

THE POLISH ECONOMIST



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THE POLISH ECONOMIST

A MONTHLY REVIEW OF TRADE, INDUSTRY AND ECONOMICS IN POLAND

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FEBRUARY showed an undecided tendency in more than one respect. In certain branches of economic activity the situation continued to be good, and even displayed some strength, while in others the reverse was the case. It is difficult, therefore, to say now to what extent this is due to the seasonal influences and to what extent, if any, it is attributable to other causes.

In agriculture, the intense frost and inadequate snow falls, have adversely affected the winter sowings. The protracted winter has also delayed the opening of work on the land. In this connection prices of agricultural products showed a slight upward tendency.

In industry, the brisk activity which has been in evidence for over eighteen months was also the characteristic feature of the period under review. Unemployment figures, which rose during the winter season, have begun to recede, which undoubtedly testifies to the forthcoming revival of productive work, and may be regarded as a usual occurrence in the spring.

Commerce continued to enjoy good trade, the organising work being pursued energetically. The seasonal trades are doing well; railway traffic increased, but the movement of ships in the Polish ports has not, as yet, reached its normal level.

The foreign trade balance was again adverse, due to the heavy imports for productive purposes and investments, and to decreased exports which cannot keep pace with the imports on account of the growth of local consumption.

The State budget was well balanced and its equilibrium is assured by considerable reserves; the revenue of the Treasury declined in February which is attributable to the fact that no important taxes fell due during the month.

The money market has improved owing to a steady, though small inflow of foreign capital and increased savings; undertakings of high standing do not experience any longer any difficulties in obtaining credit facilities.

The Bank of Poland increased its gold and silver reserves, which also indicates that Poland's balance of payments is favourable, even despite the unfavourable foreign trade balance.

REVIEW OF THE GENERAL ECONOMIC SITUATION IN POLAND

FEBRUARY 1928

	UNIT	FEBRUARY 1927	JANUARY 1928*)	FEBRUARY 1928
STATE OF EMPLOYMENT:				
UNEMPLOYED		208.536	181.672	179.644
PRODUCTION:				
COAL	thousand tons	3.411—	3.454—	3.271—
OIL		51.1	63.9	51.3
IRON		42.6	59.1	54.5
AGRICULTURAL INDEXES:				
(CROP PROSPECTS)				
RYE	5 points system	3.5	3.3	3.2
WHEAT		3.4	3.3	3.2
BARLEY
OATS
PRICES:				
WHOLESALE PRICE INDEX	(1914 = 100)	158.3	118.0	117.8
INDEX OF COST OF LIVING IN WAR- SAW		170.7	120.3	118.3
FOREIGN TRADE:				
IMPORTS	million zł	193.6	271.2	270.4
EXPORTS		201.2	218.4	197.8
EXCESS OF EXPORTS (+) OR IM- PORTS (—)		+ 7.6	— 52.7	— 72.6
TRANSPORTS:				
RAILWAY TRAFFIC	truck loaded (15 tons) reg. ton	311.416	454.832	468.162
PORT TRAFFIC (DANZIG AND GDYNIA)		261.883	344.165	335.220
BUDGET:				
RECEIPTS	million zł	165.5	255.0	238.9
EXPENDITURE		148.6	229.0	233.4
MONEY CIRCULATION:				
BANK OF POLAND NOTES	million zł	633.5	1 003.3	1.047.7
COVER IN GOLD AND FOREIGN CUR- RENCIES	% %	55.43	71.07	69.87
TOKEN COINS	million zł	413.2	285.3	283.2
CREDIT:				
(BANK OF POLAND)				
BILLS DISCOUNTED	million zł	329.1	460.7	469.2
OFFICIAL DISCOUNT RATE	% %	9.00	8.00	8.00
FOREIGN CURRENCIES:				
(WARSAW STOCK EXCHANGE-AVERAGE RATES)				
U. S. A. DOLLAR	zł	8.95**)	8.90	8.90
POUND STERLING		43.51**)	43.47	43.45

REMARK: — Figures appearing in the above table are intended exclusively to characterise the economic situation in February 1928; detailed comments on them, and in some cases the latest data, are given in the respective sections of this issue and in the "Latest news".

*) Corrected figures.

**) zł of 1924

THE DEVELOPMENT OF CAPITAL INVESTMENT IN POLAND

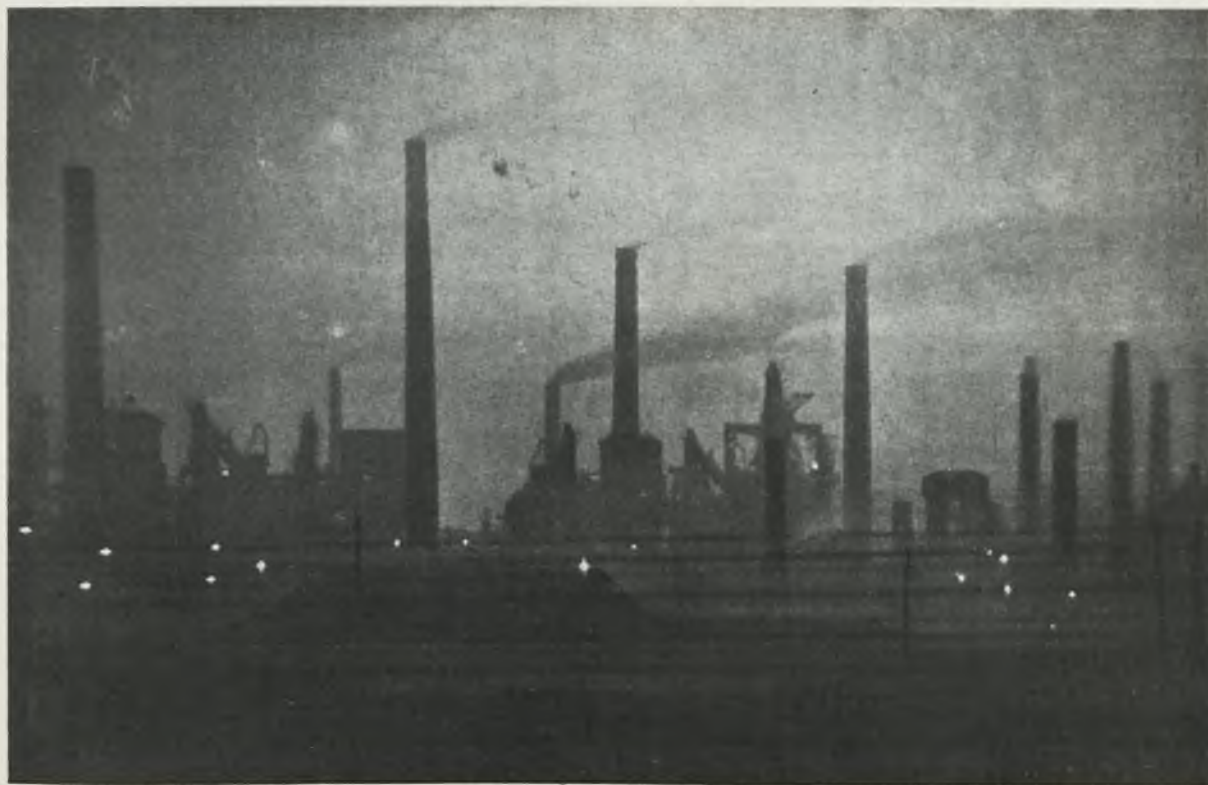
BY

GABRIEL CZECHOWICZ

MINISTER OF FINANCE

THE GOVERNMENT of Marshal Piłsudski is sparing no effort in order to foster investment work. With this aim in view, it is, in the first place, providing increasingly large sums for investment purposes in the State budget, and secondly, it is

Ministry of Public Works for hydrographic work (Zł 7,650.000), for roads (Zł 7,350.000), for bridges (Zł 3,900.000), as well as the disbursements made by the Ministry of Posts and Telegraphs on the construction of new telephone and telegraph lines.



INDUSTRIAL POLAND (PHOT. S. PLATER)

doing everything possible to revive long-term credit, which was destroyed by the war.

In the budget for 1928/29 large sums have been devoted to capital investment in the Polish State Railways and have been allocated as follows (in thousands of Zł):

Construction of new railway lines	53.750
Construction and reconstruction of railway junctions and stations	30.500
Buildings	24.300
Purchases of rolling stock	40.500
Various	79.950
Total:	229.000

In other sections of the State budget the sums devoted to capital investments total Zł 191,433.693, of which Zł 21,595.718 appears in the supplementary budget. Apart from disbursements on the construction of Government buildings and schools this sum includes the amounts assigned by the

These sums also include the expenditure of the Ministry of Industry and Commerce on the construction of the port of Gdynia, the expansion of the Polish mercantile marine, amortisation and the payment of interest on loans contracted by the Gdynia Municipality for port investments &c., also the disbursements of the Ministry of Finance on the buildings of the State Monopolies, and machinery and equipment therefor (Zł 5,531.000).

The law relative to extraordinary capital investments to be made by the State constitutes further proof that the Government is eager to promote investment activity. Out of cash reserves the sum of Zł 88,000.000 has been devoted to supplementary investments, namely — for the construction of Government premises, law courts, schools, roads, bridges, as well as river regulation &c.

Also from the proceeds of the Stabilisation Loan,

a sum of over Z 90 million is to be used for various investments in the State Railways, the construction of a nitrogen compounds factory at Tarnów, &c.

Long-term credit was almost completely destroyed by inflation, but with the consolidation of economic conditions it has gradually been revived. The Government Banks, namely: the Bank Gospodarstwa Krajowego (National Economic Bank) and the Państwowy Bank Rolny (State Land Bank), have played an important rôle in this revival.

The chief work of the Bank Gospodarstwa Krajowego is the financing of self-governing administrative units and State undertakings. The granting of increasingly large loans for investment purposes

existing; also great stress has been laid on the construction of up-to-date slaughter-houses and mechanical bakeries.

A considerable increase is also noticeable in the total amount of mortgage loans granted to agriculturists for the payment of their liabilities as well as for land improvement. The same remark applies to the volume of credits given to owners of property in town for the repair of dwelling houses. As, however, there are private banking institutions specialising in long-term credits, it has been found expedient to limit the activity of the State Banks in this regard and to support the existing banks referred to above.

In addition to giving loans for land purchase in



POLISH COUNTRYSIDE (PHOT. J. BULHAK)

to self-governing units in the form of communal obligations is one of the characteristic features of the Bank's activity. The credit requirements of credit institutions for investment purposes, such as the construction of electrical power stations, abattoirs, bakeries, sewers, water supply systems, &c., are very large. The amount required for providing only the largest cities with these public utility works, has been estimated by the Union of Polish Towns at over Z 500,000,000. This sum does not include the needs of the smaller towns and district self-governing units.

The Bank Gospodarstwa Krajowego could only partly meet these needs; a considerable increase was recorded last year in the issue of communal obligations—namely, from gold Fr. 3,095,000 to gold Fr. 44,042,000. Thanks to the credit given by the Bank Gospodarstwa Krajowego, a number of public works of a productive character are now being carried out in many towns. Particular attention has been paid to the construction of new electrical power stations and to the expansion of those already

connection with the parcellation scheme, the State Land Bank accords long-term credits to farmers for land improvement. The aggregate number of loans was 4,517 totalling Z 35,420,000 and it is certain that this expenditure will contribute considerably towards the productive capacity of these farms.

The amount of 8 per cent bonds issued up to the end of February 1928, reached Z 52,000,000. From May 1, 1928, the Bank will issue 7 per cent mortgage bonds.

As regards credit for land improvement, to which the Government pays particular attention, it should be stated that, as the existing source, the State Land Improvement Fund, which was based on the law of July 22, 1925, is insufficient, it is necessary to finance land improvement by means of an issue of securities, i. e., bonds of the State Land Bank. These bonds will bear interest at the rate of 7 per cent and will be repayable over a period of 15 years, including a period of 3 years at the beginning during which no payments towards the amortisation of the bonds will be made. These credits will be

granted to concerns exploiting water power resources as well as to individual estate owners; in both cases, the credits will be secured by a mortgage. With the desire to create propitious conditions for land improvement, the Government will provide in its budget an adequate sum for the reduction of the rate of interest paid by the credit users. On the strength of the applications already received by the State Land Bank, the amount of credit which will be accorded this year for land improvement will be about Z 50 million.

In the near future a 4 per cent Premium Investment Loan amounting to Z 50 million, will be floated. The proceeds of this loan will be utilised for building purposes.

As regards the placing of securities and bonds, it is gratifying to note that, thanks to the increase in capital and savings, there is a ready market within the country.

The Postal Savings Bank can absorb a large amount of bonds for investment purposes, as it shows a steady increase in savings.

In connection with the projected issues of long-term credit bonds, it is intended to interest foreign financial circles in them to a larger extent than was the case before.

The inflow of foreign capital is absolutely necessary for the economic development of Poland, and the Government will take care that it is employed to the best advantage.

ECONOMIC EXPANSION OF POLAND

BY

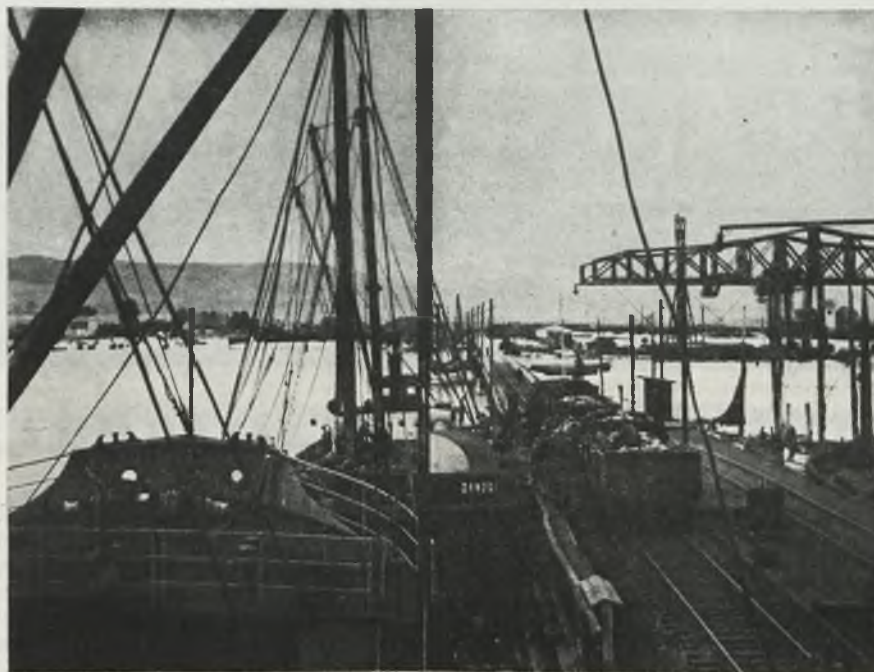
EUGENJUSZ KWIATKOWSKI

MINISTER OF INDUSTRY AND COMMERCE

INVESTMENTS, investments! There is no exaggeration in saying that in Poland, especially of late, this word has become a watchword and at the same time one of the most pressing problems which the country must solve in the near future.

the trader and the artisan; also it concerns social organisations, self-governing bodies and the State as well.

Before the Great War the large reserves of raw materials, such as coal and iron ore, rock salt and



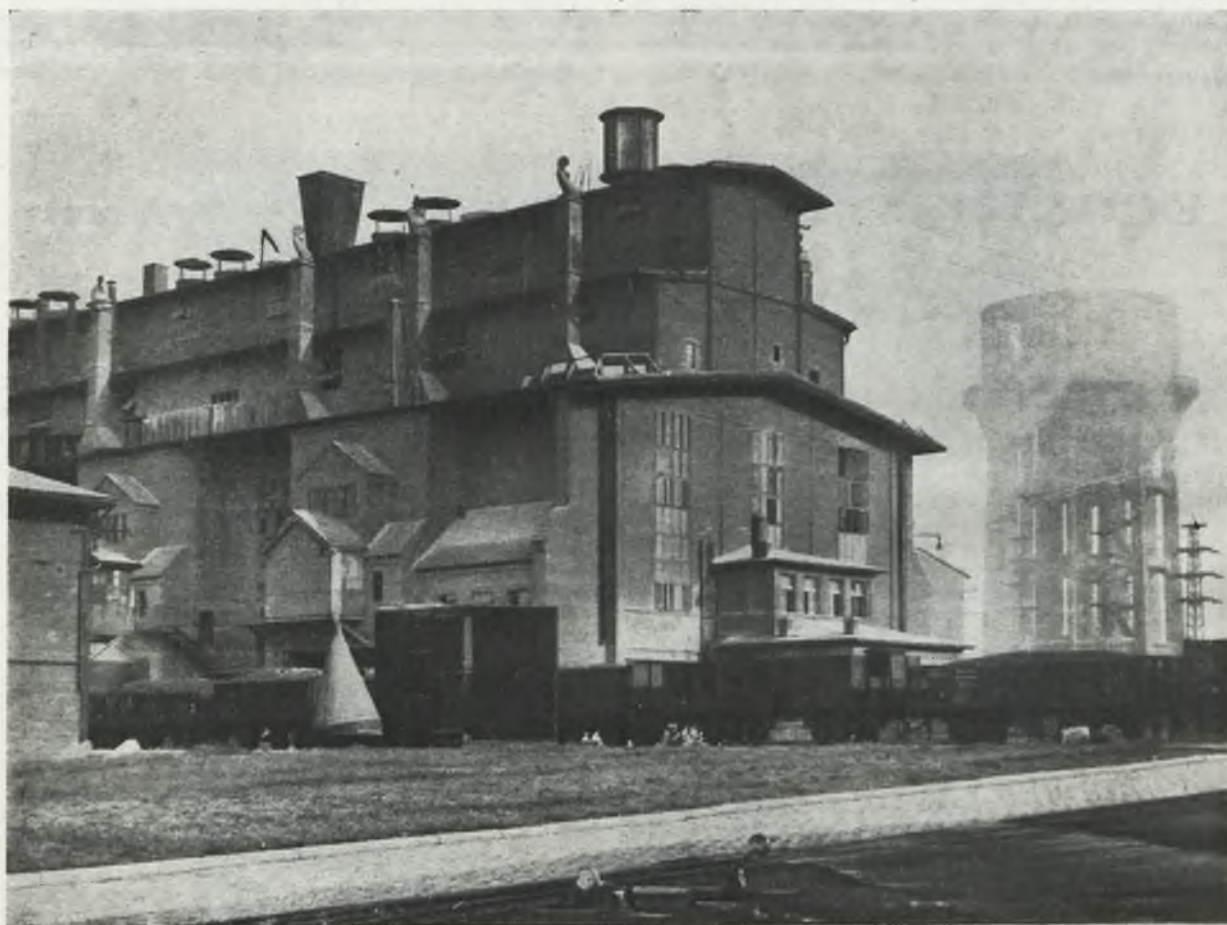
A GLIMPSE OF THE RISING PORT OF GDYNIA (PHOT. S. PLATER)

It is also an intricate problem, for there is hardly a branch of economic activity which does not call for large investments, which, in many cases, exceed the present material possibilities of the community and the State. It is also a most urgent problem because it concerns the interests of workmen and the peasant, the industrialist and the estate owner,

potassium salts, crude petroleum, natural gas rich in gasoline, ozokerite, phosphorites, timber, agricultural produce, water power &c., which were and still are situated in the heart of Europe, remained either practically untouched or insufficiently exploited. Also large cities, such as for instance Łódź, the Polish Manchester, while possess-

ing large savings at the Russian governmental banks, had no proper water supply system, no sewage, no proper lighting, modern pavements, gardens or parks. The development of the railways was also being checked by the partitioning powers; and they did not meet many other requirements of the country. Rivers are not regulated; roads and highways are still not adapted to motor traffic which, as is well known, is making rapid progress. The farming community are in want of agricultural

change since the restoration of the country. In pre-war days all initiative, even in the sphere of industry and commerce, was hampered and interfered with by the alien Governments, whereas the business community of to-day is more active, keener and filled with energy. Economic problems are being followed with interest; new methods of organisation and operation are being studied and taken advantage of. The return of a large number of emigrants from the United States of America [who brought



A DEPARTMENT OF THE CHORZÓW NITRATES FACTORY (PHOT. S. PLATER)

machinery and artificial fertilizers, particularly after the experience acquired in this respect during the last few years. The housing problem continues to be grave. The needs of the working classes are far from being satisfied. Industrial plants should be modernised and the persons concerned are fully aware of it; more, they are very desirous of taking the necessary steps. The production of machinery in Poland is growing steadily; nevertheless, imports of machinery which in 1926 amounted to gold Fr. 52 million, and of tools — to gold Fr. 2.5 million, in 1927 reached the level of gold Fr. 137 million. During the same period imports of electrical machinery and various appliances rose by well over 100 per cent.

