are made possible by a government subsidy whenever an excessive surplus of grain has accumulated in the country. Such exports are only influenced by the international price in so far as this affects the amount of the subsidy necessary to make them competitive and the consequent drain on the national exchequer.

In all countries the price of grain must be considered in relation to the general price level, which has been variously affected by currency devaluations. Australia devalued her pound by 25 per cent before Great Britain left the gold standard in 1931, and remained 25 per cent below sterling after that date. Canada, owing to her financial liabilities in the U.S.A., only followed Great Britain part of the way at first, but depreciated her dollar in line with the U.S.A. when Roosevelt also abandoned the gold standard.

The Argentine currency has been depreciated to varying extents at different times, but a new policy was introduced towards the end of 1933, whereby the rate for export bills was pegged first to the dollar and later to sterling. All exchange transactions were controlled and rates for imports were fixed by the government from time to time, but always at such a figure that a handsome profit accrued to the exchange fund. At 15th August, 1935, the Ministry of Finance had made a profit of $197,800,000, of which it was decided to spend $50,000,000 on the construction of a system of grain elevators. Contemporaneously with the introduction of exchange control, minimum prices for grain were fixed by the government, 5·75 pesos for wheat, 4·40 pesos for maize, and 11·50 pesos for linseed, and at these prices the government grain board undertook to buy from the farmer, and, in fact, did buy substantial quantities of wheat in particular. As a result of the widespread drought of 1934, the operations of the board proved highly successful, and a prospective world shortage of feeding grains caused an appreciable rise in the value of all its holdings, enabling the decks to be cleared ready for the next crop. On the 13th December, 1935, the minimum prices for wheat and linseed were raised to 10·00 pesos and 14·00 pesos respectively, the prospects for the approaching harvest being considered very poor. Later still, in March, the maize price was also raised to 5·00 pesos.

Competition for the international market between Canada and the Argentine has increased during the last few years, and both governments have taken steps to support their producers. In Canada, where facilities for carrying are infinitely superior, the Conservative government concentrated on holding the surplus off the market,

and the government agent succeeded in accumulating some two hundred million bushels of wheat by the close of the 1934–5 season.

In the Argentine, where storage facilities are at present very limited, the government has spent all its efforts on exporting the country's surplus at world prices and making use of the exchange fund to subsidize growers when prices fall below cost.

Both governments have incurred some risk, but by far the greater risk was assumed by the Canadian government, and the relative position in the world's market during the past few years would indicate a definite advantage to Argentina, viz.—

Percentage of World Exports (Wheat and Flour)

	Argentina	Canada
1930–1	15·8	32·9
1931–2	18·0	27·0
1932–3	20·6	43·0
1933–4	26·8	37·0
1934–5	34·7	31·6

It is possible, however, that, thanks to the black rust of 1935, Canada may escape Nemesis, but it cannot excuse by far the greatest gamble in history. It is estimated that if the spring crops of 1935 had fulfilled their early promise, the Canadian government would have lost $100,000,000 on their operations. In the autumn of 1935 the Conservative government was replaced by a Liberal government with entirely different views. This government immediately started to undo the work of its predecessor, appointing a new grain board instructed to dispose of the surplus as quickly as the market would take it. A poor Argentine harvest helped them, but meanwhile the market was depressed by the knowledge of their intention

and the constant uncertainty as to the degree of pressure which this grain board would exert.

Throughout the 1935–6 season, the Canadian farmer has been paid the minimum price of 87½ cents basis No. 1 Northern Manitoba at Fort William, which price was fixed by the Conservative Government, but sales have been made by the Liberal Government Grain Board at appreciably less than this price. At the time of writing a policy for the new season is under consideration, and in view of the experience gained in recent years, the commission entrusted with this task may be expected to produce a more realistic policy.

Outside the United States, no government has (Russia excepted) made any serious attempt to control production, and since the minimum prices are fixed by the various wheat-growing states at a figure which it is estimated will repay the farmer, it follows that a low international price no longer exerts its influence towards a curtailment of acreage. Furthermore, as a result of state action in maintaining an artificially high domestic price in most of the Continental countries, a low international price no longer stimulates consumption. It would, therefore, appear logical that either this interference with the normal reactions to economic laws must be withdrawn, or some further international legislation must be evolved to take their place and artificially produce the same reactions.

In 1933, a first attempt at international planning was made, and resulted in the London Wheat Agreement. This agreement was a valiant endeavour by government officials to allocate the export business and organize production, but within twelve months a bumper crop in the Argentine destroyed the illusion. The committee continues to meet periodically, but its influence on prices has, so far, proved negligible.

SECTION XVI

THE BEARING OF PRICE ON PRODUCTION AND CONSUMPTION

IN a country like Russia where agriculture is entirely state planned, price has no bearing on production except in so far as it may influence the authorities. In other countries, such as the three chief exporters, Canada, Australia, and Argentina, the individual producer decides his sowing programme with one eye on the relative prices of grain as indicated by the futures markets and the other on his estimated cost of production.

The actual cost of production, however, is exceedingly flexible; costs rise with prices and are cut when prices fall. Where large tracts of land are farmed, certain economies in organization and by the increased use of machinery reduce costs, and although this is an advantage when grain is selling over cost, it quickly becomes a liability when grain prices are below cost. On small farmsteads, in bad years the cost of production is practically reduced to the bare cost of living of the farmer, his family, and horses. Their standard of living rises and falls with the yield and price of grain in relation to the general price level. It is only natural that in bad years the farmer produces the utmost of which he is able with his own efforts, and in good years he will hire labour and work less hard himself. Generally speaking, however, the small farmer is tied to his land and forced to produce grain whatever the price, there being little or no alternative occupation in the locality.

An estimate on costs made at the Dominion Experimental Farm at Brandon, Manitoba, will be useful as a rough indication, and runs as follows—

Based, for 1934, on data secured from sixteen prairie stations in the Province of Manitoba and covering sixty separate fields of grain, the average yield of wheat per acre from thirty-five fields was over 19 bushels produced at a cost of 56 cents per bushel. The average yield of oats per acre from seventeen fields was 31 bushels produced at a cost of 35 cents per bushel, and eight fields of barley gave an average yield of 30½ bushels at a cost of 40 cents per bushel.

It is obvious that, where farmers are free from state interference, they will grow the crop from which they anticipate the largest profit, provided their land is suitable. Consequently, the grain which at seeding time shows the best spread between market price and cost will by natural selection tend to be in better supply by the following harvest. In this way price automatically adjusts production to the needs of the community, and artificial interference with this process is, generally speaking, harmful to the world's economy.

The consumption of bread-grain is not very elastic in civilized countries; a fall of say a penny in the quartern loaf does not immediately stimulate the consumption of bread in a country where the variety of choice in food is great. Price does, however, have an important bearing on the consumption of wheat-flour in Eastern countries where the standard of living is low, and the relative prices of rice and wheat exert an appreciable influence on the diet of the middle classes, though the poorer peasant class rarely tastes either. Rye bread provides a direct substitute for the wheaten loaf in Russia and on the Continent, and maize-flour also is used in breadmaking when the price of wheat is high, particularly in Central Europe.

In feeding grains a greater degree of substitution takes place, the feeding of animals being looked upon as a business in which the costs must be kept as low as possible.

The animals' taste is not a consideration provided they thrive, nor may they indulge in food fashions like their human masters. Substitution has increased as a result of the introduction of compound foods, the manufacturer naturally selecting the cheapest ingredients which will give the required analysis.

The price of grain also has a direct bearing on the production of animals and animal products. In the U.S.A., for instance, a low price for corn will automatically result in an increased population of hogs, which in turn will effect a reduction in the price of lard, and, conversely, a high price for corn will result in a reduction of the hog population and an increase in the price of lard.

Free play in the price of grain effects a natural adjustment of supply to demand, and the results of artificial interference with price are often far-reaching and very difficult to calculate.

SECTION XVII

HOW GRAIN IS SET IN MOTION

IT is impossible to point to any one transaction as a comprehensive example of how grain is set in motion. It is the cumulative result of a series of transactions, quite possibly starting with a short sale. If our inquiry is confined to the business in Canadian wheat, we shall get a sufficiently representative picture of the general mechanism by which grain is moved from point to point on its journey from farm to mill.

The first stage is the country elevator,[1] some of which are run by private interests but most of which are owned by farmers' co-operative associations. In 1935 there were 5729 of these elevators in the Prairie Provinces with a capacity of 190,000,000 bushels. The farmer carts his wheat to the nearest elevator and either sells it outright on sample or delivers it to the elevator for storing. In the latter case, the grain is binned separately and its identity preserved. A certain amount of mixing of the bought wheat is expertly done by the elevator company, and twenty years ago the private owners undoubtedly "made a grade" in the process. In fact, the co-operative movement was started, to a great extent, in order to defeat the malpractices of private elevators which defrauded the farmer in both weight and grade.

From the country elevator the wheat is moved by rail to either Winnipeg or Calgary, at which point[2] it receives its grading certificate. With this certificate and the

[1] Under the Canada Grain Act, it is now necessary for all elevators to be licensed.

[2] Inspection points are also provided at Edmonton, Moose Jaw, Saskatoon, Fort William, Montreal, Quebec, Halifax, and St. John.

elevator receipt, the farmer is in possession of a negotiable document which can be sold immediately or given as security for a loan at any bank. The wheat is graded on the track in carloads of about 1500 bushels, the government inspectors taking samples from each car and issuing the grade certificates for each car after examination at their offices. If the farmer is a member of one of the Pools, a partial payment on account will be made as soon as he delivers his wheat to the elevator, and his interest from that point is limited to any further dividends from his Pool.

The purchase of wheat by the elevator house is almost invariably accompanied by sales on the Winnipeg futures market, which are averaged over the day to balance that day's purchases. The movement from the elevator, whether east or west, will depend on the relative market prices at Fort William and Vancouver, and the cost of railing in each direction. Once the grain has been graded at Winnipeg or Calgary it loses its identity in the terminal elevators of Fort William or Vancouver, its grade alone being respected. A further and final inspection is made of all grain loaded into boats and a shipment grade certificate is issued which remains with the wheat to its ultimate destination.

The combined elevator capacity of Fort William and Port Arthur is the largest in the world, approximately 92,680,000 bushels, and includes the most modern facilities for rapid handling. The record quantity of wheat shipped from these ports was 293,435,687 bushels in the year 1928–9. The largest number of cars unloaded in one day was 2748 containing 3,794,208 bushels on the 2nd October, 1928. The greatest quantity of grain shipped in one day was 6,395,814 bushels on the 29th November, 1928, and the heaviest cargo of wheat loaded in one vessel was the

571,796 bushels loaded on the s.s. *Lemoyne* in July, 1929.

Arrived at Fort William–Port Arthur, the movement by lake steamer to Montreal, or to Buffalo, from which latter centre wheat is distributed during the freeze-up, constitutes a separate impulse, which is dependent on the premium over Winnipeg ruling at these points. This premium will fluctuate in close proximity to the actual cost of moving wheat from Fort William, but will also be affected by the international demand, the stocks already there awaiting shipment, and the time of year.

There is an active market in premiums[1] at all points of shipment. The buyer of premiums contracts to take delivery of a specified grade of wheat on a certain date at a price differential; i.e. he pays for the wheat and hands over to his seller a sale contract for a similar quantity of futures in the Winnipeg market, the only agreement about the price being the amount of the difference between the cash price and the futures price. For instance, if the cost of moving wheat from Fort William to Montreal is x cents per bushel, the premium for No. 1 Northern Manitoba at Montreal will fluctuate from something under x-over-Winnipeg to x-over-Winnipeg. It follows that directly premiums rise sufficiently to cover the cost of movement from point-to-point, such movement takes place, and in consequence premiums are obtainable on most days in the year at less than the cost of movement. Generally speaking, all wheat in traders' hands, in whatever part of Canada it is situated, is attached to the

[1] "Premium trading" is practically confined to the U.S.A. and Canadian markets, and is not yet understood by the Trade in this country. A detailed scheme for the introduction of "premium trading" in conjunction with the London futures market is in the hands of the Council of the London Grain Futures Association, but its adoption has not so far been considered advisable.

Winnipeg futures market, the differential being closely related to the cost of moving to or from the market.

In recent years, the opening up of the Port of Churchill has added another route via which grain can travel during the summer months. The cost of railing to this port, the ocean freight, and insurance rates have now been sufficiently reduced to make this route competitive. Some comparative figures for the 1934 season which were published by the *Western Producer*, the official organ of the Saskatchewan Wheat Pool, are of interest and will serve to indicate a basis for calculating premiums at shipment ports and prices C.I.F. British Ports—

VIA MONTREAL–SOREL–QUEBEC	*Cents per bushel.*
(1) Handling at country elevator (including insurance against loss by fire and storage for 15 days); official inward inspection, weighing and registration fees; and selling to exporter on Winnipeg market	3·75
(2) Railway freight from average western point shipping to Fort William–Port Arthur terminals	13·50
(3) Handling at terminal elevator (insurance, etc., and storage for 15 days); outward inspection, weighing and loading into vessel	1·50
(4) Lake freight, Fort William to Montreal–Sorel–Quebec (including cost of trimming cargo, brokerage, lake and outturn insurance, and charges for cargo transfers from large to small boats)	6·40
(5) Approximate average cost of freight, insurance (marine and outturn) between St. Lawrence ports and British ports, calendar year 1934 (including fobbing charges at Montreal–Sorel–Quebec)	6·35
Total approximate cost between producer and C.I.F. British Ports	31·5

The figure for the year 1935 was 30.5.

VIA PORT CHURCHILL	*Cents per bushel*
(1) Handling at country elevator, etc. . . .	3·75
(2) Railway freight to Churchill (actual average) .	12·985
(3) Handling at Churchill, etc.	1·50
(4) Ocean freight to British ports (including outturn insurance)	8·70
(5) Marine insurance at 1% of value . . .	·815
Total approximate cost between producer and C.I.F. British Ports	27·75

The figure for the year 1935 was 25.5

A similar calculation via Vancouver came to 30·5 and was the same for the year 1935.

In the above calculations, most of the component figures are more or less constant with the exception of freight charges, particularly ocean freights. Naturally, the longer voyage provides a greater opportunity for fluctuation. It therefore follows that the speculative shipper, who puts wheat afloat unsold, incurs a greater risk of a fall in the freight market when his wheat is shipped from Vancouver than when his wheat is shipped from an Atlantic Port, but he has the advantage of a longer period, while his wheat is afloat, in which to complete his sale C.I.F.

The actual movement of wheat from one country to another is assured when the shipper contracts for wheat F.O.B. the port of shipment and takes freight. The sale C.I.F. the receiving port may be made at the same time, but is more often made either before or after the contracts which actually produce the movements. At first, it is a little difficult for anyone outside the shipping and commodity business to grasp the idea of selling wheat C.I.F. short, but as the C.I.F. sale is often the most

difficult part of a deal to effect at a satisfactory price, it frequently precedes the putting together of the complete transaction. The shipper is in constant touch with the four important markets, futures (in the country of export), premiums, freight and C.I.F. which together with the insurance complete his puzzle, and he can contract in each market separately. For example, he may go long of premiums at Vancouver when they appear cheap, and at a later date he may charter freight when that market seems to him unduly depressed. He is then in a position to make daily offers of wheat C.I.F. on the basis of the Winnipeg futures market, or, in other words, he has contracted to bring wheat along hedged in the Winnipeg market. Alternatively, should the shipper anticipate a fall in either the premium market or the freight market or both, he may buy futures in Winnipeg and sell futures C.I.F. London, contract for the necessary exchange of sterling into dollars and await an opportunity to complete the transaction when the anticipated fall in either premiums or freights materializes. In order to make the above two examples readily understandable, illustrations of the three actions required to complete the deal in each case are appended, viz.—

EXAMPLE "A."

1. Buys premiums (i.e. contracts to buy cash wheat and sell Winnipeg) at Vancouver.
2. Takes freight and insurance.
3. Buys Winnipeg. Sells C.I.F. London.

EXAMPLE "B."

1. Buys Winnipeg. Sells C.I.F. London.
2. Buys premiums (i.e. contracts to buy cash wheat and sell Winnipeg) at Vancouver.
3. Takes freight and insurance.

Once it is appreciated that the mechanism of the Grain Trade provides facilities for all these constituent contracts to be made independently and with the utmost rapidity and that the personnel is always on the watch to take advantage of the smallest favourable movement in any one of these constantly fluctuating markets, then, perhaps, the student will begin to understand how it is possible for wheat to be offered C.I.F. receiving ports, almost daily, at prices well below the apparent cost of getting it there.

SECTION XVIII

THE WORKING AND WAREHOUSING OF GRAIN

APPROXIMATELY 25,000,000 quarters of wheat, 13,000,000 quarters of maize, 4,000,000 quarters of barley, and 2,000,000 quarters of oats are imported into Great Britain and Northern Ireland each year, and with the exception of unimportant quantities of European grain shipped in small cargoes direct to coast mills, it all enters via a few ports of which the most important are London, Liverpool, Birkenhead and Manchester, Bristol and Avonmouth, Hull, Glasgow, Leith and Belfast. At all these ports facilities for handling grain are available, and importers must thank the ingenuity and foresight of port authorities for the efficiency of those facilities.

Each port is controlled by a port authority which collects dues on the ships and cargo entering the port, and from this revenue provides the accommodation and equipment which are largely responsible for the dispatch with which a ship can turn round. Their aim is to attract tonnage by reasonable charges and efficient service, but, at the same time, their credit must be maintained by regular payments of interest on their borrowed capital, so that they can always obtain new money on reasonable terms for further improvements and developments to the port. Facilities for handling grain vary slightly from port to port, and there are established customs peculiar to certain ports, but a brief account of the general practice in London and Liverpool will provide a sufficiently instructive picture.

The Port of London Authority is a public utility

corporation established by Act of Parliament, but independently financed by stock issued to the public. It is an enormous undertaking and its policy is in the hands of a board representative of all the interests using the port and the government.

On the arrival of a ship in London, it is reported at the Customs House. The date of this report is important because, among other things, it governs the time allowed for discharge. It has been established as one of the customs of the port that receivers shall be given twenty-four hours' grace, after a vessel has reported, in which to get their release down to the dock and their craft alongside. Longer time can often be arranged, but certain liner services, such as those carrying Australian parcels, refuse to acknowledge this custom, and grain shipped by these lines is sold with a special "Steamer Bill of Lading" clause added to the contract. This clause permits the ship to land the grain for buyers' account immediately it has docked if craft and documents are not ready.

It is for these reasons that receivers of grain must keep in close touch with the ship's agents or company office, so that the arrival of the vessel does not catch them unprepared to accept delivery. The fact that a ship has reported does not necessarily imply that she has docked; a representative may be landed at Gravesend and travel by train to the Customs House in order to report as early as possible.

As soon as a ship has reported, the shipping documents, if not already taken up by the last receiver, are cleared, and taken to the offices of the shipping company or their agents. There, in exchange for the freight cheque, the shipowners will issue a release for the goods which will enable the importer to obtain delivery from the ship.

In the event of the documents being delayed in transit and the ship arriving first, release can be obtained by providing the shipowners with a banker's guarantee in respect of the missing documents. When a parcel of grain is being distributed to several receivers, the release is lodged on board, and delivery is made against sub-delivery orders issued by the importer. Port dues, which at the present time are 4d. per ton in London and 1s. 9d. less 5 per cent in Liverpool, must be paid, and an entry for the goods must be cleared through the customs, before they will be allowed to leave the dock.

Most grain arriving in London is in bulk and this method of shipping is tending to increase with the improvement in the mechanical appliances for handling, but some bag grain continues to arrive, particularly from Australia and East India. Bag grain is discharged by crane in slings. In some cases, it is weighed on board, but more often it is followed in craft by the shipper's superintendent and weighed at its destination. In cases of small quantities of less than 100 tons the final settlement is usually made on the basis of average weights.

Australian wheat is sold "bags as wheat," and as these bags are of good quality they are, weight for weight, worth more than wheat. It follows that the difference in the cash value to the receiver between bag and bulk Australian varies inversely with the price of the wheat, if it is assumed that the value of the bags is fairly constant. Indian grain on the other hand is sold "net weight," and it is therefore necessary to ascertain the tare of the bags before the net weight can be calculated. In cases where grain has been sold on clean terms and has therefore to be analysed by the Corn Trade Association, the tare is recorded by the reducing agents who prepare the samples for analysis, or,

alternatively, it is fixed by agreement between the two superintendents.

The identity of different bulks in a ship's hold is preserved by means of separation cloths or mats, and the discharge of bulk grain is accomplished by pneumatic elevators which have largely replaced the older type of bucket elevator. The floating elevators come alongside the ship, and the intake pipes are let down into the vessel's hold. The grain is sucked up through tubes and passes into a steel receiver where the dust "cyclone" separates the dust from the air, the dust being released from the bottom of the "cyclone" to rejoin the grain before it enters the weighing machine. Spouts discharge the weighed grain into the barge, where it is sacked or not according to its destination. The most modern elevator in the Port of London is the "Thomas Wiles" (named after a well-known member of the Port of London board who for many years has represented grain interests). This is a one-tower type capable of discharging grain in bulk at the rate of 150 tons per hour unweighed, or 110 tons per hour weighed by two one-ton automatic scales in the weigh-house.

The speed at which grain can be discharged is affected by its condition. Soft, clammy grain moves more slowly; heated grain may stand up stiffly in the bulk and have to be broken down with a shovel to make it "run." Dusty grain, particularly some of the Persian deliveries, will suffocate the men in the hold if worked too fast, and hide the whole ship in a cloud of dust; in such cases a claim is usually made by the men for a dust-allowance or "dirt money." The men employed in discharging grain are known as "corn porters" and work in gangs under a ganger. They divide themselves into two definite squads both for work and pay, one for trimming and one for

tying. Trimmers work in the hold and trim the grain to the pipes with shovels. Tyers receive the grain at the chutes either loose or in sacks into craft.

A large proportion of the grain arriving in both London and Liverpool is taken directly alongside port mills and worked out by the miller's own staff and equipment. At Royal Victoria Dock, bulk cargoes from vessels small enough to get into the dock can be discharged direct into silos and thence delivered to rail trucks or road conveyance. The two largest port mills are located in this dock.

At the Millwall Dock, the "Central Granary" presents London's most modern public granary, although it cannot compete in efficiency with the granaries at Liverpool and Manchester. The equipment consists of four "towers" or "hoppers" with a capacity of 500 tons a day each, i.e. a total capacity of 2000 tons a day. Two 10-inch pipes from each tower trail almost mast high into the ship's hold. The grain is drawn into the vacuum chambers in the tower, where it passes through automatic scales (which can be set to weigh at the required number of pounds to the quarter) on to conveyer bands which carry it across the water space between ship and quay to the granary. There it meets the distributing bands, and is carried to the main elevators inside the granary and directed to its selected floor through housing pipes. The Central Granary can take 20,000 tons on eleven floors divided into five sections and served by 175 pipes. There are also silo facilities with a capacity of 4000 tons per day for delivery direct from quay-side to rail.