It is also noteworthy that the mental outlook of the Polish businessman has undergone a profound

with them not only their large savings but also their experience from that progressive country, has materially contributed towards this achievement.

The Ministry of Industry and Commerce takes an active part in the constructive work of the Polish community. Quite independently of granting various facilities and co-operating with private interests in the matter of capital investments, the Ministry conducts several public works of importance which, under present conditions, could not be carried out on a sufficiently large scale and within a comparatively short space of time, by local private financial interests.

Among these works should be mentioned, first of all, the construction of the Gdynia harbour. In a way this may be regarded as the erection of

a memorial to the national effort of the present generation of the Polish people.

Thanks to the support of the United States of America and the equitable views on this complicated matter of their Great President — Woodrow Wilson — Poland secured access to the Baltic sea. Ever since, this small strip of coast line has become an important transshipment centre. The largest and quickest growth of freight traffic has been recorded on this small sector of the Polish frontier, although its total length represents several thousand kilometres. Up till quite recently the bulk of the goods shipped to overseas was handled almost exclusively by the only port situated on this coast — Danzig. In 1922 exports of Polish goods forwarded via Danzig totalled 500.000 tons, whereas in 1927 they exceeded 6,000.000 tons, an increase of 1.200 per cent. Compared with pre-war days, the growth of freight in 1927 was as regards Hamburg — 20 per cent, Bremen — 45 per cent, Copenhagen — 10 per cent, while that for Danzig represented 500 per cent.

Under these conditions, Poland decided to construct a harbour at Gdynia which from the navigation point of view, is more suitable and safer than many other Baltic ports. About two or three years ago Gdynia was a small fishing village, whereas to-day its handling capacity is over 1.5 million tons per annum. In 1930, the handling capacity will reach 5 million tons and by 1932 or 1933 this figure will be increased to about 8 million tons per annum, that is Gdynia will be in a position to deal with a greater volume of goods than Danzig does at the present time.

In 1927 the Ministry of Industry and Commerce founded a shipping company, the first in Poland, with 35.000 reg. tons. In addition, there are two private companies with 20.000 reg. tons, so that the three companies, taken together, owned about 55.000 tons at the end of 1927. At the same time a fleet of five passenger steamers which maintain regular passenger service between the different Polish ports, were also put in commission. It is note-

worthy that all the shipping companies, referred to above, are developing most satisfactorily.

As the railway lines leading to the Polish coast will be considerably extended in the next few years, the Ministry of Industry and Commerce, in anticipation of a further growth in goods traffic, is about to prepare plans for the construction of a third sea harbour at Tczew.

The development of cyanamide production at the State Chemical Factory at Chorzów, has reached its zenith. This factory, which in 1923 could hardly place about 40.000 tons of nitrogen compounds on the domestic market, has already sold out every ton of its 1928 output amounting to at least 160.000 tons of cyanamide and other nitrogen compounds, utilised as fertilizers. Considering that in this domain only large plants involving enormous capital investments can be economically operated and that the necessary capital cannot be raised by private interests at the present moment, despite the profitability of this branch of industry — the Ministry of Industry and Commerce decided, in 1927, to erect, at Tarnów, a special modern plant at a cost of from eight to nine million Dollars. This plant will be put into commission in 1930.

It should also be mentioned in this connection that the Ministry of Industry and Commerce is making more or less large investments in State undertakings, including salt evaporation plants, the Brzeszcze coal mines and the State Petroleum Refinery — "Polmin"; also a new building for the Polish Geological Institute is now under construction.

The Ministry of Industry and Commerce feels confident that parallel with the intensive reconstruction of economic life, an increasingly large portion of investments will be made by private capital both local and foreign, especially when it is considered that the local market is becoming more and more active and that its absorbing capacity grows from year to year.

The problem of investments in branches of production other than State undertakings are dealt with under separate headings in this issue *).

PROPER EMPLOYMENT OF FOREIGN LOANS

BY

CHARLES S. DEWEY

FINANCIAL ADVISER TO THE POLISH GOVERNMENT

FREQUENTLY conditions of the money market in various financial centres of the world plus the aggressive sales methods of a certain class of bankers who think more of their own immediate profits than the continued welfare of their prospective customers, make loans available for purposes that should only be financed by savings.

Unless conditions are very unusual, a government or a municipality, or a private concern, can borrow money at some price. It may prove, however, after the loan has been made, that the cost of the

borrowed money is out of all proportion to the benefits derived from its investment.

Before a foreign loan market is entered at all, two primary factors should be given careful consideration:

1) Will the employment of the money pay for its rent, provide a surplus for its repayment and at the same time leave a profit for the borrower?

2) Will the investment of the money tend to increase the exports of the country where the

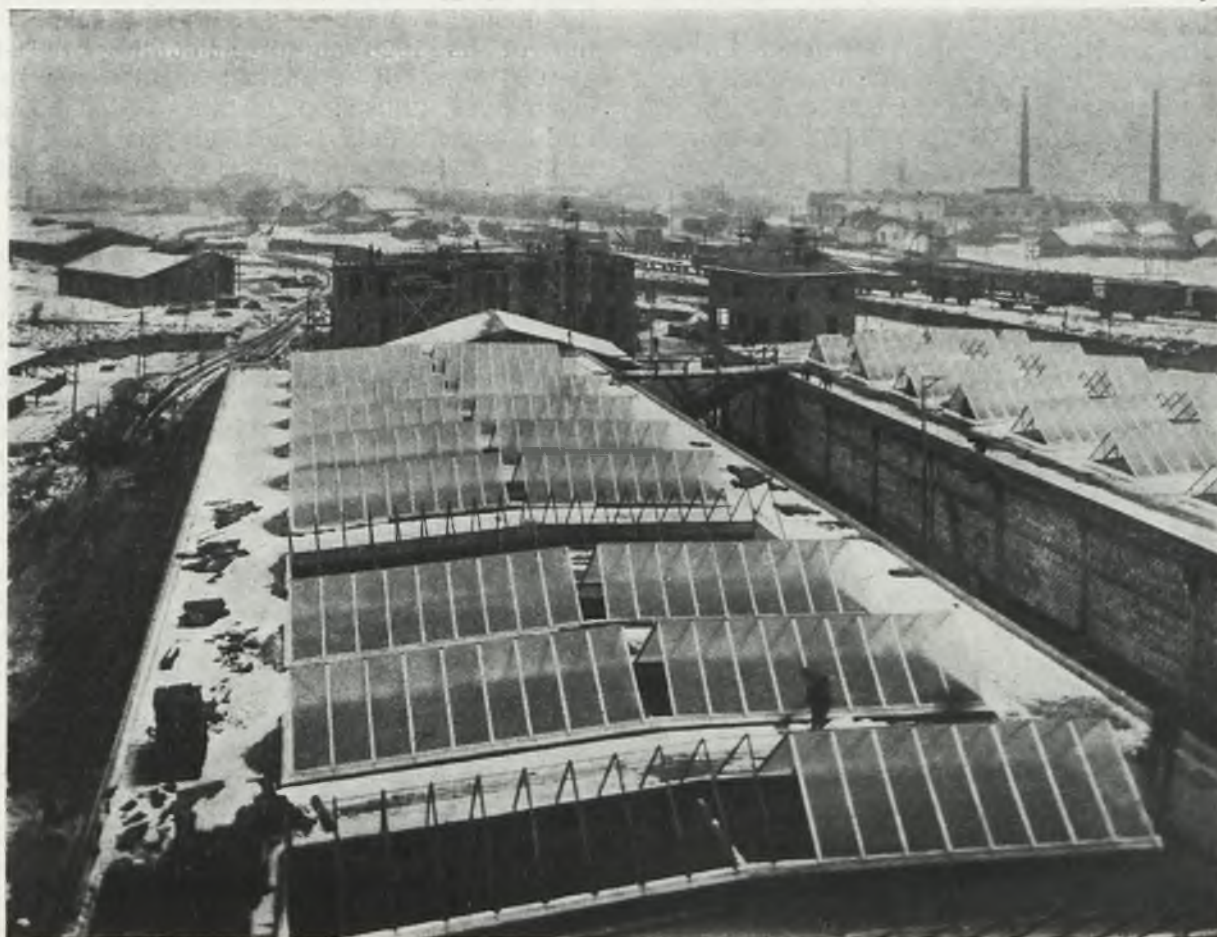
* See pages: 149 (sugar), 150 (timber), 152 (coal), 153 (petroleum), 155 (iron), 157 (metal industry), 158 (textile industry), 159 (chemical industry, building).

borrower resides and thus develop sufficient foreign exchange to take care of the service of the loan?

These two points should especially be borne in mind by the organisations, governmental or private, of a country which is in a period of reconstruction and for this reason may be suffering an unfavourable balance of trade.

Frequently the need of a country for things which increase the comfort of its people without increasing their production are so strongly felt

Let us now look at the effect of the productive loan that pays its own way upon general economic conditions. The proceeds of borrowing of this character are invested in types of industry which increase the country's wealth. The normal result of the increase of the country's wealth is a gradual diminution in the demand for foreign assistance, and as the demand decreases the cost of money decreases with it.



CABLE FACTORY NEAR KRAKÓW, UNDER CONSTRUCTION

that seemingly the most sound arguments can be presented in favour of foreign borrowings for such purposes. If experience had proved that this type of borrowing could readily be restricted to proper proportions, it might be engaged in. Human nature, however, is nearly similar all over the world and it has been discovered that if the unproductive type of borrowing is commenced, it is hard to stop, and presently the service of this type of loans may place such a burden on the balance of international payments that the stability of the country's currency may be endangered. Even if the danger does not reach these limits it will be found that the cost of each new loan of this character will increase and will have the effect of adding to the cost of all other loans.

It undoubtedly requires the greatest fortitude to refuse offers of loans which will add to the ease and comfort of the people, but which are for non-productive purposes. Fortitude of this type shown during the reconstruction stage of a country's development will produce results more permanently satisfactory than will injudicious borrowings for purposes that should only be met by patience, hard work, and saving on the part of the people themselves.

Poland is showing wisdom in selecting the projects for which foreign borrowings are made. The continuation of this policy will place economic development on a sound foundation and add to Poland's credit.

INVESTMENT PROGRAMME IN AGRICULTURE

BY

KAROL NIEZABYTOWSKI

MINISTER OF AGRICULTURE

ONE OF THE MOST important factors in the economic development of Poland is the expansion of agriculture by means of new intensive methods of operation. The adoption of intensive methods in agriculture will lead to an increase of the spending ability of the rural community, which will exercise a decisive influence on the increase of the State revenue as well as on the budget equilibrium, will widen the scope for the domestic manufacturing industry, will favourably affect the foreign trade balance and will give employment to a larger number of hands. Following the adoption of the new methods in agricultural production there will be an increased demand for foreign manufactures on the domestic market, for it is a well known fact that efficiency in agriculture means larger sales of foreign products, whereas the old methods could only supply bare necessities, so that from the point of view of the foreign industrialist countries such markets are really insignificant.

On the whole, the method of operating farms is less intensive in Poland than in Western European countries and it varies in particular regions despite the fact that the basic economic conditions are analogical. The best managed farms are mostly situated in the Western Voievodships, whereas the reverse is the case in the Eastern Voievodships; however, as proved methods are being employed in all parts of the country, the agricultural community has a good example to follow.

Polish agriculture, working under normal conditions, is making steady progress especially as there are ample supplies of good and cheap labour. The only drawback is the shortage of funds for capital investments which would favourably affect the development of this branch of production. It is clear that the basic requirements in agriculture at the present time are the provision of the necessary capital and in particular the organisation of cheap credit facilities for this purpose.

An investment programme should be drafted in such a manner as to make use of as large a number of hands as possible because so far the importance of this factor has not been fully appreciated. Under the present conditions over a half of the total number of farms in Poland, do not provide sufficient means of sustenance for the owner and his family owing to the smallness of the holdings. The over-population of the Polish villages which can only be reduced by a suitable agrarian policy, calls for the creation of an investment programme which would imply the extensive and economic use of labour on comparatively small areas.

The breeding industry should be considered first of all when drafting such a programme, but at the same time efforts should be made to increase the yield of crops per surface unit, for it is only in this way that the supplies of agricultural produce

can be increased, without which it will be difficult to maintain the necessary reserve for home consumption or to carry on stock-breeding in a rational manner. Moreover, an investment programme should provide for the development of those branches of farming which are only loosely connected with the soil, that is fruit farming, apiculture and silkworm farming.

The credit requirements of Polish farmers are very wide, but in this article only the most important will be dealt with. In the sphere of plant cultivation should be mentioned the foundation of a credit institution whose object would be to grant credit facilities for land improvement and drainage, the cultivation of waste land by fostering the production of osiers, the breaking in of virgin land in the mountainous districts, fruit farming and hop and flax growing. The most important problem requiring a large outlay of capital is undoubtedly that of land improvement and drainage.

The outstanding feature of the Polish soil is the excess of moisture, so that draining is necessary. Up to the present time about one million ha have been drained, whereas the total area under cultivation requiring to be freed from water is 18 million ha of which 10 million ha must be drained.

The total sum which should be expended for this purpose in Poland is estimated at the enormous sum of gold Fr. 45 milliard, but taking into consideration various technical limitations &c., the credits needed for the next 5 years may be estimated at gold Fr. 123 million.

It should be stated that according to the experience gained in this respect, drained soil gives such good results, particularly as regards root and grain plants, that the expenditure is more than justified. Drained soil increases the yield of wheat by 48 per cent, of rye by 70 per cent and of potatoes by 150 per cent. It is obvious, therefore, that the money spent on drainage may be amortised within 5 years, and besides, in many areas fish ponds could be established. The investigations carried out showed that this statement concerns particularly the Eastern Voievodships where, for instance in the Polesie Voievodship alone there are about 10,000 ha of swamps and swampy meadows, which are most suitable for the construction of fish ponds.

As regards the breaking in of virgin waste land, the cultivation of osiers should be undertaken. There are in Poland about 1.5 million ha of sandy soil and considerable areas of moist waste land on which the cultivation of osiers would prove a success. At the present time the area under osiers is about 60,000 ha. The increasing demand for osiers on the part of the basket industry as well as the large requirements of foreign buyers,

indicate clearly that it would pay to increase tenfold Poland's output of this product.

In the Southern part of Poland there are about 120.000 ha of hillside pastures, which may be regarded as excellent land for cattle and sheep breeding. These pastures suffered a great deal during the war, but investments made in lands would no doubt prove profitable.

As regards credits for running special farms, fruit, hop and flax growing should take first place. The consumption of fruit in Poland has been, so far, very low, in fact much lower than elsewhere, and there is every reason to believe that it will

is closely connected with the problem of investments in the allied manufacturing industries. Steps should be taken with a view to enabling the agricultural community to deliver the products to both home and foreign markets in an advanced stage of manufacture and if possible fully manufactured. The construction of grain elevators, plants for the preparation of flax, tinned fruit and vegetables, and workshops for the preparation of osiers—should be mentioned among those branches of economic activity which ought to receive careful attention in the matter of credits.

The construction and exploitation of grain



GRAIN CROP ON HIGHLY CULTIVATED GROUND

augment in the near future. Increasingly large consignments of foreign fruit are imported each year, yet this commodity could be easily raised on the spot. The value of the imports of fruit reaches zł 16 million per annum. It is seen therefore that the prospects for fruit growers in Poland are encouraging.

The production of hops has good prospects for future development thanks to the propitious economic and natural conditions, especially in the Southern part of Poland. The area under hops before the war was 5.000 ha, but after the war it fell to 2.500 ha. One of the aims in the near future should be to bring back this branch of farming to its pre-war state. Hops is an essentially export article and the growth of its production will contribute towards the re-establishment of the foreign trade balance, especially when it is borne in mind that its cultivation in Western European countries is declining owing to less favourable conditions and the higher cost of labour than in Poland.

The question of investments in plant cultivation

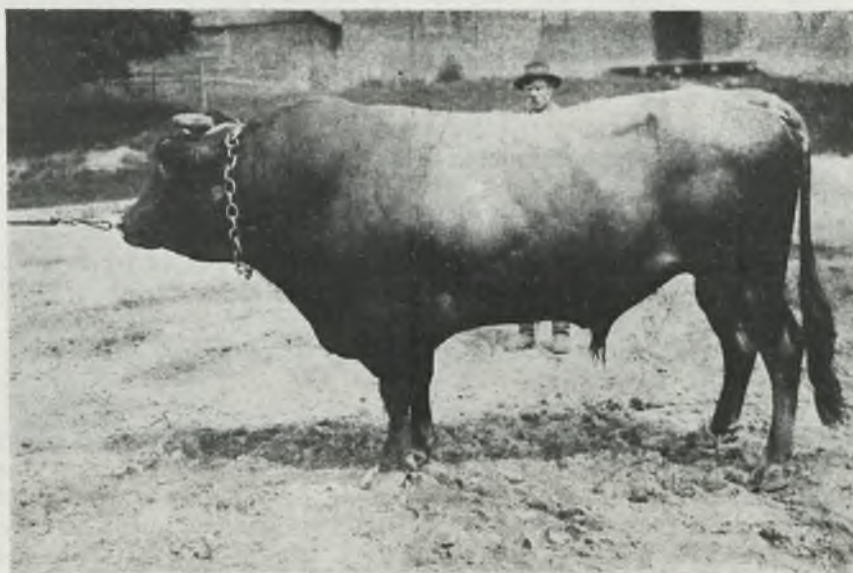
elevators will contribute towards properly regulating the movement of grain on the internal market and to doing away with the middlemen, while at the same time the quality of grain both for home and export will improve markedly. The elevators will also benefit the grain transit trade between the East and West of Europe via Poland. Moreover, the erection of grain elevators will enable the organisation of warrant credit secured by grain. The structure of Polish agriculture, based as it is on the principle of a sufficiency of grain for home consumption, with certain surpluses of rye and barley for export, does not need extensive export and import elevators, but calls rather for the erection of district stores adapted to the requirements of given areas. The committee of experts which was appointed and called upon to draft the project of the erection of elevators has already terminated its work. The projected elevators can be constructed at a cost of gold Fr. 60 million, but the construction of those which are urgently required, with a handling capacity of 150.000 tons, will only involve an expenditure of gold Fr. 37

million, and these latter should be erected without delay.

Attention should also be drawn to the establishment of scutching and flax breaking plants. The existing plants are capable of handling only 25 per cent of the raw material furnished by Polish agriculturists, and there is a shortage of flax fibre on the chief consuming markets, that is England, Belgium and France, due to the decline in the production in Russia, the chief source of supply, as compared with pre-war days. Exports of this commodity from Poland amounted to 300.000 tons in 1913 as against from 30 to 60.000 tons in recent years. Polish flax has, hitherto, mostly been exported in the form of straw and partly worked up manually by the peasants themselves. It is neither sorted according to the length of fibre nor

goods to oversea countries amount to above 90.000 tons per annum and show an upward trend, a cold storage plant for export purposes having a capacity of 8.000 tons should be built at Gdynia without further delay. The number of refrigerator cars is sufficient for the time being but on the other hand Poland possesses no cold storage ships, and no efforts should be spared with a view to acquiring ships of this kind in the near future.

The expansion of dairy farming exercises a favourable influence on the output of milk and contributes considerably towards the development of cattle-breeding on rational lines. In Poland there is in evidence a strong tendency towards the organisation of dairies on co-operative lines; the mobilisation of sufficiently large capital for this purpose will enable the realisation of the tendencies



A POLISH-BRED BULL

as regards the colour. The erection and operation of modern flax factories will help towards improving the present position in flax production in Poland and that in the consuming markets abroad.

As regards developing the output of products of animal origin, this can be achieved by the provision of refrigerating plants for cold storage accommodation at dairies, slaughter-houses and meat factories. There is no need for investment in the cattle-breeding industry, for the improvement of Polish domestic animals is provided for by the veterinary and stock-breeding legislation which does not involve any capital expenditure.

The steadily growing business in meat, butter and other perishable goods calls for attention to be given to the expansion of cold storage accommodation in Poland. A set of cold storage warehouses connected by means of railway lines running refrigerator cars as well as sea-going ships equipped with refrigerating plant are urgently required, for, in this business, only a comprehensive and self-contained arrangement can give favourable results. Considering that exports of perishable

which are already so apparent in the field of stock-breeding.

The large production of pigs, which are now exported living, demands the construction and operation of export slaughter-houses and meat curing plants. As for the agricultural produce transforming industry, the opinion is frequently expressed that it is already sufficiently developed and that there is no need for capital investments for the time being. This opinion is ill-founded especially as regards sugar manufacturing which, it may be recalled, is concentrated chiefly in the Western Voievodships where the natural conditions for sugar beet cultivation are comparatively less favourable than in the Southern Voievodships. Although at the moment there is an overproduction of sugar in the world, yet, considering that the consumption of this commodity in Poland is low and that of the world is steadily increasing, it is almost certain that favourable conditions for sugar production will arise. Possessing as she does good soil for sugar beet culture in the Southern Voievodships as well as abundant and cheap skilled

labour, Poland should endeavour to expand the sugar industry in these Voievodships.

In forestry, credit facilities are needed for the afforestation of waste land and for taking proper care of the forests. The aggregate surface of waste land suitable for afforestation is about 800.000 ha, and this should be turned into forests if the production of timber in the future is to be maintained at a proper level. Credit facilities to be devoted to forestry should be used for the construction of roads, railways and buildings which would increase the profitability of the forests and particularly of those located in the Eastern Voievodships of the country where exploitation is carried on in a primitive manner, owing to lack of railway facilities.

Special attention should also be given to providing agriculture with increased supplies of artificial fertilizers. This remark concerns specially the expansion of the potassium salt mines at Kałusz and Stebnik. Sinking ought to be undertaken as there is need of two additional pits. The present output of potassium salts does not cover local requirements so that large quantities are imported

from Germany every year; there is, however, every reason to believe that Poland will, in time, become an important exporter of this kind of fertilizer.

In addition, there are deposits of phosphorites at Niezwiska and also in various localities in the Lublin Voievodship, waiting to be exploited.

The question of providing the agricultural community with the means of production may be solved satisfactorily with the help of the Bank of Poland as well as by the State Land Bank thanks to the improvement in their financial position. In this respect a more liberal discount policy will suffice.

It is seen from the foregoing that the needs of Polish agriculture are numerous and varied. The carrying out of the above mentioned investments would lead, within a very short period, to a general increase in the prosperity of the persons engaged in agricultural industry and commerce.

Speaking generally, the drainage of fields, the construction of cold storage warehouses, flax factories and grain elevators are the first and foremost tasks of the present Polish generation.

POLISH STATE RAILWAY INVESTMENTS

BY

PAWEŁ ROMOCKI

MINISTER OF COMMUNICATIONS

THE BUDGET of the Polish State Railways is divided into two parts. The first embodies revenue and expenditure including the cost of maintenance of buildings, the formation of reserve stocks of materials as well as the replacement of rolling stock, spare parts, accessories &c. and the service of loans contracted by the Railways. The ratio of expenditure to current revenue, expressed in percentages, represents the so-called coefficient of operation. For the year 1926 this coefficient was 83. The second part of the budget is known as the supplementary budget; in contrast with the one mentioned above it is also called the investment budget. The supplementary budget should satisfy the following requirements, though, it is true, it has failed to meet them satisfactorily up to the present:

Section I. — The construction of new lines in accordance with the plan of the Ministry of Communications, which covers 8 years and embodies the building of 2.500 km. of permanent way and the provision of the requisite rolling stock at a total cost of £ 1.355 million. In the current year this work cannot be pursued with sufficient rapidity owing to the lack of the necessary funds. Two lines are now under construction: the first, connecting the Upper Silesian coal basin with the sea-coast, and the second, from Woropajewo to Druja (near the Polish-Latvian frontier).

Section II. — The improvement of the existing railway system, which is an important item owing to the railways constructed by the three partitioning

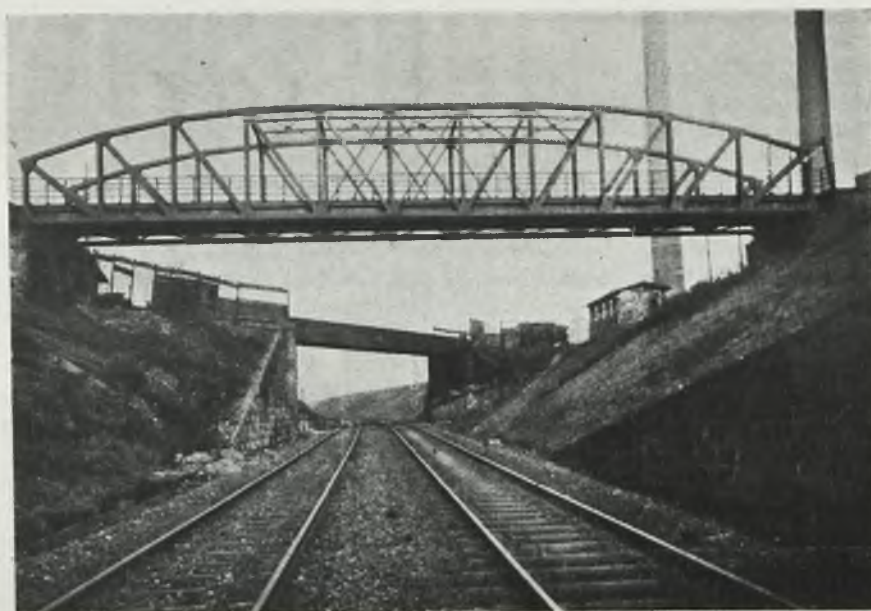
powers not having been adapted to the economic needs of the country, and the permanent way on certain lines being of too light a type; in addition there are lines lacking up-to-date technical equipment, safety appliances, &c. To meet all these needs an allocation of £ 1.196 million covering the under-mentioned items is required (in millions of £):

The increase of the handling capacity of the so-called "coal lines"	90
The construction of second and third tracks, sidings, prolongation of tracks at stations on lines other than coal lines	50
The extension and reconstruction of railway junctions	100
The construction of goods train making-up sidings	35
The extension of frontier and internal stations	100
The construction of sidings at the river ports	10
The reconstruction of and the strengthening of bridges on the lines employing heavy type locomotives	40
The construction of permanent bridges in lieu of those built during the war, still to be found on certain lines	20
The strengthening of about 500 km. of track by means of replacing the light size of rails by a heavier type weighing at least 42.5 kg. per m.	200

The strengthening of 7.500 km. of permanent way by the substitution of gravel or stone for the present sand ballast	180
The erection of stations and other buildings	130
The erection of repair workshops for rolling stock	35
The fitting of safety appliances, the purchase of new equipment, &c. . . .	60

achieved. The following still remain to be rebuilt at the indicated cost (in millions of Z):

671 bridges of an aggregate length of 15.186 metres	65
100 station buildings	20
137 goods warehouses	6
102 water supply systems	9
14 locomotive sheds	4
603 dwelling houses	25
<hr/> Total: 129	



A RAILWAY JUNCTION IN THE WESTERN PART OF POLAND

The increase of rolling stock on the existing lines 146

Of the above mentioned requirements those enumerated in Section II should be met without undue delay, as they are pressing.

Owing to the shortage of funds, the budget for the fiscal year 1928/29 cannot provide for the execution of 1/8 of the investment programme which, as already stated, is to be executed within 8 years.

Section III.—The reconstruction of war damages embraces the finishing of the work already partly

The sum total of the extraordinary expenditure enumerated in the three above mentioned sections amounts to Z 2.680 million. The execution of this investment programme should, as far as possible, be speeded up in consideration of the general economic interest of the country. The Ministry of Communications estimates the term required for the completion of the work at 7 to 9 years.

The supplementary budget for the fiscal year 1928/29 provides for investment purpose the sum of Z 215 million. This means that from its own resources, and with railway rates at a low level, the State Railways are in a position to meet two-thirds of the above specified requirements.

INVESTMENT IN PUBLIC UTILITY WORKS IN POLAND

AT THE TIME of the restoration of Poland its towns and villages were in a state of utter neglect as regards public utility works. This neglect was particularly striking in former Russian Poland, as the policy of the alien rulers was calculated to hamper and impede all initiative aiming at the de-

velopment of self-governing administrative units. The result was that no investments had been made in Russian Poland during the fifty years preceding the outbreak of the Great War, apart from those which were dictated by military considerations or Russian imperialistic ideas,

This neglect was less visible on the territory of former Austrian Poland. Thanks to the extensive powers which self-governing administrative units enjoyed in that part of Poland during the fifty years before the war, and despite the hostility of the central authorities at Vienna, the results achieved on this territory are not unimportant, especially as regards the construction of highways, local railway lines, hospitals, and river regulation; the towns, however, received worse treatment, for in most cases they are devoid of elementary sanitary establishments, such as water supply systems, sewers, and other indispensable public utility works including gasworks, electrical power stations and the like.

As regards former German Poland, it should be stated that the German Government placed no obstacle to the development of public utility works. On the contrary, having placed the administration in the hands of Germans it supported most actively their efforts with a view to strengthening the colonisation scheme.

For this reason the towns situated in this province are much better off in this respect than all the others and in particular than those located in the Central and Eastern parts of the Republic.

The Great War and in particular the regulations made by the German military authorities during the occupation of Poland, as well as the war with Soviet Russia — wrought further havoc in this domain.

After the restoration of Poland some of the first laws passed were those providing for the foundation of self-governing units, as the basis of the country's internal organisation. This conception of Poland's internal order was further emphasised in Art. 3 of the Constitution of 1921, whereby it is clearly stated that the Administration of Poland be based on territorial self-governing units possessing extensive powers.

Despite these vast powers, the first years of Poland's independence were not favourable to the development of investment activity by the self-governing units.

The protracted period of money inflation, accompanied by the destruction of capital and its flight abroad as also the shrinkage of the amounts assessed in the budgets of the State and the self-governing units, was coupled with lack of support on the part of world financiers, and all these factors arrested reconstruction work and the expansion of public utilities.

Consequently the era of intensive investments by self-governing bodies began with the stabilisation of the Złoty and the currency reform in 1924.

Under the influence of stringent money conditions and almost total absence of long-term credit, due to war damages and inflation and subsequent destruction of capital, the self-governing units were compelled to satisfy the requirements mainly out of revenue.

Thanks to economy and the resulting excess of revenue over expenditure as well as to the levying of special taxes for investment purposes, it was possible to place investment work on a sound

footing. According to provisional data compiled by the Official Enquiry Commission and statements of accounts, all self-governing units disbursed in 1924 about gold Fr. 50 million for capital investments out of revenue; to measure the extent of this effort it should be stated that the total disbursements of these units (including village communal unions, and Voievodship unions in former Austrian and German Poland) amounted in that year to gold Fr. 306 million; in 1925 the sums estimated in the budget for investments totalled Zł 90 million, whilst the total expenditure of the self-governing units amounted to Zł 477 million; in 1926, however, despite the exercising of the strictest possible economy and despite the rise in total expenditure of these bodies to Zł 555 million, the amount assessed in their budgets for capital investments, was maintained at the same level as in the previous year. The year 1927/28 saw again a further increase in the investments of these bodies.

During the period from 1924 to 1926 only one-fourth of the above mentioned amounts originated in loans, mostly short-term, which were granted either by the Ministries or by the State and communal banking institutions; the remainder originated in the excess of revenue over expenditure and in the special investment taxes and Government grants. The bulk of the money thus raised has been devoted to the construction of roads, schools, hospitals and other public buildings; comparatively small amounts have been used for investments in communal and municipal undertakings and the redemption of short-term debts.

Owing to the abnormal conditions ruling up to the end of 1926 on the Polish money market, no extensive schemes requiring long-term credit could be put in hand up to that time.

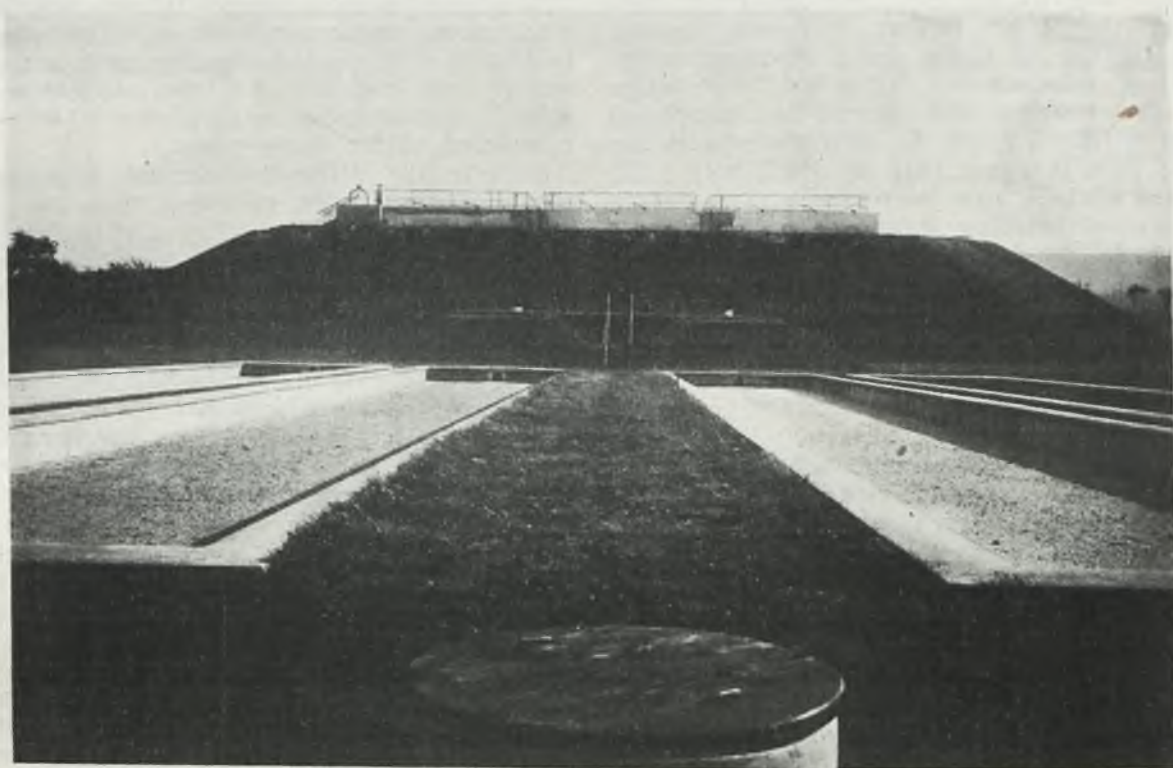
The only local institution which granted to unions of self-governing bodies substantial credits on long terms, was the Bank Gospodarstwa Krajowego (The National Economic Bank). In the year 1925/26 this Bank, acting on the instructions of the Government, granted to these bodies loans for periods varying from three to five years, from the deposits of the Treasury. These loans were mostly utilised for investments, chiefly in road construction, as this was the best means to check unemployment. Moreover, communal unions received credits for building purposes in the same way as the private interests. How insignificant were these credits, accorded to the self-governing bodies and communal undertakings during the past three years, is evident from the fact that they only totalled Zł 39 million on December 31, 1927, about a half of which were the credits granted in 1927.