Grain not delivered to port mills is carried to its destination in various ways. It may be sacked up and delivered to rail or road conveyance. It may be towed in barge to a down-river miller, or up-river to Brentford

where it is transferred to "monkey boats" for its journey up the Grand Union Canal. It may be loaded into sailing barge and taken round the coast north to Ipswich or south to Dover, or it may be delivered into store on either bank of the river to await orders.

Practically all grain shipped to London is sold "full outturn" i.e. delivered weights, so that although the importer pays for the documents on the basis of shipping weights, an adjustment on the basis of the actual weight delivered is made in the final invoice. This necessitates the services of a superintendent, who acts on behalf of the shipper and whose duty it is to tally out the cargo, check the scales and see that they are functioning properly, as the actual weighing is done by the buyer or the port authority acting as his agent.

Furthermore, grain sold on sample or on guaranteed condition on arrival ("Rye Terms") has to be sampled at discharge. This sampling is done conjointly between the superintendent appointed by the shipper and the buyer's representatives, and takes place during discharge, one sample in every 250 quarters being drawn and sealed in the case of full cargoes and one sample in every 100 quarters in the case of parcels. Similar action is taken in respect of grain arriving out of condition, such grain being classed by the superintendents and buyers' representatives conjointly according to the degree of damage (A, B, or C), samples being sealed for the final quantities of each class.

The port authority at Liverpool is the Mersey Docks and Harbour Board which was formed in 1858, also by Act of Parliament. The functions of the board are, naturally, very similar to those of the Port of London Authority, but, as a grain port, Liverpool differs from London

inasmuch as its storage facilities, which are largely in independent hands, are more generally employed. On account of its futures market, the practice of carrying wheat in store is generally encouraged, the charges are low, and the facilities for conditioning grain (drying, cooling, separating, and gas treatment) are superior to London. The largest granaries, with very modern accommodation and handling equipment, are owned by the Liverpool Grain Storage and Transit Co. Ltd., and at Birkenhead and Ellesmere ships can go alongside the big port mills and work grain direct into their private silos. Including the Port Authority's warehouses, the total public grain storage accommodation at Birkenhead and Liverpool is estimated as 260,000 tons.

Further inland on the Manchester Ship Canal is the most recently-built granary in the country. It is the second of two 40,000-ton granaries owned and operated by the canal company, and its design and equipment are very modern. Everything is automatic and electric, and a most interesting description is contained in a pamphlet issued by the Manchester Ship Canal Co.

The total storage accommodation for grain at U.K. ports has been given by the President of the Board of Trade as 1,500,000 tons, which includes millers' silos. It is doubtful, however, whether more than two-thirds of this accommodation is really suitable for such a purpose. Should it be considered necessary for the security of this country to increase this storage capacity, additions to the millers' silos would probably prove the most economical method of storing additional quantities of grain, or, alternatively, an arrangement could be made with millers to hold increased stocks of flour.

PART II

DISTRIBUTION IN TIME AND UNCERTAINTY BEARING

INTRODUCTION

THE introduction of trading in futures was probably intended to facilitate distribution from market to market, but it did, in fact, provide two entirely new services. The aims of these services can be briefly described as equilibrium of supply by discounting the future, and security of price by insuring the future.

A certain amount of speculation is attracted to all organized futures markets by the nature of their contracts, clearing arrangements, and brokerage services, and it is generally acknowledged that an appreciable part of the cost of maintaining these markets is derived from the net losses of amateur speculation. Whatever the reason, it is undoubtedly a fact that the risk-bearing service of the Grain Trade is made available to the legitimate user at an almost negligible cost.

Generally speaking, the nature of these two services is very imperfectly understood, and there are many who continuously advocate their destruction. It is, therefore, as well to realize that, should these advocates at any time succeed, an additional cost in distribution must be incurred and be reflected in the price of the product to the detriment of the producer or consumer.

An informative resolution was adopted by the 6th Congress of the International Chamber of Commerce held at Washington 4th–9th May, 1931, and the second paragraph, quoted below, is of particular interest—

The Congress recognizes the fundamental services performed by futures markets in the organized distribution of certain agricultural and industrial products, namely in correlating the world demand and supply; in making a world price and keeping it uniform; in providing machinery for continuous trading by enabling a suitable price to be quoted for the commodity at any time; in minimizing and smoothing out price fluctuations; in discounting the impact on the market of forecasted supply and demand and in spreading over a long period the burden of distribution of short-period agricultural harvest; in providing security which justifies the grant of liberal credit facilities by bankers; in making available at all stages of production, distribution and manufacture, a valuable safeguard in the shape of insurance against fluctuations.

The economic service of risk-bearing relies on the maintenance of a continuous market for hedging purposes and is only possible in a futures market which will attract professional speculation. It is quite common for a futures market to be regarded as exclusively speculative, whereas, in reality, it provides the means by which many branches of the Trade avoid speculation. It follows, therefore, that if by penalizing the speculator the maintenance of this continuous market should become impossible, speculation would not be eliminated, but simply transferred to a different personnel, and a personnel which by choice would prefer to avoid it.

With regard to the last two points of the above resolution, hedging facilities undoubtedly permit the Trade to transfer an appreciable proportion of its financing business to banks and this reduces the amount of its own capital required in the business. It is a recognized fact that banks will afford much better facilities when taking as security commodities which can be hedged in a futures market, and this discrimination is, by itself, evidence that futures markets make for security within the Trade.

SECTION XIX

PRICE FORECASTING

LOOKING forward is always full of uncertainty, and the view is apt to depend on the temperament of the individual; the less-experienced being inclined to over-optimism on the outcome of any risk. The various businesses interested in the price of grain, from producer to consumer, are themselves full of problems; modern milling, for instance, is a highly-organized business with administrative and scientific problems of its own. By providing a forward market, the Trade relieves the miller of the additional problem of guessing what his grist will cost. He can run his business and sell his products on the knowledge which he is in a position to obtain from experience as a miller.

The forward or future price of grain is based on facts, estimates, and sentiment. The facts are trade statistics, the estimates are expert guesses on future production and consumption, and sentiment is the psychological factor which emphasizes the other two in one direction or the other. Each of these price-making factors requires close study, and, what is more important, expert interpretation. The international grain trade includes many hundreds of astute men who spend their lives forming opinions on the future price of each class of grain, and who are adjusting those opinions continuously in the light of every fresh piece of information that comes to hand. Their operations result in an equilibrium price which is the reflection of those opinions in the aggregate.

As soon as one begins to examine the basis on which

an intelligent opinion on the future price of a commodity is formed, [illegible] discovered that a complete study of the facts is beyond the capacity of normal man, and these are the only certain pieces of the puzzle. Estimates of production are provided periodically by crop experts and government statistical departments, and must be assessed by areas in their true perspective, each assessment being varied daily and sometimes hourly in accordance with the conditions reported and weather forecast, the estimates being revised both as to quantity and quality.

To arrive at a correct estimate of consumption presents even greater difficulty. Consumption is affected by some factors which operate differently in different areas; an increased purchasing power will raise the consumption of bread in the more primitive countries but lower it where the standard of living has risen above a certain point. The cost of available substitutes must be considered, and also changes of taste in the consuming public, and artificial interference or stimulus to consumption. The trade balances of consuming countries must be roughly estimated to arrive at their ability to buy from abroad. The fiscal policies of governments and restrictions on imports caused by the difficulties of obtaining the necessary exchange must be taken into account, and also the international political situation with its probable effect on the maintenance of grain reserves. The influences on consumption are undoubtedly as difficult to assess as those on production.

Then there is sentiment. Any strong sentiment distorts or exaggerates a price movement in its own direction. It can also delay a movement which is overdue. The distortion is always greater when a large body of ill-informed

speculators are in the market. The professional trader learns to recognize a change of sentiment immediately, and anticipates its effect on the price in accordance with his estimate of what is termed the technical position, or in other words whether he believes the market to be over-bought and top-heavy, or over-sold and therefore likely to resist a further decline. Sentiment in one market is often affected by movements in another; it is infectious, particularly when the same traders are involved in both markets, and commitments are heavy in relation to their financial resources.

One further price-making factor should be included, namely the ability both physical and financial of the owners of the exportable surplus to hold grain off the market. This factor is mentioned with reserve, because it is often a matter complicated by state policy, and its influence can only be temporary; any large surplus accumulated by a holding policy always reacts adversely on the market at a later date.

Enough has been said for the reader to appreciate some of the problems of price-forecasting. It is always possible to be right occasionally, but unless the speculator is right at least three out of five times, he cannot be successful. The successful speculator renders a true economic service by correct forecasting and is therefore entitled to his profit. The pure gambler as a class tends to confuse the issue, the odds are against him in the long run, and, as a fraternity, gamblers are benefactors to the market only in the added breadth which they give it, and the subsidy which they invariably leave behind when they quit. Occasionally a market suffers from manipulation or an attempted corner, though this is rare in an organized futures market owing to careful supervision. This type

of speculation is definitely injurious to the market, renders no economic service, and when it fails, as it generally does in the end, great care must be taken to safeguard innocent traders as far as possible from the repercussions.

SECTION XX

GRAIN FUTURES MARKETS

ALL forward business in grain, nowadays, is either done or based on the organized futures markets of the world. The earliest market of importance was established at Chicago in 1871, and for many years before the war the price of wheat at Chicago directly reflected and controlled the international price of wheat, although during 1910–13 Liverpool was starting to attract an important share of hedging business from international traders. Other markets were formed at Kansas for Hard Winter wheat and at Minneapolis for Spring wheat, but the importance of the American futures markets in the international sphere has naturally diminished since the U.S.A. has virtually ceased to be a regular exporter of grain. Canadian wheat is represented by the Winnipeg futures market established as recently as 1904, and a small market in London started in 1929. Argentina possesses two futures markets, one at Rosario and one at Buenos Aires, and her wheat in most seasons provides the main supply for the Liverpool futures market. Australia has no futures market, production is spread over an enormous area, and there is no point in the country where a sufficiently important quantity of wheat converges, exports being made from numerous ports and direct from each State. However, Australian wheat competes with Argentine wheat for the Liverpool market, which consequently attracts most of the Australian hedging business.

There are futures markets on the continent in Paris,[1]

[1] Some of these markets have been closed since this section was written as a result of the setting up of State monopolies.

Antwerp, Rotterdam, Genoa, Berlin, Hamburg, and Budapest, but all are relatively small, the largest, Rotterdam, only having a turnover of about 25 loads per day.

The more important feeding grains also have their own futures markets at certain centres. In Chicago, corn, rye, oats, and barley are dealt in on a futures contract; in Winnipeg rye, oats, barley, and linseed. The chief linseed market in the U.S.A. is at Duluth, where there is also a small market in Durum wheat. The following statement showing the estimated sales of wheat and corn on the Chicago futures market during 1935 with comparisons will show what a broad market it is.