The steps in the direction of placing long-term communal bonds on the local market for obtaining the necessary means for the investments of the self-governing bodies, did not give the desired results up to the end of 1926. It was only in the year 1927 that the local market could absorb long-term interest-bearing securities, which enabled the Bank Gospodarstwa Krajowego to provide the necessary credit in communal bonds; the total

amount of the 8 and 7 per cent loans granted in the form of communal bonds reached the level of gold zł 47 million at the end of 1927, as against gold zł 5.9 million at the end of the preceding year. The greater portion of this loan was used for the conversion of short-term credits which the communal unions contracted during and after the inflation period as well as for revenue-producing communal undertakings in towns and the construction of roads and narrow-gauge railways in

and the extension of profit-earning municipal undertakings, such as gasworks, tramways, water supply systems, sewers, abattoirs and cattle markets in Warsaw; 20 per cent of the proceeds of the loan will be devoted to semi-paying undertakings (public bath, street cleaning), and finally the remaining 10 per cent will be devoted to investments in non-paying institutions, such as hospitals, sanatoria, &c., and the fire department.

All the above mentioned sums which have been



AN "IMHOFF" TANK NEWLY CONSTRUCTED IN CZĘSTOCHOWA
BY MESSRS. ULEN & CO.

the districts. Loans received from other institutions did not play an important rôle. Up till quite recently the efforts to obtain long-term foreign credits by the communal unions for investment purposes met with considerable difficulties. These efforts have produced so far small results as only two agreements, with the American Concern of Messrs. Ulen & Co. of New York, have been signed, with a view to financing the building of public utility works in ten cities situated in central Poland, including the construction of water supply systems, sewers, market halls, &c. The object of these agreements, concluded between the Bank Gospodarstwa Krajowego and Messrs. Ulen & Co., is the financing of the loan granted by the Bank Gospodarstwa Krajowego to the above mentioned municipalities in the form of communal bonds to the amount of U. S. Dollars 12,464,000. In addition, apart from the foreign capital interested in local transport undertakings, a loan to the City of Warsaw amounting to \$ 10 million has also been contracted recently; 70 per cent of the proceeds of this loan will be utilised for the construction

spent by the municipalities and unions of communal self-governing bodies during the past four years, that is, since the consolidation of Polish finances, covered only a fraction of the actual urgent needs. The leaders of the communal unions, fully realising that the present situation is unsatisfactory, are seeking new ways by means of which these problems could be solved. In order to form an accurate opinion of the needs for public utility works in the different localities and of the capital required for the provision of only those which are badly wanted for the promotion of hygiene and economic life, it is necessary to give a detailed account of the present state of things in this domain.

Among the most important investments in public utility works upon which depends the further development of the country, is the expansion of roads with hard surfaces and the development of communication lines with the suburbs. The distribution of roads is very uneven in Poland and the position in the former Russian section is most unsatisfactory; while in former German Poland

there are 25 km. of roads with hard surfaces per 100 sq. km. and in former Austrian Poland — 21 km., there are in former Russian Poland — 9 km. in the Central Voievodships and only 2 km. in the Eastern Voievodships. To measure the neglect in road construction in Poland it is sufficient to give some data concerning the highways of importance which have not been paved up to the present. Of the total length of 17.397 km. of the State highways there are still 4.335 km. that are unpaved, and of the total length of 49.564 km. of the communal roads 22.582 km. are unpaved; most of the earth roads are in former Russian Poland. The construction of roads is a State necessity, an absolutely indispensable factor for the development of the country and should be completed within ten to fifteen years. As since the restoration of Poland, that is from 1918 to 1925, only 1.320 km. of hard surface road were built, it is certain that the rate of building should be speeded up if the task is to be completed within the specified time; but even then the condition of Polish roads will be far behind many Western European countries.

With the road construction problem is closely linked up that of putting into order the streets and open places in towns, the surface of which, particularly in small towns, leaves still a great deal to be desired. About 80 to 85 per cent of the surface of streets and open spaces require modern paving and this represents, for the total number of Polish towns, an area of about 347 sq. km.

In the sphere of suburban and local communications, conditions are not much better. There are no fast railways in any Polish towns and no underground lines. For the most part the means of communication in large towns are tramways and motor buses; the latter are little developed. Eleven towns possess tramways. Towns so extensive as Wilno (178.000 inhabitants), Białystok (77.000), Częstochowa (95.518), Lublin (94.000) and Radom (62.000) do not possess tramways up to the present. If, as is the case in Western European countries, towns with 30.000 inhabitants were to be provided with tramways, 14 Polish towns should be equipped with this means of street communication. In addition, the problem of the establishment of motor bus communication merits also close attention and is ripe for solution.

The unions of self-governing units are fully aware of the importance of road construction and of the means of communication for the development of the country as a whole, and that is why the bulk of the money devoted to investments is utilised for these purposes. Unfortunately the money available is inadequate as the most pressing needs in this domain which are to be satisfied within the next three years are estimated to involve an expenditure of £ 469 million.

The construction of buildings for elementary and lower schools is in the opinion of self-governing units the next important problem. The position is best illustrated by the figures showing the number of class-rooms situated in ordinary dwelling houses. Only about one half of the elementary schools

possess their own premises; 11.395 schools occupy 22.723 class-rooms which are not adapted for this purpose. Similarly as in many other aspects of the housing problem, the Voievodships situated in former Russian Poland are the worst off as only one-third of the class-rooms are in their own premises. During the period from 1921 to 1925 only 1.154 school buildings with 2.887 rooms were completed; one half of these buildings were created with the help of the State, and the remainder by the self-governing units themselves. At the end of 1925, there were a number of new buildings with 2.167 rooms under construction. According to the estimates of the self-governing units, about £ 299 million are required for the realisation of the school accommodation programme which is to be completed within three years.

Despite the difficult financial situation of the self-governing units, resulting from the greatness of the tasks with which they are confronted, they spare no efforts in trying to satisfy the needs for public utility works. Special stress is being laid on the question of lighting, and that is why the erection of electrical power stations is generally regarded as being of paramount importance. Not infrequently this expenditure is included in the budgets. For this reason the number of permits authorising the building of electrical power stations grows from year to year. Despite the intense movement in that direction there were in Poland, in 1925, only 309 electrical power stations owned by municipalities, 230 owned by private interests and 103 owned by various electrical railway and tramway companies.

The number of permits issued was: in 1926 — 16, and in 1927 — 23, of which two were in respect of large plants. The investment movement in this branch of production is in evidence throughout the country, and especially in the Central and Eastern Voievodships.

Less interest is displayed in the building of gas-works, despite the fact that Poland, at the time of its restoration, had only 137 of them; the bulk of this number, that is 105 were in former German Poland, 19 in former Austrian Poland and 12 in former Russian Poland of which 7 were public undertakings and the remaining 5 were in private hands. It is seen that the number of gasworks in the Central, Eastern and Southern Voievodships was, and is still, very small indeed, despite the fact that a number of plans were prepared by Polish engineers long before the outbreak of the war. They were to be built in most of the large towns. It is not surprising therefore that gas consumption in Poland is only a fraction of what it is in other progressive countries. Thus, while in Poland the consumption of gas per inhabitant per annum is from 5 to 6 cub. m., the corresponding figures in Belgium and England are 157 and 173 respectively. The rapid progress made in Western Europe and in the United States of America gives an idea of the investment possibilities in this field in Poland and the prospects for the future investor.

Among the interesting capital investments likely to prove good paying propositions and involving

considerable expenditure are abattoirs, bakeries and market halls. Of late the self-governing units have paid a great deal of attention to these undertakings which is corroborated by the agreements between a whole range of Polish municipalities and Messrs. Ulen & Co. as well as the credits granted by the Bank Gospodarstwa Krajowego for these purposes.

The extent of the needs for electrical power stations, gasworks, abattoirs, bakeries, market halls, &c. can be gauged by the expenditure which is estimated at $\text{Z} 41.7$ million for the next three years. This sum includes only the outlay for the most pressing requirements.

number of town dwellers, obtain their supplies from primitively equipped works.

It is seen by these figures that 56.2 per cent of the rural population is deprived of the benefits of public water and draw their supplies from shallow wells which, in many cases, are of doubtful value. Even large towns with a population exceeding 50,000 inhabitants are not all of them equipped with modern waterworks. Of the 12 towns of this category only 7 possess up-to-date waterworks and one town has a small works which only partially covers the water requirements.

It is true that waterworks in Poland are bad,



A NEWLY BUILT MARKET HALL IN PIOTRKÓW

The figures relating to water supply systems and the removal of rain water and snow prove conclusively how great was the neglect of the alien powers in providing even the most elementary public utility works.

The conditions of water supply in Poland are most unsatisfactory especially in small towns and villages in the Central and the Eastern part of the country. According to data compiled by the Health Department, there was, in 1918, in former Russian Poland one public well per 2,000 inhabitants and one private well per 4,800 inhabitants. The state of water supply installations is really pitiable. Of the 615 towns with a population of 6,418,000, only 105 possess a public water supply; in 29 of the latter the water supply arrangements are of a primitive character and leave much to be desired from the point of view of hygiene. About 2,511,000 town dwellers or 39.1 per cent, are provided with good water and 302,000 or 4.7 per cent of the total

but still worse are the arrangements for drainage and sewage.

Of 615 towns, only 33 with a population of 2,039,000 possess regular sewage and 69 towns with 875,000 inhabitants — a partial sewage system, mainly for rain water. The cleaning of sewers, though not everywhere sufficient, is done only in 22 towns out of 33 possessing regular drainage system. With the exception of Warsaw, none of the towns situated in former Russian Poland were equipped with sewers prior to 1924.

At present the construction of sewers is nearing completion in Częstochowa, Piotrków, Radom and Lublin. These works have been carried out by Messrs. Ulen & Co., New York.

In order to regulate the problems of water supply, drainage &c. in a uniform manner throughout the country, the President of the Republic has issued special prescriptions based on the principles of up-to-date sanitation. The stipulations empower

the Central Authorities to fix the broad outlines upon which the municipalities will have to elaborate plans for waterworks and sewage system and then submit them for approval, as well as the dates by which the construction must be begun. Municipalities enjoy the exclusive privilege of erecting public utility works, but they may grant permits to execute the schemes to private firms or persons; this is of great importance for in this way private capital is not shut out from these undertakings.

The satisfying of the most pressing needs in the sphere of construction and expansion of water supply and drainage systems will involve the expenditure of ₹ 152 million for the former and ₹ 165 million for the latter.

Among the urgent requirements are also included the building and extension of hospitals as the present state of affairs is not satisfactory. Apart from military hospitals there were at the end of 1926, 607 general hospitals with 43,762 beds and 20 establishments for mental cases with 8,968 beds, while the actual requirements are 80,000 and 27,000 beds respectively.

The self-governing units fully realise the hardships resulting from this unsatisfactory state of affairs and for this reason they have allocated a sum of ₹ 150 million to be spent within the next three years on the construction and equipment of hospitals and similar establishments.

Only the most necessary investments in public

utility works and establishments have been dealt with above, and a large number of others which are also of vital importance, such as the building of municipal offices and dwelling houses should also receive careful attention. There is room for large capital investments in public safety arrangements including the fire brigades, also in municipal landed estates in the domain of social welfare, in municipal undertakings, &c.

A close analysis of the needs for public utility works indicates that they can only be partly provided for out of the revenue of the self-governing bodies, for long-term credit, though revived, is still only obtainable with great difficulty. Rapid progress in this domain, particularly in the towns, which, it may be recalled, were subject to ruthless treatment on the part of the alien rulers, depends largely upon the inflow of foreign capital.

As the indebtedness of the Polish self-governing units is very small (the debts of all the Polish municipalities at the end of 1925 amounted to ₹ 234 million and those of the urban self-governing bodies — ₹ 42.4 million) and as the sources of revenue are still very lightly drawn upon, new credits for investment purposes find more than ample guarantees for the payment of interest and principal.

This constitutes a guarantee that foreign capitalists will take an active interest in Poland's public utility works.

SUMMARY OF LAWS, ACTS AND EXECUTIVE DECREES

published in the "Official Journal of Laws of the Republic of Poland" ("Dziennik Ustaw Rzeczypospolitej Polskiej")
from February 15th to March 15th 1928

Amendment of article 152 of the mining law concerning the remuneration of mining supervisors ("Dz. Ust. R. P." No. 16, item 118).

Compulsory purchase of estates of persons residing abroad in connection with the Land Reform Scheme ("Dz. Ust. R. P." No. 16, item 119).

Executive decree concerning the construction of the Herby—Inowrocław railway¹⁾ ("Dz. Ust. R. P." No. 16, item 123).

Regulations relating to the cultivation of tobacco in 1928 ("Dz. Ust. R. P." No. 16, item 132).

Regulations regarding the investment of funds by persons legal, foundations and persons insane, as well as regulations regarding the investment of guarantee sums deposited in connection with public obligations ("Dz. Ust. R. P." No. 17, item 141).

The foundation of the Land Improvement Office for the Polesie marshes ("Dz. Ust. R. P." No. 17, item 143).

The foundation of the Institute for Investigation of Economic Conditions and Prices ("Dz. Ust. R. P." No. 17, item 144).

Partial amendment for the regulations concerning the Postal Savings Bank ("Dz. Ust. R. P." No. 18, item 154).

Regulations concerning the export of gold ("Dz. Ust. R. P." No. 18, item 156).

Customs rebate on unleavened bread ("Dz. Ust. R. P." No. 18, item 164).

The issue of supplementary regulations concerning the combating of infectious animal diseases ("Dz. Ust. R. P." No. 19, item 167; No. 26, item 229).

The authorisation of the Minister of Finance to invest liquid capital in securities ("Dz. Ust. R. P." No. 20, item 168).

Amendment of the Statutes of the Lwów Land Credit Association ("Dz. Ust. R. P." No. 20, item 169).

Prolongation of the import prohibition of wheat and wheat flour, to April 30, 1928 ("Dz. Ust. R. P." No. 20, item 171).

Official quotation of the 5 per cent State Land Rent bonds expressed in gold Złoty, for the year 1927/1928 ("Dz. Ust. R. P." No. 20, item 172).

Postponement of the ultimate term for the submission of Income Tax forms ("Dz. Ust. R. P." No. 20, item 173).

The creation of working capital in connection with the realisation of the Land Reform Scheme ("Dz. Ust. R. P." No. 20, item 175).

Amendment of the Treasury Fines Act ("Dz. Ust. R. P." No. 21, item 178).

Amendment of the law dealing with the payments for mining rights ("Dz. Ust. R. P." No. 21, item 180).

Guarantees of undertakings engaged in the transport of emigrants ("Dz. Ust. R. P." No. 21, item 187).

The number and amounts of the premiums of the 4 per cent Premium Investment Loan and the regulations for drawing ("Dz. Ust. R. P." No. 21, item 190).

¹⁾ See page 188.

Reduction of the cost of foreign passports¹⁾ ("Dz. Ust. R. P." No. 21, item 191).

Supplementary regulations concerning direct railway freight services between Poland and Czechoslovakia, Austria, Hungary, Italy, Switzerland, Yugoslavia and Rumania ("Dz. Ust. R. P." No. 21, item 192).

Amendment of the railway freight tariff ("Dz. Ust. R. P." No. 21, item 193).

Amendment of the Polish-German railway freight tariff ("Dz. Ust. R. P." No. 21, item 194).

Executive decree concerning the construction of the Woropajewo-Druja Railway²⁾ ("Dz. Ust. R. P." No. 22, item 196).

The Parcellation of State Lands Act ("Dz. Ust. R. P." No. 22, item 198).

Amendment of the narrow-gauge railway tariff ("Dz. Ust. R. P." No. 22, item 201).

The Building and Settlement Law ("Dz. Ust. R. P." No. 23, item 202).

The allocation of lands for afforestation ("Dz. Ust. R. P." No. 23, item 203).

Amendment of the Water Transport Law ("Dz. Ust. R. P." No. 24, item 205).

Afforestation of grounds subject to compulsory parcellation ("Dz. Ust. R. P." No. 25, item 210).

The increase of the 5 per cent Conversion Loan, 1924 ("Dz. Ust. R. P." No. 25, item 212).

The foundation of the Journal of Railway Rates and Regulations ("Dz. Ust. R. P." No. 25, item 213).

Amendment of the acts concerning the powers of the Minister of Communications and the organisation of railway offices ("Dz. Ust. R. P." No. 25, item 214).

The obligation to add sesam oil to margarine and other edible fats ("Dz. Ust. R. P." No. 25, item 217).

Partial amendment of the regulations concerning the privileges of the Credit Association of Polish Industry Bonds ("Dz. Ust. R. P." No. 25, item 220).

Transport regulations relative to direct Polish-Russian freight traffic ("Dz. Ust. R. P." No. 25, item 225).

Some amendments to the Customs Tariff nomenclature¹⁾ ("Dz. Ust. R. P." No. 26, item 230).

Amendment of bye-laws of the river port at Tczew ("Dz. Ust. R. P." No. 26, item 233).

Regulations concerning partial suspension of emigration ("Dz. Ust. R. P." No. 26, item 239).

Executive decree concerning the fixing of customs rates in the new monetary unit²⁾ ("Dz. Ust. R. P." No. 26, item 241).

Certificates of origin in connection with the repeal of prohibitions on certain articles³⁾ ("Dz. Ust. R. P." No. 26, item 242).

The redemption of the liabilities of the Treasury contracted during the period from 1918 to 1920 in gold or strong currencies ("Dz. Ust. R. P." No. 27, item 248).

¹⁾ See page 165.

²⁾ See "The Polish Economist" No. 3/1928, page 115.

³⁾ See page 164.

The regulations concerning egg exports¹⁾ ("Dz. Ust. R. P." No. 27, item 249).

Partial amendment of the prescriptions concerning the organisation of the Stock Exchanges ("Dz. Ust. R. P." No. 27, item 250).

The imposition of tax on mineral oil ("Dz. Ust. R. P." No. 27, item 252).

Customs duty drawback when exporting explosives ("Dz. Ust. R. P." No. 27, item 255).

Port dues, cargo charges and pilot fees in Polish ports ("Dz. Ust. R. P." No. 28, item 264).

Regulations concerning the navigation on internal waterways ("Dz. Ust. R. P." No. 29, item 266).

Supplement to the regulations concerning Polish sea-going vessels ("Dz. Ust. R. P." No. 29, item 269).

The conversion of the liabilities of towns and other local governments ("Dz. Ust. R. P." No. 29, item 270).

Certificates of teachers at special trade schools ("Dz. Ust. R. P." No. 29, item 271).

Regulations concerning the statistics of wages ("Dz. Ust. R. P." No. 29, item 275).

Regulations concerning the returns of agricultural production ("Dz. Ust. R. P." No. 29, item 276).

Registration of the bonds of the Imperial Russian Bank of Nobility as well as of the certificates of the Imperial Russian Peasant Bank ("Dz. Ust. R. P." No. 29, item 277).

Regulations concerning the production, sale and storage of ethylic ether ("Dz. Ust. R. P." No. 30, item 281).

⁴⁾ See "The Polish Economist" No. 12/1927, page 487.

PRODUCTION AND TRADE

STATE OF EMPLOYMENT IN FEBRUARY. — An analysis of the statistical returns for the past few years indicates that the month of February was an unfavourable period of increased unemployment and of least activity in practically all the branches of production. In the current year the number of unemployed reached the highest level at the end of January. As stated in our last report, the rate of the growth of unemployment in January diminished, despite the continuance of the slack winter period. During the five weeks ending March 3, the number of unemployed, registered at the Labour Exchanges, declined by 4,284, in spite of the fact that this period forms that part of the winter

season, when operations on the land are suspended, building at a standstill, emigration on a small scale, and when practically all the manufacturing industries are under seasonal depression. It is certain that the preparations for the spring and summer seasons and prospects for good trade favourably affected the labour market in February; the improvement will probably be lasting as the same tendency continues to be evident in March. It should be stated that there is a great deal of optimism concerning the building movement; however, business prospects for certain manufacturing industries and notably for the textile industry were less encouraging in February than in the preceding month. It is also worthy

of note that the number of unemployed in February was smaller than in the corresponding period of last year, which is illustrated by the figures below, which are those for the beginning of the relevant month:

	1927	1928
January	190,140	165,268
February	208,536	179,602
March	213,592	177,388

The comparison of unemployment figures at the end of January with those at the beginning of March, indicates that similarly as in January the metal group shows the largest increase:

	January 1928	February 1928	+ Increase — decrease
mining	19,964	19,814	— 150
foundries	2,754	2,810	+ 56
metal	12,623	12,058	— 565
textile	15,157	15,273	+ 116
building	20,282	20,499	— 83
clerical	17,977	17,940	— 37

In coal mining, unemployment figures rose, though very slightly, despite the large decline in exports and the close of the winter season. In connection with the completion of new wells of importance, drilling activities have been pursued intensively, in consequence of which the number of unemployed declined despite the recent dismissal of workers, due to reorganisation of the work and the introduction of better methods. In other branches the situation is favourable; iron mines have been operating at full capacity and those of potassium salts were doing the preparing for the forthcoming agricultural season.

The number of unemployed miners declined by 150 and represented again about 16 per cent of those at work.

The iron and steel industry continued to work under favourable conditions due to the inflow of orders in connection with the opening of the building season. There was a particularly large demand for pig iron, profiles and ordinary sizes. In the rail and railway accessories departments unemployment was fairly large. Despite continuance of depression on the international zinc market, Polish zinc and lead producers carried on operations as in the preceding month.

The number of unemployed foundry

workers rose slightly by 56 as compared with January, and represented 5 per cent of those at work.

The engineering trades operated under very favourable conditions. Manufacturers of screws, rivets, wire and nails were particularly busy getting ready for the building season. Makers of agricultural machinery and implements for the most part worked for stock, but of late, signs of revival have been noticeable. The number of unemployed workers in the engineering industries declined by 5 per cent and represented 14 per cent of those at work.

The prospects in the textile industry are less encouraging than they were a month ago. This especially concerns the cotton manufacturing branches, and there was a tendency to curtail the output. The woolen manufacturing industry is doing better, in particular the Bielsko area; the number of unemployed textile operatives rose by 116 and represented about 9 per cent of those at work.

The building industry has shown so far little activity owing to unfavourable weather conditions, but the prospects are excellent. The Government building schemes involving an expenditure of z 88 million will favourably affect this season's operations. In February the number of unemployed workers in the industry began to decrease.

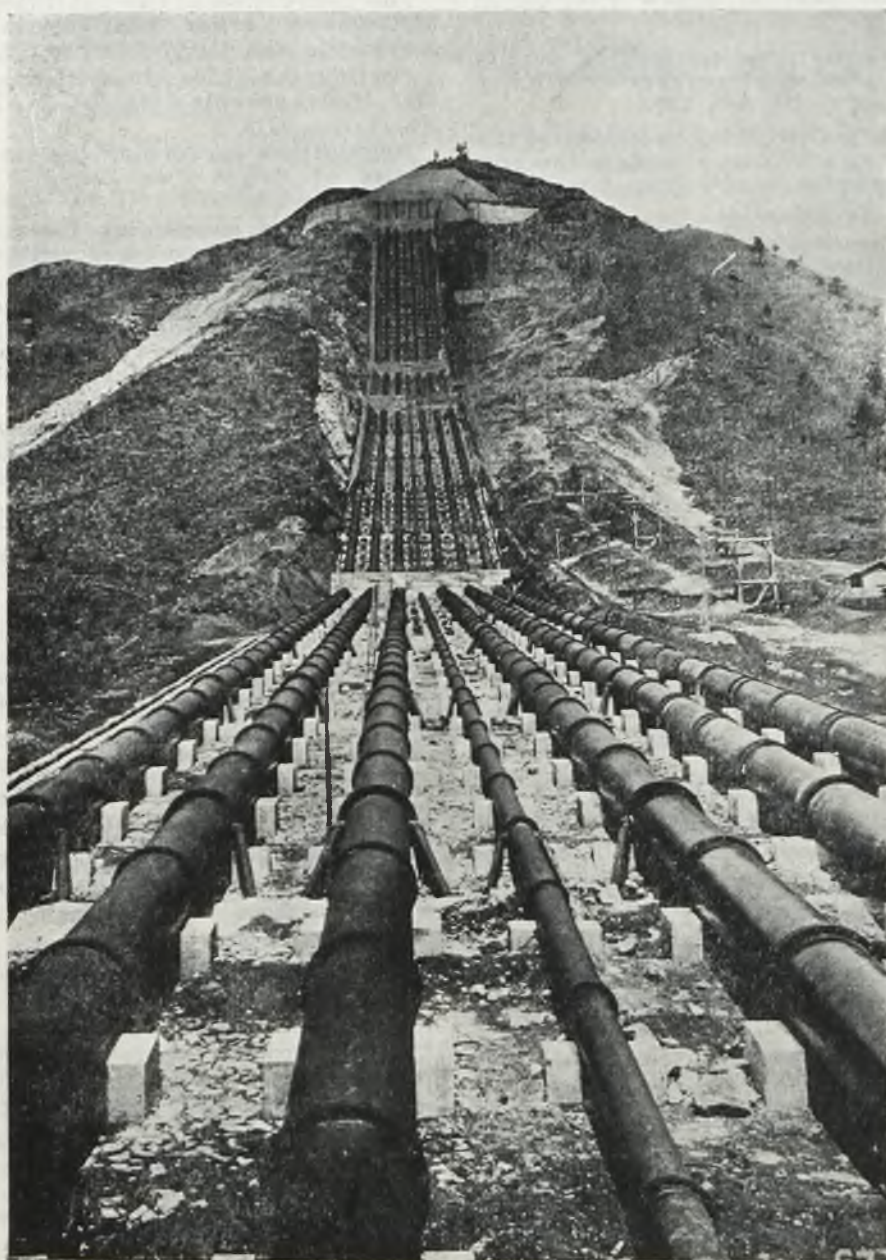
The state of employment improved also in the petroleum industry, in certain branches of the chemical industry (fertilizers) and others of lesser importance. Paper mills are working 24 hours per day. Sawmills are not fully employed owing to the dearth of roundwood.

The position in the clerical worker's group was about the same as in the preceding month, the number of unemployed having declined by 37.

During the period under review, there was a considerable improvement in the employment of part-time workers; in January 1928, the number of people working part-time, was 31,465 and in March 25,565, of which 50 worked 1 day per week, 345—2 days, 1,496—3 days, 7,212—4 days and 17,462—5 days per week.

GRAIN

— In the second half of February the tendency on the grain market changed. The low prices which have held since December 1927, gave way to a strong rise over the whole period under review



"KINUGAWA" PIPE LINE IN JAPAN, CONSTRUCTED BY MESSRS. "FERRUM", POLAND

The average prices in the first half of March showed the following rises in comparison with the first half of February: wheat by 10·3 per cent, rye by 7·9 per cent, oats by 9·9 per cent, feeding barley by 6·7 per cent, and brewing barley by 2·8 per cent.

The rise in prices was undoubtedly influenced by the strong tendency on the international market, while at the same time the home supply diminished and the demand rose in connection with the Easter holidays. Brewing barley prices also rose, though not much until the end of February, when the breweries made large purchases. Prices for cereal and feeding barley also rose owing to the increased prices of oats and bran. There is foreseen a further rise in prices for first quality barley due to a greater demand than in former years for seed. Oats also went up, for in addition to foreign purchases in the Western Voievodships and army supply, farmers have been buying larger quantities for sowing, since in many localities the 1927 oats harvest failed with regard to quality and seed.

Besides the natural impulse to take advantage of the situation, the decrease in the home supply of grain was also influenced by uncertainty as to the state of winter sowings. For although the area under corn has been calculated to be 1·4 per cent greater than in the preceding year and the autumn and winter were favourable for the young crop, yet the rapid changes of weather in the spring and especially severe night frosts in the past few weeks when the earth was without a covering of snow, may have damaged the sowing here and there. According to the calculation of the Chief Statistical Office, based on the reports of agricultural correspondents, the grade for both wheat and rye at the end of February was given as 3·2, or a little above middling. In comparison with the preceding month this estimate was worse by 0·1, and in comparison with February of last year the deficiency is greater, for in that period the grade was given as 3·4 for wheat and 3·5 for rye. It is true that a warm and mild spring may repair the damages already made, yet the uncertainty acts as a brake on the supply of grain within the country.

The prices of wheat on the Polish market were higher than the average American exchange prices by from \$ 0·50 to \$ 0·95, and higher also than the prices in Germany. Rye prices kept to nearly the same level as American prices, but were lower than on the

Berlin Exchange. Prices of oats on the Polish market are higher than on the Chicago Exchange, yet lower than on European exchanges.

The movement of grain prices during the period under review is illustrated by the following statement:

	Febr. 1st—15th		Febr. 16th—29th		March 1st—15th		Percent- ages of differ- ence
	₤	\$	₤	\$	₤	\$	
W H E A T :							
Warsaw	48·06	5·40	50·06	5·62½	53·63	6·02½	+ 7·1
Poznań	45·08	5·07	46·27	5·20	49·43	5·55½	+ 6·8
Lwów	46·60	5·23½	48·77	5·48	51·04	5·73½	+ 4·7
Average price	46·58	5·23½	48·36	5·43½	51·37	5·77	+ 6·2
Berlin RMk.	22·69	5·40½	22·99	5·47½	24·14	5·75½	+ 5·0
Chicago	—	4·75	—	4·84½	—	5·00	+ 3·2
R Y E :							
Warsaw	38·76	4·35½	39·75	4·41	41·36	4·65	+ 4·1
Poznań	38·54	4·33	39·52	4·44	42·24	4·74½	+ 6·9
Lwów	37·51	4·21½	38·70	4·35	40·33	4·53	+ 4·2
Average price	38·27	4·30	39·16	4·40	41·31	4·64	+ 5·5
Berlin RMk.	23·08	5·49½	23·62	5·63	24·68	5·89	+ 4·5
Chicago	—	4·22½	—	4·36½	—	4·58	+ 5·2
B A R L E Y :							
a) Brewing :							
Warsaw	40·05	4·50	40·89	4·59½	42—	4·72	+ 2·7
Poznań	40·23	4·52	40·23	4·52	40·36	4·53½	+ 0·3
Lwów	39·73	4·46½	39·69	4·46	40·98	4·60½	+ 3·2
Average price	40—	4·49½	40·27	4·52½	41·11	4·62	+ 2·1
Berlin RMk.	24·48	5·83	24·80	5·90½	25—	5·96½	+ 0·8
b) Feeding :							
Warsaw	36·50	4·10	36·94	4·15	38·27	4·30	+ 3·6
Poznań	34—	3·82	34·13	3·83½	35·67	4·01	+ 4·5
Lwów	32·84	3·69	33·60	3·77½	36·28	4·07½	+ 8·0
Average price	34·44	3·87	34·89	3·92	36·74	4·13	+ 5·3
Berlin RMk.	not quoted		not quoted		not quoted		
Chicago	—	4·19	—	4·35	—	4·27½	— 1·7
O A T S :							
Warsaw	35·55	3·99½	37·07	4·16½	39·58	4·44½	+ 6·8
Poznań	33·46	3·76	34·21	3·84½	36·47	4·10	+ 6·6
Lwów	32·04	3·60	33·19	3·73	34·99	3·93	+ 5·4
Average price	33·68	3·78½	34·82	3·91	37·01	4·16	+ 6·3
Berlin RMk.	20·69	4·92½	21·75	5·18	22·47	5·36	+ 3·3
Chicago	—	3·77	—	3·79	—	3·94	+ 4·0

The corn trade during the first six months of the fiscal year 1927/28 gave an unfavourable balance of gold Fr. 8,033,000 and only barley showed a constant surplus of export over import, while the other grains were unfavourable: wheat import was constantly greater than export, and rye showed favourable balance only during September, October and November. During the same period

of the fiscal year 1926/27, only wheat gave a small unfavourable trade balance amounting to gold Fr. 563,000, while the other grains were favourable and the general balance was greater in export than in import, by gold Fr. 25,800,000.

The imports, exports and the differences during the period August 1, 1927 to January 31, 1928 are given in the following statement:

Percentages of difference:

	Imports (in tons)	Exports (in tons)	(in tons)	(in thousands of gold Fr.)
wheat	50 382	4.268	— 46,114	— 13.500
rye	15.400	5.396	— 10.114	— 2.430
barley	929	38.023	+ 37.094	+ 9.148
oats	9.345	3.207	— 6.138	— 1.251

The wheat was exported to Germany (75.8 per cent) and a fairly large quantity was shipped to Sweden; rye went to Germany (94.9 per cent); barley to Belgium (28.4 per cent), Germany (17.3 per cent), Czechoslovakia (5.5 per cent), England (5.1 per cent) and Norway (4.6 per cent); more than half (51.8 per cent) of the exported oats was placed in Germany, the remainder in England (23.9 per cent), Belgium (8.7 per cent), Latvia (5.5 per cent), Holland, Estonia, Austria and Finland.

On the import side, the majority of the wheat supplies was brought from Germany (36.3 per cent), Hungary (32.2 per cent), and smaller quantities from Canada, the United States of America, Sweden, Rumania, Russia &c. Rye was imported during the whole six months period from Germany (38.1 per cent), Russia (11.3 per cent) and Rumania, while larger quantities were received during August from the United States of America (21.8 per cent), Hungary (13.1 per cent), and Canada (8.8 per cent). Barley was brought in almost exclusively from Rumania (88.5 per cent); oats from Germany (86.8 per cent), and in smaller quantities from Rumania, Czechoslovakia and Russia.

The imports and exports of grain during February, compared with the preceding month and the same period of 1927 are given below (in tons):

Imports:			
	January 1928	February 1928	February 1927
wheat	3.400	2.642	10.029
rye	951	468	18.035
barley	47	114	65
oats	1.862	1.497	1.037
Exports:			
wheat	135	394	169
rye	748	1.211	496
barley	7.601	9.030	8.829
oats	314	721	1.291

The above statement shows that the exports of all the grains from Poland increased in comparison with the preceding month, while the total imports of corn declined; the final balance was unfavourable to the extent of £ 2,807.000. This balance, in comparison with the same period of 1927, is an improvement since in February of 1927 the excess of imports over exports was £ 7,660.000.

Excess of exports over imports was shown in February 1928, by rye and barley. Rye was sent almost solely to Germany (99.0 per cent), barley to Belgium (30.6 per cent), Germany (17.8 per cent), Czechoslovakia (9.3 per cent), Holland (10.1 per cent), Latvia (7.7 per cent), Estonia (7.2 per cent), Austria, Switzerland and Sweden. Wheat, exported in small quantities, was sold in Germany. Oats were exported mainly to Latvia (50.6 per cent), Germany (25.9 per cent), Finland (10 per cent), England and Czechoslovakia.

Wheat imports during February were from Germany (71.3 per cent) and Canada (24.8 per cent); rye from Germany (96.5 per cent); barley mainly from Czechoslovakia (67.1 per cent), from Rumania (13.7 per cent), Austria (12.9 per cent), and from Germany; oats came almost exclusively from Germany (99.1 per cent), and very small quantities from Rumania and Austria.

BUTTER

— In the latter half of February there was a strong tendency on the butter market. Owing to increased consumption on the home market due to Lent and large sales for export this commodity was fairly scarce. This situation prevailed throughout the first half of March and only towards the end of the month did prices of butter show a certain falling off. On the whole, the supply of butter in March was satisfactory and the increase in prices is to be attributed mainly to the rise in quotations on foreign markets.