	WHEAT	CORN
1935	7,020,000,000 bushels	2,239,000,000 bushels
1934	7,300,000,000 ,,	3,722,000,000 ,,
1933	9,151,000,000 ,,	3,251,000,000 ,,
1932	7,851,000,000 ,,	1,450,000,000 ,,

In the Argentine, Rosario includes a market in maize and linseed; and Buenos Aires in maize, oats, and linseed. There is also a futures market for Argentine maize in London, established as recently as 1933. A maize futures market was tried in Liverpool, but without success, probably on account of being overshadowed by the market in wheat futures, which is the largest in Europe. Comparative figures of the sales of wheat on the Liverpool futures market appear small against the Chicago turnover, but have grown steadily since its inception in 1883.

	WHEAT
1935	630,840,000 bushels
1934	699,840,000 ,,
1933	374,800,000 ,,
1932	340,400,000 ,,
1889	35,648,000 ,,

The organization of futures markets at these various centres has been undertaken, in the majority of cases, by associations of grain dealers, who have formed themselves into close corporations with duly elected executives to control the markets. Membership is not easily obtained, certain qualifications being necessary, and on the more important markets it is very expensive. Seats on the leading American exchanges in boom times are sold at very high figures, the seat being the property of the individual, and transferable. It must be considered as a rather speculative even though necessary investment. In Liverpool, membership is not transferable, the premium charged to new members going to swell the funds of the Association. In all markets, membership is subject to election by the executive, and reasonable care is taken to ensure that new members will be able to meet their engagements. Clearing houses[1] are set up to facilitate the closing out of completed transactions by intermediaries without waiting for the contracts to be implemented by delivery of actual grain, and also to eliminate the *del credere* risk by means of margin calls. Members make their own margin arrangements with non-members, but the clearing house regulations must be strictly obeyed by members. The system of margining contracts undoubtedly checks overtrading, and enables the association, for a trifling premium, to insure its members against loss from defaults.

Before a commodity can be considered suitable for futures trading, it must satisfy certain requirements. In the first place, it must lend itself to standardization and be divisible into units of easily ascertainable value. When more than one grade is tenderable against the contract,

[1] See Section VI.

the market becomes an option market, the option being, in all cases, with the seller; but it must be possible to assess the value of each unit tendered in relation to a grade or standard agreed as the basis of the market. A commodity may be arranged into several grades certified by government inspectors, each standard grade being tenderable against the futures contract at fixed price differentials over or under the basis contract grade represented in the contract price. Alternatively, as is the practice in Liverpool, each unit bulk may be sampled, the samples being examined by a grading committee to decide whether the quality is up to the standard set for that market, and, if so, at what price differential it may be tendered over or under contract price. This is also known as grading on to seller or off to buyer.

In the second place, the commodity should not be of too perishable a nature, nor one, such as fish, where the price is governed by very short-term market factors; and in order to justify the introduction of a futures market, a supply of the commodity should be available all the year round and the point or points of delivery named in the contract should be ones at which supply or demand can be and naturally is concentrated. Subject to the foregoing qualifications, the value of a futures market is relative to the importance to the community of the commodity concerned, and consequently the two largest markets in the world are those for wheat and cotton.

By means of futures markets, the price of wheat at any important trading centre is recorded from minute to minute, and the smallest rise or fall in its value is immediately known to all interested parties. The organization of a futures market enables dealings to take place openly, securely, and with the utmost rapidity at the market

price. Its technical efficiency is an example which stimulates efficiency in the services which surround it, and there is no comparable system in the commercial world which can accomplish business as expeditiously.

SECTION XXI

BROKERS IN COMMODITY FUTURES

THE organization of commodity futures markets throughout the U.S.A. soon led to the growth of large brokerage houses which combined their stock business with commodity trading. By acquiring membership of as many markets as possible, they were able to offer their clients the facility of doing business in a variety of markets on the same account. Those unable to obtain membership in all markets or doing insufficient business in certain commodities to justify a separate department, made arrangements with other houses to transact business for them, so that a client walking into the office of most brokerage houses in America could trade simultaneously in stocks or commodities on any of the important markets of the world. Branch offices have been established in Europe both for soliciting business for the American markets and executing American orders in the European markets, until there is, now, no properly organized futures market in which these brokers are unable to operate via the network which ingenuity and expediency have rapidly built up.

The offices of any one of the more important "wire-houses," as they are sometimes called, are a model of organization. Apart from the accounting and administrative departments, the main floor space is occupied by some form of board room. The walls in this room are lined with boards showing all the important markets of the world. At long tables in front of these boards sit operatives with elaborate and often very costly telephonic apparatus

connecting them by private wire with clients, market specialists and cable companies. Quotations received from the various markets are promptly marked on the board, and as the prices go up, clients are advised by the private lines, orders taken, entered in order books and dispatched to their relevant market. In a matter of minutes, executions are received back, entered and passed to clients. The whole organization is a masterpiece of accuracy combined with the utmost rapidity, the speed with which business is completed on the larger markets being uncanny. Orders are clocked out of the offices when sent by cable, and if they are for the Chicago market, an execution should be back in the London office of the client within ten minutes.

A big business of this nature entails considerable transactions in foreign currencies, since funds to be fully employed are constantly being transferred from one centre to another. All business being done on a margin basis, it is essential that the net market position of the firm at each centre should be quickly available, and funds remitted promptly. It is also necessary to work out each client's open position daily, and ensure the maintenance of his individual margin arrangements. Provided the organization and staff are efficient, one of the chief risks which these brokers run is from bad debts, and in excited and quickly moving markets this is a constant anxiety, because there is often a time lag between their payments into clearing houses on their clients' behalf and the receipt of margins from all their clients. In the U.S.A. original margin requirements are generally stiffer than in this country.

Most of these brokers provide their clients with a regular flow of market information by daily letters,

cables, and periodical reviews. A statistical service is usually available, and market specialists can always be personally consulted. Active clients are in constant touch and are immediately advised of any important news. For a general view of the international markets in stocks and commodities, it is difficult to imagine any type of organization providing more accurate and prompt facilities, and on that account, most of the leading financial interests of the world are numbered among their clients.

Besides the large American houses with their world-wide connexions, each market maintains its own ring specialists who execute the orders of professional traders and also do a great deal of the larger brokerage houses' business. A very small brokerage (£1 in Liverpool or 30s. in London) is charged solely for expert execution, and since the client is generally a clearing member, no liability for the business is carried by the ring trader beyond the day on which the business is done. These brokerages are variously termed "floor brokerages" or "street brokerages."

There are also, at all market centres, a number of small brokers who do business in a variety of markets but mostly for a local clientele. They are naturally inclined to attract business to those markets of which they enjoy the advantages of membership, but in recent years their activities have shown a decided tendency to broaden and to include a wider range of commodities. Many futures associations admit what are known as "subscriber brokers." These brokers are not clearing members, but are entitled to share a brokerage with a clearing member on payment to the association of an annual subscription of, say, £50. An undertaking is required to the effect that they will only make use of this privilege when acting

as broker, and also that they agree to be bound by the rules of the association. This facility is useful to the smaller firms.

Most of the larger houses on both sides of the Atlantic which specialize in grain or cotton futures are also brokers in the actual commodity, and to a great extent they rely for their bread and butter on producers' or consumers' business.

It may be appropriate to conclude this section with a very general statement as to the legal position of the broker in futures markets. In the first place, there is no international uniformity in the law concerning the application of the Gaming Act. There are still some countries where a losing client can, by pleading the Gaming Act, escape his liabilities on all futures contracts. There are other countries which recognize the legality of a contract for futures executed within their own borders, but do not recognize it outside their own country. Generally speaking, however, provided the transaction envisages the actual delivery of the commodity, and is in fact entered into by the broker on his client's behalf, any loss can be legally claimed by the broker; but, should the broker, acting as a "bucket-shop," virtually make a bet with his client on the future price of a commodity, the client would be entitled to claim the protection of the Gaming Act.

SECTION XXII

THE TECHNICALITIES OF TRADING IN FUTURES

BEFORE considering methods of trading in futures, it is necessary to understand the manner in which orders are executed and the correct way of giving effect to the intentions of the trader. For this purpose we will take as our example any active ring market, as ring markets are undoubtedly the most efficient and highly organized. Some of these markets actually have a ring, but others, and these include some of the largest, have what is known as a pit, which consists of steps formed into a circle one above the other, the lowest in the centre, and the dealers facing each other in tiers. The ring or pit is situated in a room well provided with telephones and every facility and service promoting rapid communication with the outside world. The dealers are ring specialists, mainly brokers or jobbers, the brokers often being represented by more than one man, some concentrating on limit orders while others will specialize in switching or straddling. Immediate communication with the ring is usually maintained by runners, but in some of the faster markets a system of "tick-tacking" is employed. The movements of other important markets of interest are flashed on boards visible to the dealers; for instance, the price of wheat at Winnipeg is known within the minute to dealers in the Chicago pit. A continuous stream of market information is supplied to the room, while around the pit, in close proximity to the market, information of a less public nature is passing from mouth to mouth. The characteristic animation of an active market automatically creates its own atmosphere,

the excitement of busy sessions being intense. Trading is probably carried on in several monthly positions, which in pit markets are distinguished by the step, the more distant positions being dealt in from the higher steps. A sale is indicated by a movement of the hand palm outwards, the number of figures shown implying the number of units sold, and a purchase by a movement towards the body palm inwards. In slower markets bids and offers are shouted across the ring, but in either case deals are checked at the close of the session and it is surprisingly seldom that any mistake or misunderstanding arises. With this picture before us, it is not difficult to appreciate that, by the time orders from distant parts arrive at the market, they must be condensed into very concise and accurate terms.

Orders can be given in a variety of different ways. An order can be given to buy or sell "at best" or "at the market"; such order would be executed immediately it arrived at the best price possible. An order can be given at a limit; this type of order must also be accompanied by instructions as to the period of time during which it is in force; for example, "good for ten minutes," "good all day," or "good till cancelled," i.e. "open." A limit order will be executed at the ruling price immediately it is received, provided such price is within the given limit, or it will be kept in hand until, if ever, the limit is reached within the specified time. Orders can be given for execution at a specified time with or without limit, e.g. "half an hour after the opening" or "at the close only."

Limits can also be given to buy or sell "on stop loss only"; such an order would be executed at best when, but not before, the limit had been reached or passed; nor does the term "stop loss" necessarily imply that the trader is already committed to the market, though in any

case this is no concern of the broker who actually executes the order. When stop loss limits are employed, with a view to closing a transaction as soon as a certain price has been registered by the market, it must be realized that, in a fast moving market, the broker may be unable to execute the order at the exact limit, his instructions being, in effect, to trade at best after the limit has been reached. It must also be realized that such limits are no cover between sessions; the opening price of the new session may be well past the stop loss limit, in which case the order will be executed at that price, or as near to it as possible.

Many of the orders which find their way to important markets are for the account of traders with little knowledge of the market machinery, and may have to be transmitted across the world. It is therefore essential that the broker accepting an order should translate his client's wishes accurately and briefly. For example, let us suppose that a country miller in Essex wishes to hedge a purchase of Manitoba wheat by a sale of futures in Winnipeg. In order further to complicate the situation, let us imagine that this miller is expecting to sell some flour which he has offered to a baker for reply at 4.30 p.m., but he knows that, if the market at Winnipeg is down at 4.30 p.m., he will not make this sale and will consequently be left with the wheat on his hands. He explains the position to his broker and instructs him to sell 10,000 bushels of wheat in Winnipeg if the market is down at 4.30 p.m. The market opens at 3.30 p.m. our time, and the position selected, July, closed on the previous night

order will be executed at that precise moment if the price of July wheat stands at $81\frac{3}{8}$ or under, otherwise it is automatically cancelled. If, for any reason, we want the order to remain in force after that time, we must say so, viz: "Good after first hour stop sell 10,000 July $81\frac{3}{8}$." It often happens that a client will wish to do some complicated operation without knowing exactly how to carry it out. It is the duty of his broker to interpret those wishes to the market in lucid and unambiguous instructions.