The movement of prices of butter in the second half of February and the first half of March is illustrated below (per kg.):

	February 15th-29th		March 1st-15th		Percentages of difference
	£	\$	£	\$	
Katowice	6.75	0.76	7.10	0.80	+ 5.2
Lublin	6.90	0.78	7.00	0.79	+ 1.4
Lwów	6.70	0.75	7.10	0.80	+ 6.0
Poznań	6.80	0.76	7.00	0.79	+ 2.9
Sosnowiec	7.00	0.79	7.30	0.82	+ 4.3
Warsaw	7.10	0.80	7.10	0.80	—
Wilno	7.10	0.80	7.50	0.84	+ 5.6

Exports of butter effected in February amounted to 644 tons valued at £ 3,835.000, as against 681 tons valued at £ 3,900.000 in the preceding month. As usual, the bulk of exports was forwarded to Germany which absorbed 90.2 per cent of the total quantity for butter placed abroad. Smaller quantities were absorbed by England (5 per cent), Sweden (4.3 per cent), Denmark, Czechoslovakia, Austria, Belgium and other countries.

EGGS

— The second half of February and the beginning of March were characterised by a further fall in prices on the egg market. The prevailing frost and snow falls did not exercise any influence on the prices, as egg production kept on increasing and the supplies were maintained at a satisfactory level. Wholesale dealers in anticipation of decline in the prices made purchases on a small scale just to cover their needs. The weak demand on the part of foreign markets also contributed towards the decline of prices. Only in the second week of March the situation changed radically. Intense frosts adversely affected the production and the transport of eggs, while at the same time the position on the export market has improved, with the result that prices hardened and even showed an upward tendency.

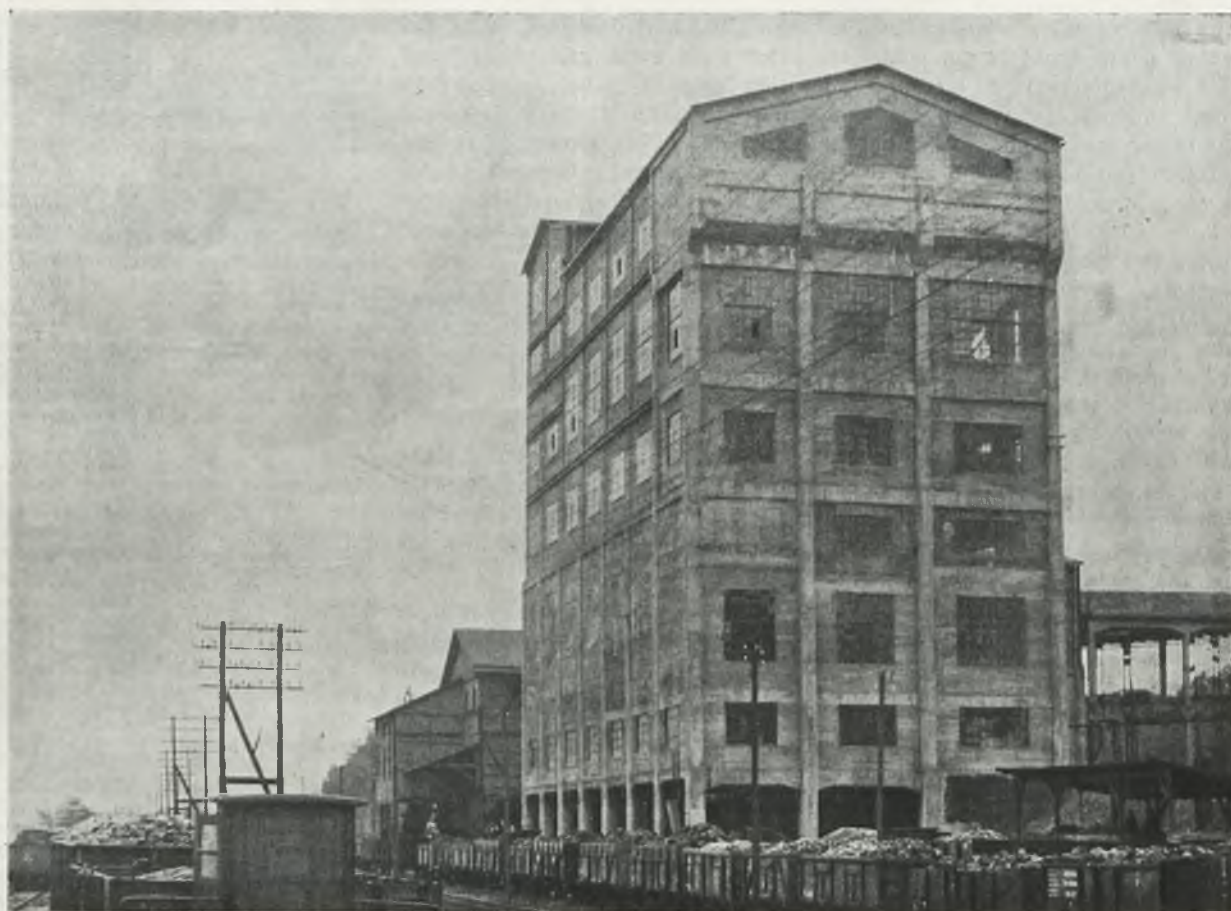
During the period under review the prices on the different internal markets were as follows (in £ per case per 1.440 eggs):

	February 15th-29th		March 1st-15th	
Katowice	204	to 216	195	to 206
Kraków	243	" 252	200	"
Lublin	—	—	175	" 180
Lwów	230	" 252	205	"
Tarnopol	216	"	210	"
Stanisławów	216	" 225	170	" 175

Exports of eggs in February amounted to 2.282 tons valued at £ 8,950.000. Of the total exports 71.8 per cent were forwarded to Germany, 14.9 to Austria, 6.1 to England, 6.1 to Czechoslovakia and smaller quantities to Switzerland and Italy. Imports of eggs were on a small scale as they amounted to 25 tons valued at £ 78.000. The bulk was supplied by Latvia and Germany.

THE NEEDS OF EGG CO-OPERATIVE SOCIETIES. — A conference was held in the Ministry of Agriculture for the purpose of discussing the state of the egg co-operative societies in Poland, and the ways and means of bettering their conditions. Besides representatives of the Ministry of Agriculture, the State Land Bank, the Union of Agricultural Co-operative Societies, and the Central Committee for Poultry Raising, there took part at this conference representatives of Central Co-operative organisations carrying on the egg trade.

The following resolutions were passed: 1) to expedite the issue of a decree for egg standardisation and to work out the executive decrees; 2) to organise the collection of eggs by dairy products co-operatives, small co-operative stores, &c.; 3) to facilitate obtaining of credits at a low rate of interest from the State Land Bank; 4) to organise rational egg sales abroad, where Polish commer-



THE "HOYM" MINE WASHERY, NIEWIADOM GÓRNY, U.P.P. S. (PHOT. S. PLATER)

cial outposts should have men well acquainted with the trade in agricultural products, and to enter into direct relations with foreign wholesale co-operative societies.

Lastly, a discussion took place on methods of improving poultry breeding and egg production in order to meet the export requirements, and the part which should be played by social agricultural organisations in this work.

SUGAR

POST - WAR RECONSTRUCTION OF THE SUGAR INDUSTRY OF POLAND.

—The sugar industry of Poland presents great possibilities of development. Its basic raw material is home-grown, and of excellent quality, Polish coal only is used and Polish labour is solely employed. The production of sugar for the 1927/28 campaign was over 500,000 tons, and there is no doubt that the output will continue to increase. This expectation is based on the large increase noted in home consumption, which rose from 183,000 tons in 1923 to 318,000 tons in 1927. The present consumption per head of population is over 10 kg. per annum, since this figure is much below that of other countries; considering the large increase noted so far, a considerable rise in the home

sales of Polish produced sugar may be expected.

In view of the above facts, the investment programme of the Polish sugar industry may be expected to yield very far-reaching results. The present output of the Polish sugar industry does not call for any urgent quantitative improvement, as not only are the needs of the domestic market fully met, but also a certain surplus is left over for export.

On the other hand, large investments are necessary for the modernisation of factory equipment and installations, especially in sugar factories situated in those parts of Poland formerly under Russian rule. Investments of capital are also required for the growth and improvement of sugar beet production and the transport of the beets; in this case, agricultural investments are necessary, e. g. for the drainage of sugar beet plantation areas, the building of roads, narrow-gauge railways, loading equipment, &c.

These investment plans, from the point of view of the consolidation of general economic conditions, are being realised with satisfactory progress by the Polish sugar industry, within the limits of its financial resources. During the period 1920 — 1926, thirty sugar factories in former Russian Poland laid over 1,000 km. of narrow-gauge railways for the transport of sugar beet. Over

the same period, ten sugar factories underwent complete technical reconstruction and were adapted for the production of white sugar, electrification being introduced on a wide scale. Further, 24 sugar factories in former Russian and Austrian Poland, which had been left in ruins or completely devastated, were rebuilt.

These important results, convincingly testifying to the great vitality of the Polish sugar industry, represent, however, but a part of the investment programme of this important branch of Poland's industries, and still greater tasks await realisation.

TIMBER

— In the Western Voievodships prices of round wood showed in February a fairly marked falling off, whereas in the Eastern Voievodships where the high season begins usually somewhat later, prices had an upward tendency and reached very nearly the normal level, which was due in the first place to smaller business being transacted in the material affected by "*Panolis Flammea*" (in the Poznań Directory only 16 per cent of the round wood was

affected by this disease, whereas in the preceding month about 24 per cent of the sales were affected). As a result of this local increase in prices, the average quotation for round wood for the whole of Poland rose from £ 68.25 to £ 70 — per cub. m.

There is no likelihood that this average price will be increased in the next two months. Of the other varieties of timber only oak showed an upward trend, the remainder having been maintained at practically the same level as in January. On the whole prices of Polish raw material are now on the same level as those ruling on the German market, where, for instance, on the Pomeranian market pine round wood is obtainable at an equivalent of £ 68 per cub. m. loco forest. The average price of £ 55 at the forest for Polish round wood may be regarded as identical with the quotations ruling on the German market for this class of timber. Under these conditions and in view of lower costs of production of sawn materials, the export of round wood from Poland to Germany would become very problematic had it not been for the fact that owing to insufficient working capital Polish saw-mills are compelled to sell a portion of their stocks in order to be able to carry on operations.

For this reason the export of round wood effected in February rose as compared with the preceding month, although it is true that the total volume was much smaller than in the

corresponding period of last year. On the other hand the export of nearly all the other kinds of timber declined both as compared with January last and February 1927. This proves that the stocks on hand from this year's winter campaign are limited and that the forestry law has already given good results.

Business in sawn material continued to be on a small scale. The English market mostly absorbs spruce and fir material in fairly large quantities due to low prices ruling for these varieties.

On the other hand exports of pine sawn material are solely confined to specially ordered sizes as this business leaves larger margin of profit than the export of ready consignments.

Business with Germany showed signs of improvement, and it is generally anticipated that large transactions will be made with that country in the spring and in the summer. Local trade has not revived as yet owing to the delay in the opening of the building season on account of cold weather. For this reason the season for sawn material has not yet commenced. It is not improbable that the month of March will see interesting developments as regards the prices, and it is to be hoped that the present undecided tendency will come to an end in the near future.

The exports of timber in February as compared with January were as follows (in tons):

	January	February
pulpwood	135,673	86,801
pit props	61,158	55,266
logs and stems	94,767	109,072
telegraph poles	3,717	3,075
deals, boards, battens	129,892	104,700
sleepers	8,667	10,121
coopers' ware	2,995	2,193

Prices quoted by the different Directorates during the period under review at truck loading stations were as follows (in £ per cub. m.)

		Jan.	Febr.
Pine logs for saw mills (per cubic m.)	Warsaw	80.—	78.—
	Radom	71.—	71.—
	Siedlce	70.90	65.70
	Wilno	58.—	53.—
	Białowieża	60.—	60.—
	Poznań	63.10 ¹⁾	78.70 ²⁾
	Bydgoszcz	63.—	74.—
	Toruń	80.—	80.—
Pine logs for building purposes (per. cub. m.)	Siedlce	53.50	50.10
	Wilno	45.—	42.—
	Białowieża	52.—	52.—
pine pit props (per cubic m.)	Warsaw	37.—	39.—
	Radom	37.—	37.—
	Siedlce	27.50	27.50
	Poznań	29.80	29.10
	Bydgoszcz	31.—	32.—
	Toruń	29.—	30.—
spruce logs for saw mills (per cub. m.)	Siedlce	43.30	40.20
	Lwów	44.—	44.—
oak logs for joinery (per cub. m.)	Białowieża	115.—	115.—
	Łuck	150.—	155.—
pulpwood (per stacked cub. m.)	Siedlce	30.—	30.—
	Wilno	26.—	24.50
	Białowieża	29.—	29.—
pine fire wood (per stacked cub. m.)	Warsaw	16.—	16.—
	Radom	16.—	16.—
	Siedlce	13.—	13.—
	Wilno	9.50	9.50
	Białowieża	13.50	14.—
	Poznań	10.80	10.90
	Bydgoszcz	15.—	14.50
	Toruń	16.—	16.—
spruce fire wood (per stacked cub. m.)	Lwów	11.—	11.—
beech fire wood (per stacked cub. m.)	Lwów	13.—	13.—

TIMBER INDUSTRY POSSIBILITIES. — Poland has great wealth in the 9 million hectares of forest area, of which only 11 per cent is not easily accessible and difficult to exploit. The yearly timber growth is estimated at 20 million cubic metres, of which at present home consumption is from 8 to 10 million, the remainder being exported. At the present moment the Polish timber industry is mainly concerned in the production of round timber (raw) and the more primitive forms of sawn wood, such as boards, deals, railway sleepers. Very much worse is the condition of the development of the higher forms of mechanical and chemical timber transformation. Although the saw-mill industry is well developed, there are too few factories making plywood, veneers for bent-wood furniture, cellulose, wood pulp and dry distillation works, although in certain of these branches a start has already been made which is developing normally and healthily. In this direction there is serious need of capital investment which will return good interest for the following reasons: the capacity of

¹⁾ 24 per cent of which affected by the "Panolls Flamea".

²⁾ 16 per cent of which affected by the "Panolls Flamea".



SPRING IN THE WILDERNESS (PHOT. J. BULHAK)

the home market and the possibility of export.

An interesting factor in these possibilities is the utilisation of water power from the Carpathian Mountains, which problem has been carefully studied and executed in part.

There are in Poland about 1,500 saw-mills which require bringing up-to-date, mainly as regards their efficiency in handling raw material; their number should also be increased in the Eastern Voievodships, where the forest wealth is great. At present, these areas have an average of only 1 saw-mill per 15,300 ha and this circumstance creates much unnecessary effort and cost of transportation to western saw-mills. As regards investment of a more general character, the following are the requirements: a) outlay for the regulation of the river and water-way net work, b) extension of the railway system, c) communication and land improvement in the large forest reserve in the Carpathian mountains and in the Eastern provinces, d) development of Polish ports and solution of the problem of the Niemen river and the port of Memel. There are large areas in Poland practically not utilised at present which could well be covered with forests. There is approximately 800,000 ha of such land, and to plant forest thereon will require much labour and considerable capital. To name the definite investment sum necessary for the timber industry is impossible. That the industry is growing and that its prospects are good is proved by the constant inflow of home and foreign capital to this industry.

COAL

— The situation in the Polish coal mining industry in February did not show any signs of deterioration as compared with January despite a considerable decline in sales on the foreign markets. It is worthy of note that local sales increased to such an extent that they covered the decline in exports. The increase in sales on the home market is attributable to the revival of building operations and increased activity at brick works and also partly to the continuance of the cold weather during this month. The decrease in exports was mainly due to the competition on the part of English coal on the Scandinavian markets and also to the decline in demand for coal in Sweden in connection with the strike and lock-out at the Swedish paper mills and cellulose works. Under the influence of these developments, prices for coal f.o.b. Danzig and Gdynia fell markedly. The strike at the brown coal mines in Czechoslovakia had no effect on Polish coal exports effected in February. The situation in the coal mining industry in January in the three coal

basins is illustrated by the following table (in tons):

Coal mining districts	Extraction	Home consumption	Exports	Stocks at pit-heads ¹⁾
Upper Silesia	2,426,000	1,489,000	790,000	903,000
Dabrowa	633,000	398,000	156,000	364,000
Kraków	212,000	177,000	1,000	78,000
Total for February:	3,271,000	2,064,000	947,000	1,345,000
Total for January ²⁾ :	3,454,000	1,963,000	1,016,000	1,429,000
+ in relation to January	-183,000	+101,000	-69,000	-84,000

It is seen from the above figures that the total output of coal in February amounted to 3,271,000 tons, a decline of 183,000 tons or 5.3 per cent as compared with the preceding month. Sales totalled 3,011,000 tons, the increase over the preceding month being 32,000 tons or 1.07 per cent. This increase is accounted for by the rise in the sales effected on the home market to 2,064,000 tons that is by 101,000 tons or 5.15 per cent over the preceding month, and despite the fall in export sales to 947,000 tons that is by 69,000 tons or 6.79 per cent. Owing to the increased sales and a simultaneous decline in output, stocks at pit-heads declined in February to 1,345,000 tons that is by 84,000 tons or by 5.88 per cent. The undermentioned table indicates that coal exports to the Scandinavian and Baltic countries amounted to 402,000 tons that is 82,000 tons or 16.94 per cent less than in the preceding month—January. This decline is accounted for by the falling off in exports to Sweden (by 55,000 tons), Denmark (by 22,000 tons), Memel (by 6,000 tons), Finland (by 5,000 tons) and Lithuania (by 3,000 tons); on the other hand, exports to Norway rose by 7,000 tons as compared with January. Exports to the Austrian Succession States were about the same as in the preceding month and amounted to 420,000 tons. The quantities absorbed by Austria and Hungary declined by 9,000 tons in each case whereas those taken by Czechoslovakia increased by 16,000 tons. The remaining countries absorbed 114,000 tons, an increase of 16,000 tons over January; this increase is accounted for by larger quantities being forwarded to France (by 8,000 tons) and to Yugoslavia, Belgium, Rumania and Danzig. In addition, during the month of February trial shipments were made to South America (1500 tons) and to Greece (550,000 tons). To

¹⁾ After deduction of the coal utilised by the mines themselves, for workmen and correcting the stock on hand.

²⁾ Corrected figures.

the list of consumers of Polish coal a new addition was made, that of Russia, which took 930 tons.

Exports to the different markets effected in January are illustrated in the following table (in thousands of tons):

Destination	1925	1926	1927	1928
	first semester ¹⁾ (monthly averages)		January ²⁾	February
Austria	194	214	192	268
Hungary	36	42	48	64
Sweden	—	144	202	210
Denmark	2	72	97	148
Czechoslovakia	47	41	47	90
Latvia	1	18	29	39
Yugoslavia	8	14	22	4
Switzerland	2	10	19	11
Italy	1	49	126	39
Rumania	6	8	10	7
Lithuania	1	3	6	5
Memel	1	3	2	10
Holland	—	1	—	3
Finland	—	9	9	5
France	—	23	16	30
Norway	—	7	15	43
England	—	37	—	—
Germany	451	1	1	1
Belgium	—	—	12	3
Russia	—	—	6	—
Other countries	—	1	6	—
Total:	750	697	865	980
Danzig	26	37	27	24
Bunker coal	—	38	15	12
Total:	776	772	907	1,016
Export, Germany not included	325	771	906	1,015
Shipped through:				
Danzig	29	225	314	417
Gdynia	—	30	54	104
Tczew	—	5 ³⁾	11	—

The average daily transport despatched to foreign countries in February (24 working days) amounted to 39,458 tons, a decrease of 1,182 tons or 2.91 per cent as compared with the preceding month (25 working days). As a result of the general decline in exports in February shipments through the Polish ports Danzig and Gdynia declined to 458,000 tons, that is, by 63,000 tons or 12.9 per cent as compared with January. This decline was brought about by the delay in obtaining shipping accommodation owing to the prevailing frosts in February. Shipments effected through Danzig amounted to 353,000 tons, a decline of 64,000 tons or 15.35 per cent as compared with the preceding month. On the other hand, the despatch of coal through Gdynia rose during the same period to 105,000 tons or by 1,000 tons. The aggregate quantity shipped through the Polish ports in February represented

¹⁾ The monthly average figures for separate countries have been calculated by dividing the respective figures for the first semester by 6; but in fact, these figures were reached for the exports of coal to Holland—during 2 months, to Finland—during 5 months, to Norway—during 4 months. The exports to England date since June, in which month they amounted to 221,000 tons. Export to Russia was during 2 months.

²⁾ Corrected figures.

³⁾ Average quantity for 6 months; this figure has been calculated as explained in note No. 1; exports via Tczew lasted only 4 months.



COAL CARRIERS AT A SILESIA MINE (PHOT. S. PLATER)

48.36 per cent of the total exports (in January 51.28 per cent).

In connection with the above mentioned fall in output the number of idle days rose, though very slightly.

The number of workmen employed at the mines at the end of February was 112,498, a decrease of 102 over the preceding month.

The number of registered unemployed miners was 19,814 as against 19,964 in January.

The output per workman per day rose to 1.277 kg., i. e., by 31 kg. or 2.49 per cent.

Wages were maintained at their previous level. Negotiations for an increase are in progress. The home and export prices to countries within the Coal Convention (Austria, Hungary and Czechoslovakia) remained unchanged. On the other hand, export prices f.o.b. Danzig and Gdynia for the Scandinavian and Baltic countries, as already mentioned, experienced a fall and fluctuated around 12.3 to 12.6 per ton for large Upper Silesian coal.

The average wages per day, including supplements and payments in kind, amounted in February to zł 8.53 and in January zł 8.88.

Railway rates for coal transport were not subject to any changes during the period under review.

INVESTMENT NEEDS IN COAL MINING. — Investments in coal mining in Poland should be separated under two headings: direct investments, connected with the development and modernisation of the mines themselves, and indirect investments common in part to a number of other branches of national production, aiming at the development and efficiency of coal sales.

The direct investments have to do for the most part with the modernisation and renovation of mining equipment, the present state of which, as a result of the war and the armies of occupation, in many cases is not up to modern technical requirements, although it stands well in comparison with the mines of other countries. Thus, money must be put into the deepening and sinking of shafts, the installation of new boiler houses, electric power plants

and winding equipment, the construction of mechanical sorters and loaders, and the building of dwellings for the mining personnel &c.

These investment needs, of course, appear in different proportions in the various Polish coal areas. Yet even the Silesian coal basin, which did not suffer from war destruction, estimates its financial needs at a minimum of zł 50 million for the mines and zł 65 million for the coke ovens. The needs of the Sosnowiec-Dąbrowa and Chrzanów-Kraków areas are not yet accurately known. Taking into account, however, that the Silesian basin gives 70 per cent of the total Polish coal production, it must be remembered that the last mentioned two coal areas, severely damaged and financially exhausted by the war, require relatively greater assistance, and their investment needs can be estimated roughly at zł 30 million.

Thus altogether the Polish coal mining industry is in need of new capital to an amount of zł 150 million.

Coming in turn to the matter of indirect investments, for the purpose of developing and making efficient the sales of coal, chief attention must be paid to the small consumption, which increases at a constant yearly rate of only about 7 per cent and at present is about 800 kg. per inhabitant, while in Germany it is 3,000 kg., and in France 2,000 kg.; the further East one goes in Poland, the smaller is the coal consumption. There is no doubt, therefore, that the home market, which in 1927 utilised 24,000,000 tons of coal, will increase. To this end investments are indispensable for the building of additional railway lines, rolling stock and storehouses and canals.

— PETROLEUM

— The output of crude oil, in Poland in February 1928, according to provisional data was as follows (in tons):

Drohobycz district	51,300
Jasło	5,900
Stanisławów	3,485
Total:	60,685

The output of crude oil in the most important Polish basin, the Borysław area, amounted to about 45,000 tons or 1,550 tons per day on the average (in January — 1,528 tons, in December 1927 — 1,443 tons). The above figures show that there was steady improvement in the situation of the Polish petroleum industry which is to be attributed to the completion of new wells, in particular in the Mraźnica area.

Workmen's wages in February were maintained at the same level as in the preceding month. In January there were several conflicts between the employees and employers but they were settled in a satisfactory way; only in one

case a four day's strike was reported. Prices of crude oil and petroleum products remained unchanged, as compared with the preceding month.

The Petroleum Syndicate paid \$ 20.5 to \$ 21 per ton for Borysław standard crude; thus, the price of crude oil is stabilised, which greatly facilitates the calculation of costs for both refiners and dealers. This price leaves also a fair margin of profit to both the producers and the refiners.

The situation in the petroleum industry in January was on the whole favourable and the output was increased owing to the completion of the new wells.

The refining industry worked under similarly good conditions, the throughput of crude oil having reached a fairly high level. The volume of exports showed also an increase.

In view of a certain decline of consumption on the domestic market, due to the close of the winter season and the increase of throughput, stocks of petroleum products at the refineries augmented, as compared with the preceding month.

The output of crude oil in January is given below (in tons):

Drohobycz district	54.141
Jasło "	6.296
Stanisławów "	3.485
Total:	63.922

In the Drohobycz area the gross amount produced was as follows: Borysław standard crude — 47.522 tons, and special brands — 6.619 tons. Compared with December last, the output of crude oil in Borysław rose by 3.000 tons. This increase, as already mentioned, is to be attributed to important wells being completed at Mrażnica. In connection with the successful drillings in the last named area increased prospecting activity is reported to be taking place in the Western portion of Mrażnica. Arrangements are also being made for the drilling of new bore holes by the larger firms in new territories and at old shallow mines for the purpose of deepening them.

The stocks of crude oil at the end of January at the storage companies and mines were as follows (in tons):

Drohobycz district	5.451
Jasło "	40.403
Stanisławów "	3.675
Total:	49.529

that is, 5.170 tons less than at the end of December last. Stocks of Borysław Standard crude held by storage companies amounted to 26.070 tons, a decrease of 4.489 tons as compared with December

last. The stocks declined owing to increased activity at the refineries.

The number of workmen employed at the wells together with auxiliary plants, such as electrical power stations, gasworks and workshops, was at the end of January 11,123, or by 460 less than at the end of December.

During the period under review a number of workmen were dismissed owing to the finishing of preparatory work and the passing into production of the newly completed wells.

The gasoline industry made further progress. The throughput of natural gas amounted to 20,474,000 cub. m., which gave 2.561 tons of gasoline (in December 1927 — 2.476 tons).

The aggregate output of natural gas amounted to 43,920,000 cub. m. The consumption of gasoline by the local refineries which used this product as an admixture to heavy benzine, was 2.524 tons, and exports, mainly to Czechoslovakia, amounted only to 59 tons.

There were 18 gasoline plants in operation employing 173 workmen (16 at Borysław and Drohobycz and two at Bitków). On the whole the gasoline industry worked under normal conditions; prices were maintained at their previous level (about \$ 53 per ton).

The extraction of ozokerite amounted to 63 tons, stocks on hand — 185 tons, and exports, mainly to Germany and France — 44 tons.

The number of workmen employed in the mining of this product was 428.

The situation in the petroleum refining industry in January is illustrated by the following table (in tons):

throughput of crude oil	63.780
output of petroleum products	57.099
home consumption	31.578
exports	21.429
stocks of petroleum products on January 31st	177.376
stocks of crude oil at refineries	34.680
number of workmen employed in refineries	4.836

The throughput of crude oil exceeded its output in Poland, so that the stocks of this mineral declined considerably. Local consumption of petroleum products also decreased as compared with the preceding months, as a result of the close of the winter season. The consumption of kerosene amounted to 15.552 tons, lubricating oil — 4.816 tons, gas oil — 4.420 tons and benzine — 3.914 tons.

Exports of petroleum products have been maintained for some considerable time at a level of about 20.000 tons per month.

The month of January saw a certain improvement in this respect as the volume of consignments of benzine rose by 1.700 tons and those of gas oil and paraffine wax by 1.710 tons and 490 tons respectively. The exports of the different petroleum products in January were as follows (in tons):

benzine	4.549
petroleum	4.221
gas oil	5.248
lubricating oil	1.544
paraffine wax	3.248
other products	2.619
Total:	21.429

The distribution of exports according to destination is given below (in tons):

Czechoslovakia	7.782
Austria	3.613
Switzerland	564
Germany	1.508
Other countries	1.942
Danzig	6.020
Total:	21.429

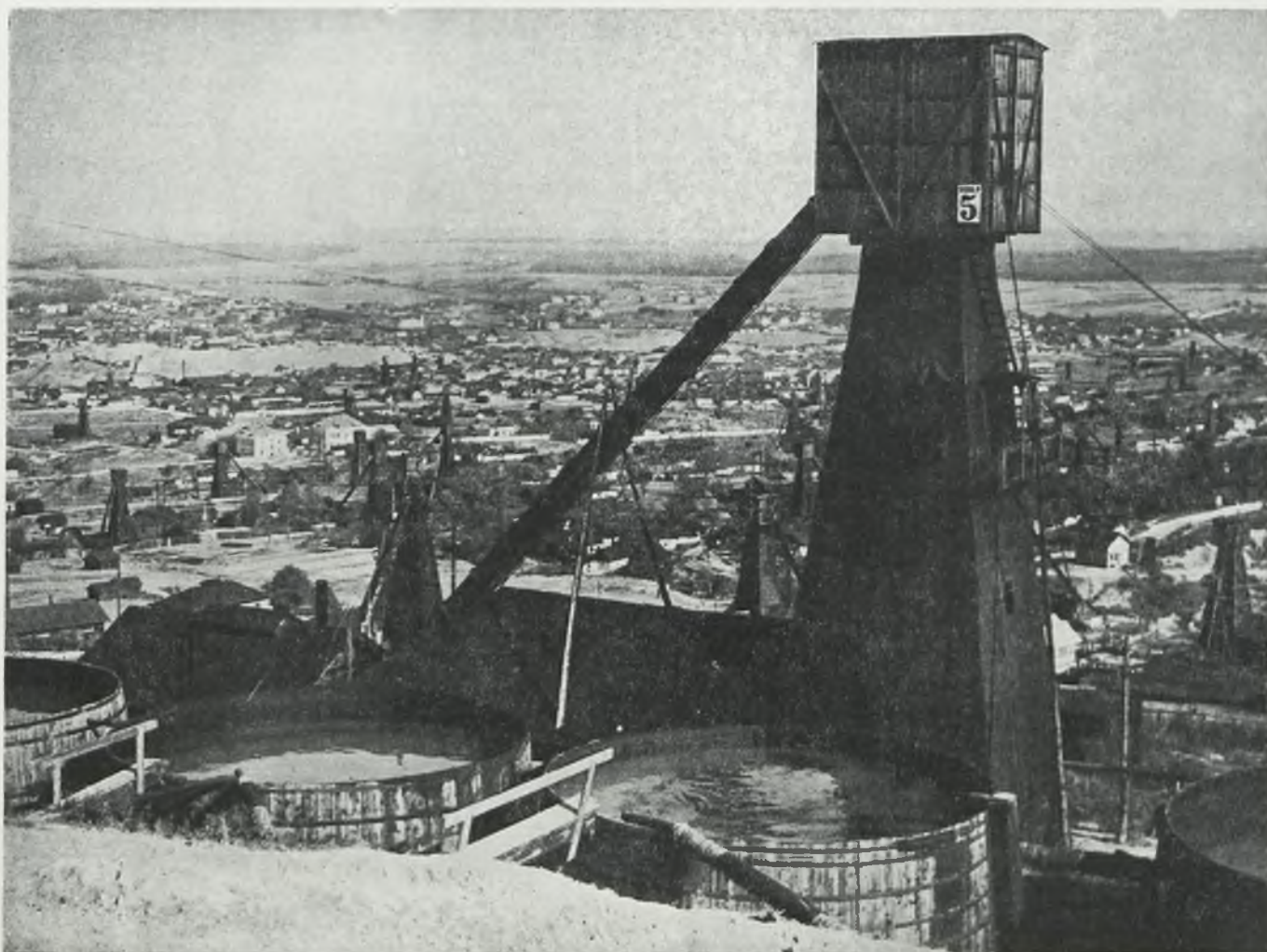
The stocks of petroleum products increased in January which is a usual occurrence at this time of the year, and were as follows (in tons):

benzine	20.734
petroleum	18.336
gas oil	18.647
lubricating oil	33.227
paraffine wax	4.469
other products	81.963
Total:	177.376

A comparatively large increase of about 3.000 tons was reported in the case of raw petroleum oils, and of about 2.000 tons in the case of gas oil. The stocks of petroleum products at the end of December last amounted to 170.760 tons.

INVESTMENT NEEDS IN THE PETROLEUM INDUSTRY. — The basic factors which affect the programme of petroleum investments are: 1) the constant increase of consumption of refined products on the home market, and 2) the undoubted exhaustion of traditional oil beds; therefore, the most important part of the programme will be the extension of prospecting and the increase of output.

Home consumption calculated per inhabitant for all products (gasoline, kerosene, oils and paraffine wax), has, up to now, been increasing rather slowly. The average consumption in 1924 was a little above 9 kg. and in 1927 it had risen to 12 kg. Thus, it has been considerably smaller than in other European countries, which could be described as the result of the general financial and economic difficulties of the State. Small use has been made of motor tractors and there has been little aviation and automobile traffic, but on account of the improvement in the economic situation of the country, which is becoming more apparent day by day, there is an increasing demand for the finished products of the petroleum



BORYSŁAW, — THE PETROLEUM CAPITAL OF POLAND (PHOT. S. PLATER)

industry, and this demand will augment at an ever growing ratio.

The refining industry in Poland is sufficient, especially as regards the amount of its output. Of course, capital is required for the modernisation of equipment, but that is a constant necessity in every up-to-date business, and a steady improvement is always taking place in the refining industry. One of the refineries is preparing a vacuum installation for making machine oils. Adaption and renovation is always taking place.

However, as already mentioned above, it is upon prospecting and the increase of the crude oil output that the main stress will be laid. In spite of financial difficulties, drilling has continued without cease, its intensity varying with the economic situation of the country. The period of the currency inflation was favourable to the industry and, in 1924, 246 wells were being drilled; in 1925, when the currency became stabilised, for the first time the number of drillings fell off to 194, and rose again in November 1927 to 221. These drillings are carried out with the aid of home capital, which in the form of a joint stock association, amounts to about zł 184 million.

The Polish Government has also come to the aid by means of a decree for the promotion of oil drilling. This decree appeared in the "Dz. Ust. R. P." (Journal of Laws, Acts and Decrees of the Polish Republic) at the end of November 1927. It grants special facilities to induce test drilling. Thus, enterprises which within 10 years from the publishing of the Presidential decree begin the above mentioned drilling are granted, among others, the following facilities:

- 1) freedom, for the above period of time, from all State taxes on the capital invested in the drilling;
- 2) freedom, for a period of ten years from the moment when the first test well comes into production, from Production Income Tax for all wells drilled within a radius of $\frac{1}{2}$ km. from the original (Art. 1).

The prohibition of export of crude oil is suspended for a period of ten years for 50 per cent of the oil produced from the above mentioned wells.

The Minister of Industry and Commerce is authorised to free, on State-owned petroleum areas, the production of the above mentioned wells from the so-called "brutto interest" due to the Treasury.

At present, in connection with the formation of a petroleum syndicate, there is being organised, on the initiative of the Government, a special Drilling Company which will invest large sums (at the beginning about zł 4 million per year) into pioneer drilling and geological surveying.

It must be emphasised that the drillings completed in the last years show that there exist possibilities of discovering new beds and reviving old oil-bearing areas. At the beginning of January 1928, a well was drilled in Mraźnica, which at a depth of 1,467 metres gave a natural flow of 10 cisterns of oil per day and about 35 cub. metres of gas per minute. There have already been several similar drillings.

Financial investment will decide the future of the oil industry in Poland.

THE PETROLEUM SYNDICATE. — It may be recalled that the petroleum industrialists, members of the Polish Petroleum Syndicate, undertook to submit to the Minister of Industry and Commerce by January 31st, resolutions concerning the foundation of a mutual drilling and prospecting undertaking, the object of which would be the promotion of petroleum prospecting

work in Poland; they also agreed to organise this undertaking before April 15th 1928. The first of the requirements was filled as the petroleum industrialists submitted in due time to the Minister of Industry and Commerce a draft of the Statutes of the new undertaking named the "Pionier" Ltd. for approval.

After certain modifications of the Statutes the draft in question will probably be approved by the Minister.