Orders can be given for a straddle[1] between two months in the same market, viz.: "Open buy 20,000 July sell 20,000 October switch 2 cents difference." The most difficult orders to execute are straddle orders between different markets, viz.: "Day buy 10,000 May corn Chicago sell 10,000 May Oats Winnipeg $20\frac{1}{2}$ cents difference." These orders require the technique of specialists, as an inexperienced dealer can very easily get caught on a sudden fluctuation in one of the markets. Such straddles are usually done from the smaller market into the larger, it being assumed that the difficulty of trading at once and close to the quoted price will be less in the larger market. When the prices are close together, the order must clearly state whether the sale or purchase should be made at the higher price, the words "premium over" or "discount under" being employed or else the premium leg of the

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order will be executed at that precise moment if the price of July wheat stands at $81\frac{3}{8}$ or under, otherwise it is automatically cancelled. If, for any reason, we want the order to remain in force after that time, we must say so, viz: "Good after first hour stop sell 10,000 July $81\frac{3}{8}$." It often happens that a client will wish to do some complicated operation without knowing exactly how to carry it out. It is the duty of his broker to interpret those wishes to the market in lucid and unambiguous instructions.

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[1] The terms "spread," "straddle" and "switch" are very loosely used in the Trade, and it is consequently dangerous to attempt any explicit definitions. It can be said, however, that the term "spread" should be used in reference to a difference in the prices of two positions or two commodities, viz. the spread between x and y is z. The term "straddle" implies the action of selling x and buying y at the spread of z, both trades being new business. "Switching," on the other hand, is applied to the operation of moving a commitment from x to y.

SECTION XXIII

HEDGING

AN authoritative definition of hedging in the U.S.A. is contained in a report on Commodity Exchange Trading by a special committee of the U.S.A. Chamber of Commerce and reads as follows—

> Hedging is a method employed by many dealers in cash commodities to protect themselves against losses which might result from price fluctuations. It is effected by making with cash purchases and sales practically simultaneous futures transactions on the opposite side of the market, a futures purchase offsetting a cash sale or a futures sale offsetting a cash purchase. The dealer, the manufacturer, merchant or other agent who uses the hedge seeks to protect a normal profit by avoiding the risk of losses attendant with price fluctuations, and, at the same time, foregoing the possibility of making a speculative gain. . . .

This definition is clear enough for the hedging which takes place in the U.S.A. and Canada, but is not sufficiently comprehensive for the international market, where the place of cash grain is generally taken by forward purchases of grain on C.I.F. contracts. These forward contracts are customarily termed contracts in "actual" grain as opposed to futures proper, and it is these contracts in "actual" which are hedged by counterbalancing transactions in organized futures markets.

As a term, hedging is apt to be interpreted as implying indecision and a desire to abstain from being committed. In practice, however, it requires as much deliberation as any other business proposition.

Considerable market experience is necessary in selecting

correct hedges for each occasion, and a market operator must have a very clear idea of exactly what he is attempting before entering into a hedging transaction. The science of hedging grain in the international market is not nearly as simple as hedging grain in the domestic markets of the U.S.A. or Canada. There are alternative hedges to be considered, and, for this reason, expert knowledge of all possible futures markets, their terms and grades, must be available so that careful consideration can be given to eventualities which may affect the proposed hedge in its relation to the contract against which it is being employed. The objectives of hedging naturally differ according to the class of business concerned, so it will be wise to study this subject from the viewpoint of each department of the Trade, working backwards from consumer to shipper, and as the principles are similar in the case of those other grains where facilities for hedging exist, this study will be confined to a consideration of wheat only.

(*a*) **Hedging by millers**

It is a common mistake to think that hedging can only apply to sales of futures against purchases of actual, whereas it can equally well apply to any forward purchase made, without intention to take delivery, as a cover against the sale of "actual" or its product flour. When a miller is asked to quote or sell flour on contract for distant delivery dates, the calculation of cost must be based on the forward price of wheat as indicated by the futures markets; and since the required grist will probably be a mixture of Hard and Soft wheats, it is necessary to consider futures markets which represent each class of wheat. For instance, a U.K. miller requiring forward cover for 10,000 quarters of wheat, might divide his purchases

equally between Liverpool and Winnipeg, or he might substitute London Manitoba futures for Winnipeg. If the premium on Canadian wheat was excessive, he might decide to put 75 per cent of his purchases in Liverpool, but if he puts all his purchases into one market, it follows that he is not correctly covering a mixture. At a later date, when he is able to buy the exact quantities and grades of wheat which are required to complete his flour contract, he will make the exchange and sell his futures. If his hedge purchases have been correctly made, any difference of profit or loss on his transactions in futures should be balanced by an increase or decrease in the cost of the actual wheat over or under his original estimate on which he sold his flour.

Millers also use futures markets for hedging "actual" wheat purchases. In this case, sales are made on futures markets to cover stocks of wheat and forward purchases which have been made to ensure the uninterrupted running of the mill at a time when there are no balancing sales of flour on the books. This method of hedging is often employed by large millers to whom continuous and evenly spaced arrivals of wheat are an economic necessity, cargoes being sometimes bought from shippers at an agreed differential over futures. The futures are then bought in by the miller as and when sales of flour are made.

(*b*) **Hedging by merchants**

Hedges are often used to minimize losses on a market position, when the initial view has proved to be wrong or premature. Such hedges may be lifted should confidence in the original view be re-established, but if they were put on at a time when a loss was showing on the original transaction, it must be appreciated that a loss has been

hedged and consequently a simultaneous closing of both transactions is exceedingly unlikely to result in a profit.

A more general use of hedges by merchants is the simultaneous hedging of actual wheat purchases. Naturally, the safest hedges in this class of business are those against which the actual wheat can be delivered in the event of no opportunity appearing of undoing the transaction profitably. It may be helpful here to follow out one typical example.

A cargo of Western Australian wheat in bulk is offered for January shipment at, say, 30s. per quarter C.I.F. with various optional ports of delivery including Birkenhead or Liverpool. The Liverpool futures market opens steady with March wheat at 6s. 3d. per cental, which equals 30s. per quarter of 480 lb. delivered in store. The merchant is advised on the quality of the wheat, which he estimates

AUSTRALIAN WHEAT IN BULK CARGO TERMS

	pence per quarter
Dock dues 1s. 9d. less 5% less 6d. per ton	2·991
Receiving housing and delivering 38·5d. less 4% per ton	7·92
One week's rent 3·25d. per ton	0·696
Superintendence 3d. per ton	0·642
Fire insurance, say,	0·025
Bank interest 10 days @ 4% on 31s.	0·40
Bank commission 1/16th% on 31s.	0·232
	1/0·906
Less documentary rebate 40 days @ 1% on 24s. 6d.	0·322
	1/0·584

Note. If vessel discharges at Liverpool there is no additional allowance of 6d. per ton on dock dues, but receiving and housing charges are 6d. per ton less than Birkenhead, so the total is the same in both cases.

will be graded by the Liverpool grading committee at 2½d. per cental to seller, which is equivalent to 1s. per quarter of 480 lb. The cost of laying this cargo down in store, Birkenhead or Liverpool, is approximately 1s. per quarter made up as shown in the Table on p. 111.

From this information the merchant can estimate that his allowance for grade should approximately cover the cost of delivery. If a cargo of 7500 tons is taken as our example, its equivalent will be 168,000 centals or 35,000 quarters, which for market purposes is 35 loads. He now takes the firm offer of the cargo from the shipper and starts selling March Liverpool at any price over 6s. 3d. per cental. In order to hedge this cargo completely he must sell 35 loads at an average price of over 6s. 3d. per cental. The firm offer may expire at a time limit, before the 35 loads have been sold, and the shipper may not be willing to extend the offer. The merchant will then be forced to decide whether he shall attempt to take in his Liverpool sales at a profit, or accept the cargo in the hope that he will be able to complete the sale of 35 loads of March at over 6s. 3d. per cental. It may be assumed for argument's sake that he has succeeded in selling 35 loads of March Liverpool at an average price of 6s. 3⅛d. His position is now as follows: Long of a cargo of 7500 tons Western Australian wheat in bulk with options (one of which is Birkenhead). Short of 35 loads or 168,000 centals of wheat for delivery, in store Birkenhead or Liverpool, during March. The average voyage from Australia will bring a cargo shipped in January into Liverpool just before or during March, but there is always a risk that it will arrive a week before the first business day in March, and thus add a further charge for rent and interest to the costs of delivery.

From the day these two transactions are made, say the middle of November, our merchant is in a position to offer this cargo for sale based on the current price of March futures in Liverpool. He will make the offer C.I.F. at a reasonable margin over Liverpool, the margin varying in accordance with his estimate of the breadth of the Liverpool market on the day, as the purchase of 35 loads on a narrow market might cause an appreciable rise in the price. Of course, since the terms of the Liverpool futures market are "delivered," warehouse accommodation must be secured if it is intended to tender the wheat. At times, when spot stocks are very heavy, cheap accommodation may be full and a further addition to the costs of delivery will be incurred by having to make use of outside warehouses. The occasion has arisen when no accommodation was available, and cargoes arrived in the river and had to remain on demurrage unable to discharge, but this is exceptional.

A similar operation can also quite often be carried out with Argentine wheat; and, on the rare occasions when Liverpool is up to the price of Canadian wheat, a Manitoba cargo can be hedged in the same manner. Any variation in the costs of delivering or difference in the grading allowance will, naturally, necessitate a commensurate adjustment in the price at which the hedges must be sold.

Hedging of this kind will, at first glance, appear a very simple and safe way of making money in comparison with some of the other classes of business carried on by the Trade, but, in practice, considerable experience is essential if the various pitfalls are to be avoided, and the amount of this business which can be handled by any one firm of merchants must always be limited by finance and the

del credere risk on the C.I.F. purchase. All important futures markets are conducted on a strict day-to-day margin basis, so that if the merchant is, altogether, short of 100 loads of, say, Liverpool futures and the market rises 5d. per cental, he will be required to find £2000 in original margins at £20 per load and £10,000 in current margins, a total of £12,000, while on the other hand he will receive no compensation from any advance in the value of his C.I.F. purchase until the cargo has arrived at its destination and been paid for. As for the *del credere* risk, this is exceedingly difficult to estimate. Most failures in the Grain Trade are unexpected, and should the seller of the cargo fail to complete his contract, the merchant is left with one side of his transaction completely in the air, and he may have to pay a considerably higher price for a cargo to replace. An advance of 5s. per quarter would cost him £8750 on 35,000 quarters.

Hedging does not by any means always take place in a market on which the actual wheat can be delivered. Most of the C.I.F. Canadian wheat, for instance, is hedged on Winnipeg, a market which the wheat is coming from, not going to. It often happens, therefore, that a small excess of Manitoba wheat to any port will cause the C.I.F. price to that port to fall independently of Winnipeg, making the hedge inadequate. It is obviously safer, whenever possible, to place hedges in a market to which the actual wheat is headed, so that any drop in its value on account of local conditions will also be reflected in the hedge.

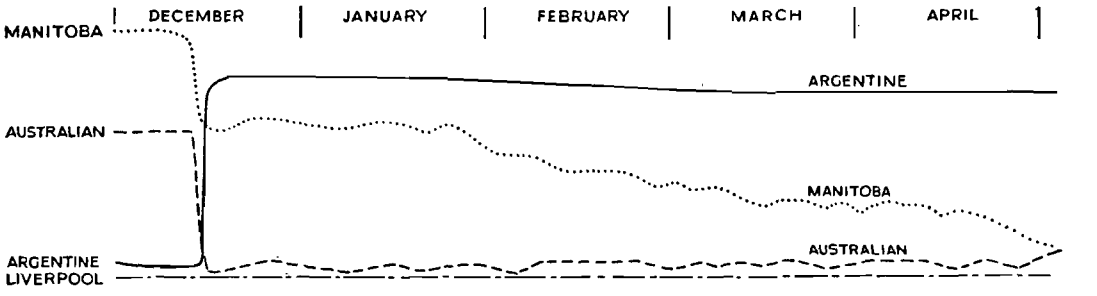
It must not be thought for a minute that, once both sides of a hedging transaction have been completed, the possibilities of further profit are limited to the differential on its being lifted. The operator may switch the hedge

from one futures market to another, or he may exchange his actual wheat from one grade to another or from one type to another, provided always that the new grade or type conforms equally or better to the basis of the hedging market. The switching of a hedge is usually dependent on the opinion of the operator as to which is the better market for the purpose, but the exchange of actual is quite often a simple matter of calculation.

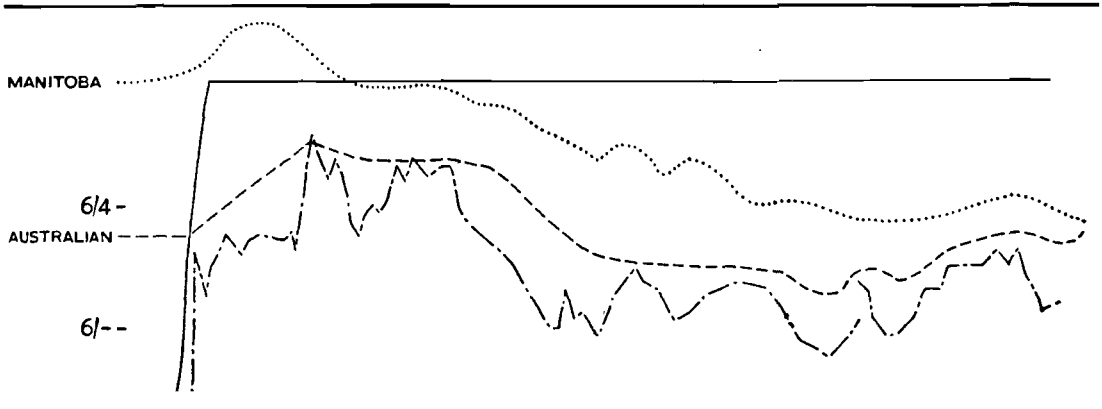
One of the best opportunities for a merchant to make sound money on exchanging actual against a fixed hedge occurred between December, 1935 and April, 1936, and it is worth following out as an example.

In the early part of December, 1935, it was possible to purchase Argentine wheat for shipment in February-March or March/April, 1936, and hedge it on March or May Liverpool with little, if any, loss. On the 13th December, 1935, Argentine wheat was lifted to 10 pesos by government decree and to all intents ceased to be offered for export to Europe. The Liverpool market rose from the former level of Argentine wheat to the new level of Australian wheat. The Argentine purchase could now be sold back to the Argentine and replaced with Australian at an advantage of several shillings a quarter without in any way impairing the precision of the hedge. By April, Canadian wheat, which is also tenderable on the Liverpool market, came almost into line with the Australian, and the opportunity of making a second favourable exchange against the same hedge came into sight. The two graphs on page 116 illustrate the relationship of the three values to Liverpool, Graph I assuming a constant value for Liverpool and Graph II showing the actual movements of markets during the period. The values taken are approximate delivered values.

GRAPH I



GRAPH II



(*c*) **Hedging by Shippers**

The exchanges which have been dealt with above are by no means the monopoly of merchants. Shippers, particularly the smaller firms, use hedges in very much the same way as a merchant, and they have the additional advantage of being able to make use of the premium market in the country of export. For instance, if a shipper has contracted for a forward shipment of No. 3 Manitobas and hedged them on the London Manitoba futures market, where the differentials for tendering are (at seller's option) No. 1 Manitoba 2s. over, No. 2 1s. over, No. 3 basis; and, on account of a change in the premiums on the other side, he is able, before the wheat is shipped, to exchange his threes for twos at less than 1s. or for ones at less than 2s., he can obviously pocket the advantage without affecting the efficiency of his original transaction.

Hedges are employed in a rather broader manner by those shipping houses with large connexions in exporting countries who find themselves forced into the position of taking delivery of a much larger quantity of wheat in the exporting country than they can find a market for in importing countries. This more particularly applies to Australian and Argentine shippers immediately after a large crop has been harvested. The farmers want cash, and in many cases these shipping houses are expected to provide it whether an immediate sale for export is possible or not. They are, consequently, forced to run a book, making sales where and when possible, and, in the meantime, keeping out sufficient hedges on organized futures markets more or less to balance their position. It is for these operations that broad hedging markets free from political interference are of such importance.

If the wheat market is international, or, rather, if any

international wheat market is to exist, it is only natural that a large supply of wheat in one country should tend to lower the price in another, and this must be allowed to happen although it may seem hard on the other country. After all, the converse is equally true as regards a failure in any country. If, on the other hand, this natural market reaction is prevented by state interference, hedging in what were considered international markets becomes a gamble on politics, and is consequently reduced or transferred to other markets. In so far as it is reduced, opportunities for carrying the surplus of good harvests are also reduced and further state action will become necessary to take the place of the Grain Trade whose machinery has been interfered with, and a vicious circle is set up. Restrictions and artificialities have been rampant in most markets during the past ten years, but there are signs that, now the world's surplus of grain has been reduced to reasonable proportions, the politicians may take the opportunity to retire from active interference and allow nature more or less to take its course. If this happens, and markets are left to find their own levels, the hedging of large surpluses will undoubtedly exert its natural influence and cause temporarily low prices, but trouble will always be discounted ahead, so that it will never prove so bad in fact as in forecast.

SECTION XXIV

THE SCIENCE OF SPECULATION

ONE often hears the beginner remark that, since the market can only move up or down, a purchase or sale must present an even chance of showing a profit. In practice, this is a fallacy which a very little experience will expose. There are various contingencies affecting the odds from a purely theoretical point of view, and there is the ever-present human factor which enters into every speculative transaction. The first question is one of degree. How much profit are you proposing to make, and how much loss are you prepared to stand? For instance, suppose you are a member of the London Market and therefore able to trade without paying a brokerage. If you accept 1½d. per quarter profit and run 1s. per quarter loss, it follows that, in order to show a profit over a period of trading, you must be right nine times out of ten, i..e nine profits of 1½d. equal 1s. 1½d. against one loss of 1s., therefore net gain 1½d. Of course, the market may go against you temporarily to the extent of less than 1s., ultimately returning to show the 1½d. profit, but it still remains true that, unless 1½d. profit is obtainable before 1s. loss is shown on nine occasions out of ten, this method must eventually prove unprofitable. This one example is sufficient to suggest that entirely unmethodical speculation must sooner or later come to grief. It is definitely unsound to cut profits and run losses.

Straightforward speculation can be divided into three fairly well-defined categories. The "punter" usually adopts the first method of buying for a rise or selling

for a fall. To obtain any success with this method, it is necessary, as we have already shown, to have in mind some definite fluctuation, and if the profit aimed at is £50, then an approximately similar loss must be accepted. Should the required profit materialize more quickly than expected, it would not be unreasonable to run the gamble further, provided the deal is closed directly the market turns.

The second method is known as "averaging." In this case the speculator begins business with a part only of his trading capacity. If he is a four-unit man, he will start by buying or selling, say, one unit in a distant month with the intention of acquiring a four-unit interest at a satisfactory average price. When adopting this method it is generally advisable to resist the temptation of trading again too near the initial price. If the full interest has been acquired, the operation can be undone also on the averaging system, the first unit being quitted once the market has passed the average price of the four units. If the operator does not look for any important change in the price level, he may decide to job either side of his average price.

The third method is called "pyramidding," and consists of building up a position in the market on profits only. An initial transaction is followed by others at carefully spaced intervals of apparent profit, the pyramid being allowed to grow so long as the market continues to move in a favourable direction. A deal of this nature must always be accompanied with definite instructions to liquidate the entire commitment on stop-loss immediately the market shows signs of turning, the stop-loss limits being moved daily, if necessary, closely in the wake of the market.

All these three methods can be used profitably in their own types of market. The most difficult part of speculating in commodities is to decide what type of market is to be anticipated in the immediate future.

Professional speculation can also be divided into three categories: jobbing and scalping; spreading and straddling; and what is called "taking a view."

Professional jobbing on a futures market involves taking advantage of orders coming into the market to sell on small rises and buy on small breaks, and being prepared to make a price at all times so that brokers can trade for their clients. Scalping, which is combined with jobbing, is a form of opportunism necessitating the closest touch with markets. It can be employed over a number of markets or confined to one market. For instance, a scalper, who watches a number of markets, may attempt to anticipate a fluctuation in one from his study of the others. Possibly he may obtain some advance information, quickly select the market which in his opinion should be most affected, and operate with the intention of covering at a small profit as soon as his news, becoming generally known, has caused the anticipated movement. A scalp may also be taken just as a view on the day's movement, the scalper backing his opinion that, in relation to all the known factors, the market has opened too high or too low and will adjust itself later in the session.

Spreading is of two kinds. Short-view spreading is part of the jobber's work in accommodating the market. He must always be prepared to sell one position and buy another, provided he can reasonably expect to make a minimum difference by undoing the spread later in the session. Spreading is also an important part of the merchant's business. Price differences between positions

in the same market are a reflection of the actual and prospective statistical position at that particular centre, and as such are the intimate concern of the local merchants. In delivered markets where stocks are heavy, the spot price normally stands at a discount in relation to the forward price, because it is known that, stocks being in excess of immediate consumptive requirements, someone will have to pay the cost of carrying the surplus until the consumer is ready for it. The actual cost of storage, insurance and financing can be calculated, the condition of the grain can be ascertained by sampling, and a definite carrying charge from spot to the next future position can be reckoned. The same calculation will apply between more distant positions, always assuming that the grain is received in good condition for carrying. In this connexion, a merchant is informed on the grain arriving and in store, and is therefore in a position to make a fair guess as to the chances of charges for turning and conditioning being incurred. It therefore becomes mainly a banking proposition for a merchant to buy the near position and sell the distant position at a difference equal to or more than the actual cost of carrying the grain.

At times, it will be profitable to do this spread at less than a carrying charge, particularly if a reduction of spot stocks, either from reduced arrivals or increased spot demand, is anticipated. When this spread is done at less than a carrying charge, it ceases to be a banking proposition and becomes a professional speculation with the risk limited to the carrying difference.

Sometimes, the forward positions stand at a discount because spot stocks are small or well held and increased quantities are expected to be available in the future, possibly from a new crop. At such times, the differences

are entirely a matter of current market opinion, and spreading is based on a forecast of what the statistical position will be, and an equilibrium difference is reached as a result of market specialists backing their opinions on this eventuality, combined with the natural strain of the speculative positions open in each trading month.

Straddling is a term usually confined to purchases and sales in different markets. Straddling between markets which deal in and reflect the price of the same kind of grain, by which is meant not only wheat or maize, but wheat or maize of the same species, can be classed more or less in the category of arbitrage business; but straddling between markets representing different grains, e.g. rye in Chicago and oats in Winnipeg, or even different species of the same grain, e.g. wheat in Chicago and wheat in Winnipeg, is definitely of a more speculative character. For instance, a purchase of Winnipeg and a sale of London Manitoba futures or even Liverpool futures, on the rare occasions when Liverpool is up to the price of Manitobas, can only lose a limited amount of money, either from a drop in the exchange value of sterling, an increase in the cost of freights or premiums, or some technical contingency. Consequently, so long as the sale is made at a price and in a position corresponding to the cost of shipping and tendering of Canadian wheat, such a transaction can be classed as arbitrage business.

Different kinds of wheat, however, must be considered as entirely different markets. A purchase of Liverpool futures, for example, straddled with a sale of Chicago futures can lose a great deal of money, because there may be a scarcity of wheat in America simultaneously with a glut of Argentine wheat in Liverpool. In all proposed straddles care must be taken to study the qualities and

species of grain tenderable on the two markets. Should one leg of a straddle involve the purchase of Liverpool, it must be remembered that Argentine, Australian, and Canadian wheats are all tenderable on this market, and consequently Liverpool is, generally speaking, a safer sale than purchase in most straddles, though of course there are occasions when Liverpool is over-depressed in relation to other markets.

Straddling is essentially the business of specialists, and, as such, should not be embarked on without a most careful preliminary investigation. If, to the more or less casual eye, one market appears too dear in relation to another, there is probably a very good reason for the apparent discrepancy, and the novice is ill-advised if he tries to put the markets right. The markets are more likely to be right than he is.

The third form of professional speculation, "taking a view," should only be employed when careful study of market factors has convinced the operator that an important change in the price level is imminent or overdue. Obviously, this cannot occur very often, and money is constantly being lost by taking views without the justification of careful preliminary study. A position, commensurate with the financial resources of the operator, is built up and possibly pyramidded when the view begins to receive confirmation by the action of the market. The human element must not be allowed into the calculation except in discounting the sentiment of the market. Real conviction can only rest on a foundation of market factors, although constant study and general market experience do produce in some individuals a perfectly sound "hunch" which is only subconsciously based on such data.

To conclude this section, a word of warning on two small

matters may not be out of place. If, when operating with a large open book, you should strike a patch when everything you do goes wrong, put on one side all genuine spreads or straddles in which you believe, and close out everything else. Then rest for a day or two in order to acquire a new perspective. There is nothing more fatal than floundering when out of step with the market. Finally, beware of success. Successful speculation in grain is not easy.

SECTION XXV

THE MARKET ANALYSED

THERE are two aspects of a market which are particularly worth studying from an analytical point of view: its movements and the forces which cause movement.

In a continuous market the equilibrium price is rarely stationary for more than a few minutes, and a graph plotted from each consecutive price will indicate the movements of the market over a given period of time. It is of the utmost importance that these curves should be considered strictly in relation to time, because the significance of their direction will vary in accordance with the period of time over which they are taken.

These movements can be broadly divided into four classes—

(*a*) Long-period trends.
(*b*) Short-period trends.
(*c*) Day-to-day fluctuations.
(*d*) Oscillations during the session.

Long-period trends reflect any decided change in the general price level, and also any more or less permanent change in the circumstances affecting that particular grain. It does not follow, however, that all markets dealing in that grain will conform to a trend. Local conditions in special geographical or fiscal areas may exert a predominant influence. For instance, the international price of wheat may fall simultaneously with a rise in the American markets; the spread widening until international wheat enters America over the tariff wall. Again, there

may be seasonal trends for different wheats. Canadian wheat may be relatively cheap in the autumn and Argentine or Australian relatively cheap in the spring; while Liverpool futures, being affected by each in turn, may remain at a more or less constant level throughout.

Short-period trends can result from a variety of causes, both natural and political, and a short-period trend which occurs for no apparent reason can usually be accounted for by the automatic reaction which follows the over-discounting of known factors.

If it is appreciated that short-period trends may only be relative, the necessity for their study in conjunction with any possible long-period trend becomes obvious. It often happens that correct anticipation of a relative trend in one market proves ineffectual on account of failure to recognize a general trend, whereas, had this latter trend also been appreciated, a profitable straddle could have been made.

The initial cause of a change in price level may be some definite circumstance which will be reflected immediately in the first market to be advised, or it may develop slowly from some cause such as a gradual deterioration of a crop, the movement spreading from one market to another. It is generally noticed that the movement is led by one market (though this leadership is by no means confined to the largest markets), and will shift to another after a time, the markets pushing and pulling in the manner of the trucks of a goods train being shunted.

It is much easier to recognize a short-period trend than a long-period trend, because it usually originates from some definite market factor, and for this reason alone attracts a class of partially-informed traders. It is harder to anticipate a long-period trend because the issue is

continually being confused by short-term factors which might, but never do, entirely reverse the trend. A study of trends is essential to speculation, which is the main contributing force both to elasticity and price stability over a period.

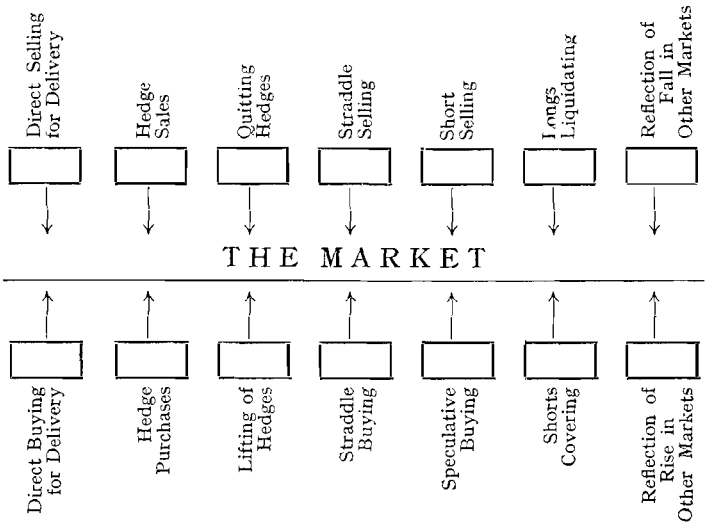
Day-to-day fluctuations and small movements during the session are mainly of interest to the professional ring trader and possess little or no economic significance. Their interest lies in the information which they can provide to an astute observer.

The study of price movements naturally leads to the second question for investigation, namely, what are the forces exerted on the market which cause movement and how can they be classified?

If jobbing and scalping operations are eliminated, buyers and sellers can be evenly divided in accordance with the type of transaction, and the only additional influence which need be included is the reflection of other markets as interpreted and rated by the ring traders, particularly the jobbers. The diagram given on page 129 indicates all the more important influences bearing on the market from time to time.

The first and most interesting observation which immediately arises from a glance at the diagram is that for every potential seller there is a potential buyer. In fact, the diagram can by itself dispose of many of the uninformed criticisms which are levelled at futures markets. The only type of business which is likely unduly to raise or lower the market over reasonable periods is buying or selling for delivery, because every other type of transaction, which may temporarily affect the market, is, sooner or later, undone by a transaction of an equal size reacting in the opposite direction.

To study any particular market movement it is necessary first to discover which type of operation is mainly responsible. An intelligent and well-informed observer can obtain valuable information as to what is going on in a market. For example, if, immediately after the sale of an Australian cargo, Liverpool futures are observed to



rise, it may be reasonably assumed that, failing some better explanation, the rise has been caused by the lifting of hedges. A discreet inquiry as to the source of the buying will probably confirm the suspicion. In which case the rise may be expected to stop as soon as the operation is completed.

A market is full of unknown factors, but intelligent study can reduce the number of "unknowns" very considerably. A newcomer can be right in a market without having the slightest idea of what is taking place under his

nose. After a time, however, observation will be rewarded with information, but it is obviously necessary that the operations possible on a market should be understood before they can be recognized, and for this reason, if for no other, the stresses and strains which bear on the market should be analysed.

There is one other minor influence which may produce a buyer or seller at some special time, that is, the covering or exploitation of a "privilege." Privileges are usually exercisable at a definite time, and, if they are exercised, a transaction has, to all intents and purposes, taken place although no deal has been made in the open market. However the subject of privileges requires separate treatment and is dealt with in the following section.

SECTION XXVI

PRIVILEGES—PUTS, CALLS, AND DOUBLE OPTIONS

THE primary function of privileges is to act as a temporary insurance (usually overnight) against undue fluctuation in price. Their use in commodity markets is confined to futures, the procedure varying slightly in different markets. The principle, however, is more or less the same everywhere, so a careful study of the method adopted on the Liverpool wheat futures market will be sufficient for a general appreciation of the subject.

The majority of privileges are arranged for short periods, although, theoretically, there is no limit to the period which may be covered. In Liverpool, there is a day-to-day privilege market immediately after the close of each session. "Puts," "calls," and "doubles" are arranged, based on the official closing prices, and are exercisable at 12.30 p.m. on the following market day, unless that day is a Saturday, when notice must be given at noon.

A privilege can be described as a right to claim a purchase or a sale at an agreed price, and this right is sold to the highest bidder. (A "call" is the right to claim a purchase, and a "put" the right to claim a sale.) Bargaining takes place, both on the amount payable for this right, (*a*) if not exercised, (*b*) if exercised, and on the difference over or under the closing price at which this optional contract may be executed. For example, a call of July may be offered for £1 if not exercised, £4 if exercised at ¼d. per cental over the previous closing price. Such an offer may have to be compared with one of 30s. if not exercised, £5 if exercised at ⅛d. per cental over the close. The buyer has

to decide whether he would rather pay a premium of £1 for cover £9 over the close or 30s. for cover £7 10s. over the close. The £9 is made up of £4 option money and £5, the difference of ¼d. per cental on a load; the £7 10s. is made up of £5 option money and £2 10s., the difference of ⅛d. per cental on a load. These two offers would be made on the market in the following terms: "Sell a call, one or four, a quarter July," or "Sell a call, thirty or five, an eighth July." A buyer might counter with: "Give one or three a quarter," or "Give two or five unchanged."

Naturally, privileges are cheap in quiet markets when the risk of a wide movement on the following day is small, and dear in excited markets, since the seller is providing insurance against market fluctuations. The term "double option" is used to describe the combination of both a put and call, the difference under or over the closing price being, generally, the same. For instance, a jobber may bid for a double in the following terms: "Give two or five three-eighths one double March." He has then incurred a total liability of £4 if he exercises neither the put nor the call, and in the event of his exercising one, his option money liability is £7, £2 for the privilege unexercised and £5 for the one exercised; for obvious reasons it could never occur that he would wish to exercise both.

Trading in privileges is useful to the professional in a number of ways, and although certain traders specialize in the business, most of them have occasion to make use of this facility from time to time. The buyer uses a privilege either to safeguard an open market position or to job against on the following day. It is only natural that, with a "put" in his pocket, a jobber will trade on the long tack with much greater confidence, since he knows the limit

of his loss should he find himself landed with a load at 12.30 p.m. Alternatively, if he has bought a "call" at £1 or £5 a ¼d. over the closing price of 6s. 1½d., he can job short at 6s. 2d. without running any market risk at all. The seller of privileges either makes a practice of taking option money regularly, reckoning to make sufficient money on the uncalled privileges to compensate him for the occasional losses he incurs when caught, or he only sells privileges against his open book, i.e. he would sell "calls" with a long book or "puts" with a short book. Privileges for a week or a month are sometimes arranged, the cost being proportionately heavier, but longer periods are exceptional. In all long periods, an attractive cash sum for the privilege will often assist in the negotiation of a reasonable difference.

Dealing in privileges is not officially recognized by the Liverpool Corn Trade Association, which takes no responsibility for their fulfilment. The system is, however, recognized on the Winnipeg Grain Exchange, where the price charged for a day-to-day privilege is fixed at $1 per thousand bushels, the difference over or under the closing price being the only matter open to negotiation. The time during which business in privileges can take place is strictly limited to the half an hour immediately after the close of each session.

The privilege market does provide a subsidiary risk-bearing service, which is very useful to the grain trader. Its possibilities as regards non-member traders, however, are distinctly limited.

APPENDIX I

THE INTERNATIONAL PROBLEM OF 1936

IN the days of Moses there was no international problem. Good harvests meant prosperity. The general standard of living was so low that an abundance of food satisfied and contented the people. Even now, there are large sectors of the globe inhabited by millions of primitive people where these principles of economy still apply, but in the civilized world simple economy has disappeared and the complications of the modern social and economic systems have so multiplied that many primitive truths have become entirely reversed.

The clearest evidence of the failure of the modern economic system is the admission that the great post-war depression occurred during, and partly in consequence of, an apparent over-supply of all the essentials of life.

The tragedy of modern ineptitude is brought home to us by the following extract from a Reuter's message from Shanghai dated 27th May, 1936—

> About 7,000,000 people in the province of Anhwei are on the brink of starvation as the result of a severe famine caused by periodic droughts. Many of them are subsisting on leaves from trees, bark, seeds and the roots of creepers. Some have sold their household possessions, even the roof timbers, to raise money for food. Public sale of children is also said to be taking place on a large scale.

It seems entirely incongruous that simultaneously with the existence of famine, the world should suffer a depression from the low price of primary commodities. The world has learnt to produce, but has not yet discovered the secret of distribution.

Distribution is effected and controlled by a highly complicated financial mechanism, a mechanism which is only partly understood by an exceedingly small percentage of the world's most intelligent people, and not at all by the vast majority of those who suffer most from its imperfections.

The attempts by governments to regulate commerce both domestically and internationally have resulted in a series of mistakes, each one requiring some fresh legislation to counterbalance the initial blunder, until the maze of restrictions on every form of industry has made clear thinking very difficult.

The prosperity of agriculture is equally dependent on the costs of its requirements as on the sale price of its products. It follows, therefore, that directly governments began to place duties on the products of industry, they automatically discriminated against the interests of agriculture by creating an artificially high price for those goods which the farmer wished to buy. Having nearly ruined the agriculturists in this way, the governments have been forced to come to their assistance and reimburse them with some form of subsidy which in turn must be gathered from industry by the imposition of additional burdens in the form of taxation.

Various devices have been employed to assist the farmer. In Australia and the Argentine currencies have been depreciated and minimum prices introduced. In the United States a number of experiments have been tried out. A Farm Board was appointed to afford the farmer direct financial aid, and to finance the purchase of enormous quantities of grain and cotton. According to a report by Senator McNary, this board loaned a total of $1,100,000,000 and eventually lost $344,000,000. Later, when it was

discovered that the maintenance of artificially high prices only aggravated the problem by stimulating production, a new method was introduced. A processing tax of 30 cents per bushel was levied on the miller, who in turn passed it on to the consuming public, and the proceeds were distributed among those farmers who agreed to limit their acreage in accordance with the directions of the Secretary of Agriculture. This scheme (which has now been declared by the Supreme Court as unconstitutional), in conjunction with several bad harvests, has eliminated the American surplus and effectively turned the U.S.A. from an exporter to an importer of grain. A new and very necessary scheme of soil conservation is now in preparation. Its objectives are similar to the last, and the only difficulty is in circumventing the constitution.

Canada, whose small population made any attempt on the lines of a processing tax out of the question, persisted in the earlier method of buying up large quantities of wheat with the taxpayer's money, until, at the end of the 1934–5 season, the Canadian government owned some 200,000,000 bushels of wheat costing, with charges, about 87 cents per bushel. In June, 1935, the prospects for Spring wheat were so good that the market value of this wheat was some 40 to 50 cents below cost. Then came the worst infestation of black rust ever known, and so altered the statistical position that, with the help of another crop failure in the Argentine, the government's loss is likely to be reduced to some $40,000,000 or $50,000,000. A change of government in the autumn of 1935 resulted in a new grain board being appointed with instructions to reduce the surplus to normal proportions as quickly as possible, and the year 1936 has been overshadowed throughout its first half by the liquidation of this stock. An artificially

high minimum price provides a bonus for the farmer who has been blessed with a good harvest, but no compensation for the unfortunate one whose crop has failed. A Royal Commission has been appointed to advise on a future policy for Canada.

In Europe, import duties, quotas and subsidies were accompanied by milling restrictions and government boards appointed to buy up national surpluses. Exports were financed by these boards or subsidized by a system of rebates, and the whole price structure of the Continental grain trade has become ludicrously artificial. Wheat for which the French farmer received the equivalent of 60s. per quarter has been sold in London at 20s. per quarter, and almost every country is attempting to make its own wheat growers independent of the international market.

Economic nationalism was started in order to reduce requirements for foreign exchange and if possible to improve the balance of trade at the expense of one's neighbours. During this year, however, the desire to be self-sufficient as regards food and raw materials has increased as a result of the general political tension and the enormous expenditure on armaments which is taking place in most countries. Many of these European countries are virtually bankrupt, and even if they require to purchase essential commodities from outside it is doubtful if they can pay for them.

It is hardly surprising, therefore, that, in these circumstances, the international grain trade has been reduced to a mere shadow of its former self, and the immediate outlook for the natural exporters of grain is decidedly bleak. So long as the national policy of a country is controlled by fear, so long will sound economy take second place, and the possibility of international planning remain

remote. Economically speaking, the grain markets of the world should be free, so that food could be grown at the lowest cost and distributed to manufacturing countries, but, strategically, grain must be grown within the national frontiers in so far as that is possible. Fear and sound economy are incompatible, and until the peace of Europe is assured it is difficult to visualize an appreciable increase in international trade.

Broadly speaking, the wheat crop of the world is approximately 700,000,000 quarters, and a normal carry-over is about 80,000,000 quarters or nearly 12 per cent. If it is assumed that the international price for wheat bears some definite relation to the general price level, it follows that, for the natural adjustment of supply and demand to be effective, a forecast that the carry-over will be above normal must be allowed to depress the price below normal, and conversely a forecast that the carry-over will be below normal must be allowed to raise the price above normal.

Elasticity of demand is most marked in those countries where the standard of living is low, and where, consequently, cheap bread would provide an important satisfaction tending to raise that standard of living. It would, therefore, appear that if it is desired to prevent a wide divergence in these standards, no better method can be adopted than by permitting international trade and all markets to follow their natural inclinations.

No amount of planning can effectively control the annual production of a crop which is so dependent on the vagaries of nature, and it is only over very long periods that equilibrium can be contemplated. If an international plan can be devised whereby a bountiful nature is allowed to benefit the most needy sections of the community,

surpluses will take care of themselves for a long time yet.

The Grain Trade was built up to distribute the food of the world economically, and, in so doing, it provided the exchange which automatically returned in manufactures. The problem of the Trade is one-half of the economic problem of the world, and it will only respond to freedom and long-sightedness.

APPENDIX II

THE DOMESTIC PROBLEM OF 1936

THE Grain Trade in this country has always suffered to a certain extent from lack of co-ordination. Its general policy has been reasonably consistent, but its propaganda has failed to explain or justify its functions. Each section has had its bad times in the past and worked out its own salvation, and of course during the war all prospered.

The post-war period began with good cash reserves in hand, which were slowly dissipated on a falling market, because, just as a rising market adds value to the assets of the Grain Trade, so on a falling market is value taken away. The milling capacity was greatly in excess of peace-time requirements, and merchants no longer enjoyed the easy, and somewhat demoralizing, existence of fixed profits on allocations with no losses. Hard times intensified competition, brokerages and profits being cut in a hopeless endeavour to maintain turnover.

The milling industry has been the first to organize itself through the Millers' Mutual Association, which has adjusted milling capacity to the reduced needs of the country. Large milling groups have been growing like snowballs, and in recent years the size and variety of their interests have brought them into serious competition with the rest of the Trade. The lack of educational propaganda has resulted in the milling industry remaining virtually ignorant of the various economic services which the Trade provides, so that now, in its strength with all the weakness of monopoly, it is unwittingly hastening to destroy the very entity on which it depends for service, the market.

The concentration of buying in a few hands has automatically reduced the business of the merchant who normally constitutes one prop of the market, and the gradual elimination of the broker from the larger transactions, which are negotiated direct with the shipper, is slowly destroying the second prop.

A brief study of Trade history clearly shows that unpopularity of the intermediary is no new thing. For more than five hundred years the intermediary has been cursed by the farmer, who will never believe that he is getting as much for his produce as he deserves, and, on the other side, it has always been difficult to persuade the consumer that a high price is justified by economic facts.

Until recent years, however, neither side has been strong enough seriously to interfere with the machinery of the Trade without state assistance, but from 1924 to 1930 the Canadian Pools, representing the power of the farmers, attempted to usurp the functions of the Trade and distribute grain direct to the consumer, and now in 1936, the port millers, representing the power of the consumers, are in their turn attempting the same thing from the opposite end.

The first attempt was made in order to sell grain dearer, and the second attempt is being made with the object of buying grain cheaper. If it is remembered that grain can almost invariably be bought from the Trade at less than the contemporary cost (*vide* Section XVII), it follows that these two interests by their compensating complaints are in fact providing the Trade with the best of testimonials for impartial efficiency.

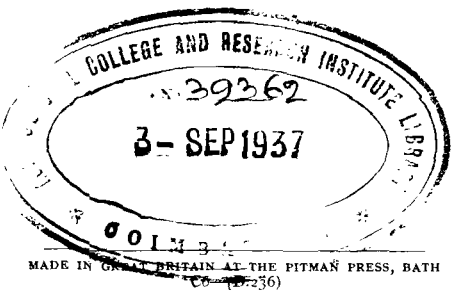
The mistakes of the Pools are being paid for by the taxpayers of Canada, and the mistakes of the millers will be paid for by the public in this country. No amount of

knowledge can eliminate important errors of judgment in a commodity business, and it is one of the duties of the Grain Trade to act as a shock-absorber for these mistakes. Individual members may be brought down from time to time, but their misfortune does not result in the dislocation of the distributional service.

The shippers, by ignoring the intermediary who alone can provide them with an alternative market for their grain, are slowly but surely placing themselves at the mercy of the millers. Shippers and millers can by themselves accomplish the "distribution in space" of a large proportion of this country's imports, but they can never by themselves produce a market, they can only use one.

The present tendency disregards "distribution in time" and "market insurance," and, if persisted in to the elimination of the intermediary, will undoubtedly destroy these services. Equilibrium will disappear and price movements will cease to have a meaning. The grain business will become a battle of giants, and the chief sufferer in this country will be the consuming public. All mistakes and all losses will be passed on in the price of bread.

The intermediaries of the Trade lack leadership, and have admittedly failed to present their case in a convincing manner, but as a class they are necessary, and it is to be hoped that a sound scheme of Trade reconstruction will be concluded without further delay.



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