IRON

— The situation in the iron and steel industry in February was similar to that in the preceding month although, it is true, the volume of orders was somewhat larger in connection with the forthcoming spring and the opening of the building season. The output of iron and steel foundries declined, due to the smaller number of working days in February (24) than in the preceding month (26). There was a considerable decline in pig iron output but the iron mines continued to work on a large scale and made further preparation for intensive work in anticipation of brisk trade. There is every reason to believe that the position will become still more favourable as home consumption is steadily increasing; in addition, the prospects for exports have also been good of late, which is confirmed by the rise in prices on the European iron and steel market. The work of mines as well as imports and exports of iron ores effected during the month are illustrated by the following figures (in tons):

Monthly av. for	Extraction	Imports	Exports
1927	44,947	59,129	7,538
January 1928	59,900 ¹⁾	45,446	10,710
February	59,684 ²⁾	41,164	8,833
February 1927	36,128	53,982	3,965

It is seen by the above figures that the output of iron ores declined by 216 tons or 0.36 per cent as compared with January. Imports of ores declined by 9.4 per cent during the same period. The volume of exports declined by 25 per cent as compared with January.

There were 32 mines in operation of which 29 were producing. Two new mines were opened and one suspended operations. In the near future operations will be revived at three mines which suspended operations owing to the prevalence of cold weather.

The following table illustrates the situation prevailing in iron ore mining in February as compared with January, 1928, and December, 1927:

	Number of mines:	Number of workmen:	Output per workman per month (in tons)
	operated	productive	total
December 1927	32	29	6,720 ¹⁾
January 1928	31	28	6,934 ¹⁾
February	32	29	6,983 ²⁾
		employed in iron ore production	
December 1927			6,690
January 1928			6,898
February			6,947

It is seen that the productivity per workman per month declined slightly as compared with January despite the fact that the daily extraction showed an increase; this is to be attributed to the increased number of workmen who were employed mostly in preparation work without giving immediate output.

During the period under review the iron foundries obtained large orders for rails from the Government in addition to important indents from private concerns. According to the statistical data of the Syndicate of Polish iron and steel foundries, not embracing piping and their own consumption, orders obtained totalled 67,285 tons as against 44,165 tons in January, the increase being 52.4 per cent. Of the above mentioned quantity Government orders were 22,941 tons (in January 20,293 tons), and privately placed orders 44,344 tons (in January 31,242 tons). Of the orders received from private interests, 27,064 tons were from wholesale dealers (in January 19,770 tons) and 17,280 tons from industry (in January 11,472 tons). These figures show that the volume of orders received from private interests rose by 41.8 per cent and that received from the Government rose only by 13 per cent. The output of pig iron and steel declined in January whereas that of rolling mills increased, which is illustrated by the following table (in tons):

	Pig Iron	Steel Ingots	Rolled products	Number of work- men em- ployed
Monthly av. for 1927	51,515	103,685	76,765	43,968
January 1928	59,105 ¹⁾	104,281 ¹⁾	75,013 ¹⁾	46,072 ¹⁾
February	54,572 ²⁾	102,383 ²⁾	82,071 ²⁾	47,283 ²⁾
February 1927	42,633	94,157	65,578	41,433

These figures indicate that the aggregate amount of pig iron declined by 4,598 tons or 7.7 per cent as compared with January. The output of steel castings declined by 1,898 tons or 1.8 per cent, and that of rolled products

rose by 7,058 tons or 9.4 per cent as compared with the preceding month — January.

The number of workmen rose by 1,211 or 2.6 per cent due to certain categories of men working 8 hours per day instead of 10.

The problem of an eight hour day is not being discussed because it is clear that for various economic reasons the Polish iron and steel industry cannot introduce it as long as the adjacent German Upper Silesian foundries are operating ten hours per day.

The foundries experienced no difficulties in obtaining the necessary raw materials. Imports of scrap iron in February amounted to 31,854 tons as against 24,679 tons in January, the increase being 29 per cent. Stocks on hand will keep the foundries going for from three to four months.

Exports of foundry products totalled 11,475 tons as against 11,101 tons in January, the increase amounting to 3.3 per cent. The value of the export in February was £ 5,560,000 as against £ 5,529,000 in January. The exports and imports of foundry products in February as compared with January last are given hereunder (in tons):

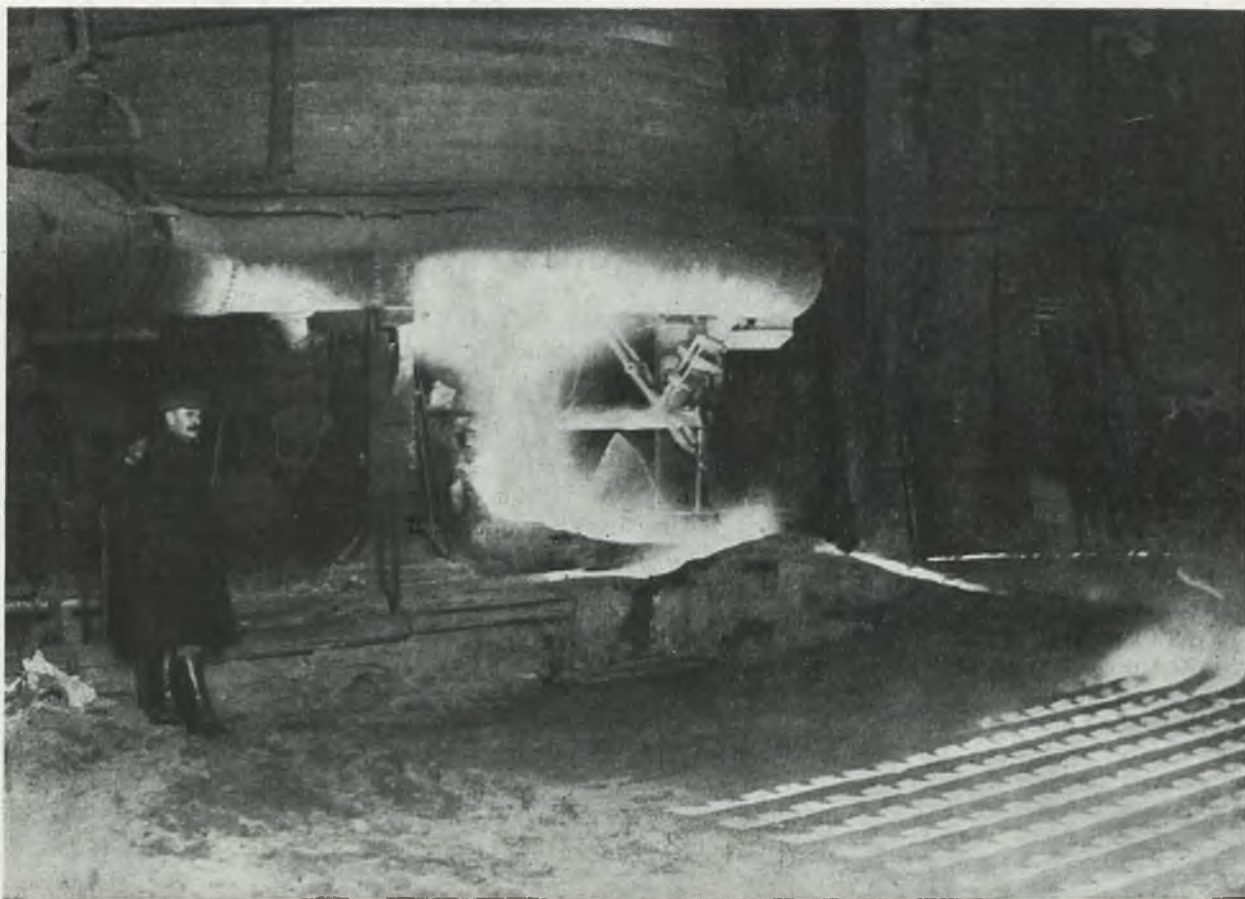
	Exports:			Imports:		
	Jan. 1928	February: 1928	1927	Jan. 1928	February: 1928	1927
pig iron	293	758	1,281	623	682	1,206
rails, iron and steel articles	3,988	4,680	5,445	835	822	903
iron and steel sheets	2,722	2,595	4,651	1,445	1,389	940
pipes	4,093	3,452	2,757	227	76	242

The above figures indicate that exports of the less valuable materials such as pig iron and commercial iron rose, whereas those of more valuable products declined slightly. The excess of imports over exports in February was 8,382 tons as against 7,971 tons in January, an increase of 5.2 per cent.

THE POSSIBILITIES OF DEVELOPMENT IN THE POLISH FOUNDRIES. — The iron foundry industry is one of the basic industries in Poland, the number of workmen, which was 48,460 at the beginning of 1925, rising to 58,563 in January 1928. The ore requirements are increasing very quickly; thus, in 1924, the import of high grade iron ores was an average of 22,200 tons per month, while in 1927 it rose almost threefold, to 58,200 tons. Home production of ores which in 1926 averaged 26,200 tons, was doubled in December 1927 (56,000 tons). The output of rolling mill products is at present 80 per cent of the pre-war figures and is speedily approaching them. Simultaneously the

¹⁾ Corrected figures.
²⁾ Provisional figures.

¹⁾ Corrected figures.
²⁾ Provisional figures.



POURING METAL FROM THE STĄPORKÓW BLAST FURNACE CENTRAL POLAND

home demand is growing tremendously, as is illustrated by the following statement of home sales of rolling mill products and iron in general (in tons):

	<i>Rolled products</i>	<i>Iron</i>
1925	544,000	699,000
1926	631,000	630,650
1927	843,000	910,500

These sales are yet small in relation to the possibilities engendered by the development on a large scale of building investment activity, which in turn is a factor in the further improvement in the general financial situation of Poland.

Viewing, on the basis of the above figures, the programme and needs of investment in Polish foundries, it is at once seen that the needs are widespread and have as their aim the development of the use of apparatus for the better production of basic materials such as coke, pig iron and ores, in bringing up-to-date the steel and rolling mills and broadening the higher forms of the metal working industry. At the same time there is planned an amelioration of the auxiliary apparatus such as electric stations, boiler rooms, and arrangements for the utilisation of by-products and waste. Lastly, there are indispensable investments needed in the building of workmen's dwellings, offices, warehouses &c.

The total sum required — and, in calculating this, the time necessary for execution and the financial possibilities of the country having been taken into

account—is about £ 200 million of which the largest share (about £ 120 million), will go for plant for the cheaper melting of pig iron, and the piecing of granulated and therefore cheaper rich ores. Polish foundries are already carrying on work in this direction.

In the sections for working the higher metals there are planned: new pipe rolling mills, a new zinc foundry, a saw factory, reconstruction of a railway tyre workshop, reconstruction of wagon factories and three welded pipe factories.

The whole investment programme in the Polish foundry industry is based on the tremendous increase of the home consumption of iron and metals in general. The construction of bridges, railways, merchant ships, public utility works, &c., where the present appliances are but a small fraction of what is necessary and what is planned for the coming period — constitute an almost unlimited demand when considering today's production of foundry products. Therefore this branch of Polish industry has before it a period of rapid development.

ZINC AND LEAD

— There was no change of importance in the zinc industry in February 1928. Local sales were on a small scale and about 85 per cent of the output was forwarded abroad. It is clear, therefore,

that even a slight fall in prices on the world market is badly felt by the Polish zinc industry. Prices on the London market in February were so low that only those enterprises which use zinc ores of their own production could work at a profit. In this connection it should be stated that zinc foundries in Upper Silesia possessing no zinc mines are gradually passing into the hands of Companies operating both mines and smelting works; of late zinc smelting works of the Henckel Donnersmark were sold to the Upper Silesian Mining and Zinc Smelting Company which has developed into a powerful undertaking.

The output of zinc and lead ore in its natural and enriched state as well as imports are given below (in tons):

	<i>Extraction:</i>		<i>Imports:</i>	
	<i>ores gross amount</i>	<i>enriched ores</i>	<i>zinc ores</i>	<i>lead ores</i>
Monthly av. of 1927	86,780	31,441	16,388	1,362
January 1928	90,673 ¹⁾	32,640	13,679	1,113
February	88,505 ²⁾	31,860	16,669	1,288
February 1927	83,719	30,100	14,605	1,177

The output of ores in February showed an increase of 2,168 tons or 2·4 per cent

¹⁾ Corrected figure.

²⁾ Provisional figure.

as compared with the preceding month, but owing to the smaller number of working days the average daily extraction during the month was larger by 5.7 per cent. In February there were 12 mines in operation of which 11 were producing and 1 carried out preparation work.

The number of workmen employed rose by 2.2 per cent.

The following table illustrates the work at the mines; the column relating to the number of workmen employed includes only those engaged in productive mines:

Number of mines: Number of workmen: Output per workman per month (in tons):

	operated	producing	total	at producing mines	
Monthly av. for 1927	12	9	7.765	7.171	12.1
January 1928	12	10	7.225	7.067	12.8
February "	12	11	7.388	7.225	12.3

The trial installations for the manufacture of zinc oxide having given good results, the companies concerned began to make further additions in order to increase their output. The production of zinc oxide at the two undertakings which have employed the new process for some time was, in February, as follows (in tons):

	Output	Number of workmen employed
December 1927	397	138
January 1928	460	131
February "	480	137

Zinc and lead foundries carried on operations under normal conditions. The output of zinc and lead in February was as follows (in tons):

Output of:

	raw zinc	zinc sheets	raw lead	Number of workmen employed
Monthly av. of 1927	12,525	1,295	2,405	12,727
January 1928	13,094 ¹⁾	1,071 ¹⁾	2,153 ¹⁾	12,804 ¹⁾
February 1928	12,588 ²⁾	1,457 ²⁾	1,202 ²⁾	12,810 ²⁾
February 1927	10,824	1,019	2,331	12,198

The aggregate output during the period under review was smaller by 506 tons or 3.9 per cent than in January.

The output of zinc sheets rose by 386 tons or 36 per cent and that of lead by 49 tons or 2.3 per cent.

The number of workmen employed in this industry remained practically unchanged. As in January, there were 13 smelting works, four rolling mills, and two lead smelting works in action.

Exports of zinc sheets and refined lead in February as compared with January and the corresponding period of last year, are given below (in tons):

	Raw zinc dust incl.	Zinc sheets	Refined lead	Value of exports (in thousands of gold francs)
January 1928	8,861	991	748	12,303
February 1928	10,341	891	884	13,600
February 1927	8,403	1,149	1,028	14,711

It is seen from these figures that the total output of zinc and lead products in February rose by 14.3 per cent in point of amount and by 10.5 per cent in point of value as compared with January 1928.

METAL INDUSTRY

INVESTMENT PROBLEMS IN THE POLISH METAL WORKING INDUSTRY are calling for a solution to-day on account of the necessity of repairing the devastation of the war. In other branches of Polish industry the war damages have already been repaired. In addition the problem becomes more complicated because the metal working industry under conditions of national freedom must vary its products and invade new spheres of production and must in general develop itself; it must also be continually modernised, to keep its competitive powers.

The development of this industry is going on at a fast rate. The total transactions carried through by the united factories in 1925, were zł 320 million, while in 1927 this sum rose to over zł 500 million. The number of workmen employed is constantly increasing. At the beginning of 1925 it was about 65,000, while it rose in 1928 to

about 85,000 or by over 30 per cent. Many industries and works were only started after Polish independence had been gained; and others, which had started in pre-war days, only then began to develop; examples of these are: the locomotive works, aeroplane factories, automobile factories, electric motor and electric apparatus factories, ammunition and army supply and lathe works. This list alone suffices to show the varied directions in which the metal working industry branched out.

This process has not become exhausted, nor has it come to an end. In a country of 30 million population, which now stands only at the threshold of economic development, the possibilities of growth of the metal working industry are immeasurable. As an illustration there can be taken the possibilities of development of agricultural machinery and implements, mill, distillery and sugar works appliances, all a part of the agricultural structure of the country; then the possibilities of motors and lathes for the timber and textile industry, &c.

Even without calculating the investment needs dictated by the necessity of augmenting export ability, the approximate financial aid required for the development and modernisation of the metal industry is gauged at \$ 15 million. It is a question of long-term credits.

The above description should be completed by a few words on the electrical industry. It is one of the youngest Polish industries because it was begun only after the war. It is developing fast, for the production rose from about 7.7 million kg. in 1925 to about 12 million kg. in 1927.

The capacity of the home market is calculated to be 32 million kg., and the difference between consumption capacity and production capacity is one of the clearest reasons for the possibilities of this industry in Poland.



COURTYARD OF THE MESSRS. CEGIELSKI'S
CAR FACTORY AT POZNAŃ

¹⁾ Corrected figures.

²⁾ Provisional figures.

TEXTILE INDUSTRY

THE POLISH TEXTILE EXPORTING ASSOCIATION LTD.—The Polish textile industry, concentrated for the most part in the territory formerly under Russian rule had its foreign sales market mainly in Russia. Since the war, as a result of the social, political and economic upheaval in Russia, that market has practically ceased to exist as regards the Polish industry, and it was forced to find other outlets.

In order to take concerted action, the textile industry and in particular a group of the largest factories in Łódź, created the Polish Textile Exporting Association Ltd., with its seat in Łódź. The Association has succeeded in entering into relations with many foreign markets, and various Polish textiles are at present exported to many countries where they find ready buyers.

Cotton suitings, cotton quilts and materials of mixed yarns, have been especially successful.

RECONSTRUCTION AND DEVELOPMENT OF THE TEXTILE INDUSTRY.—The textile industry was severely damaged during the war but

has since been reconstructed. It is to the credit of this industry that it rebuilt itself largely out of its own resources, in spite of the fact that it neither regained the machinery and apparatus taken out of the country by the occupying forces of the enemy, nor received indemnity therefor. These losses were great, and it will suffice to mention the following material which was commandeered from Polish textile factories by the German forces of occupation, during the years 1916 — 1918: about 300,000 tons of wool and cotton, about 20 million metres of finished fabrics, 1,300 km. of belting, 1,375 tons of copper and brass machinery parts, about 1,000 electric motors, and other similar articles.

The work of reconstruction and investment proceeded so fast in this industry, that at present it employs 172,000 workmen (in 1925 — 133,000) in all its branches. The degree to which it has been rebuilt is illustrated by the following statement (data for Łódź alone):

Cotton industry

	1914	1927
Fine spinning spindles	1,154,431	1,198,897
Waste spinning spindles	90,384	65,666
Power looms	30,113	25,125

Woolen industry

	1914	1927
Combed wool spindles	353,115	326,196
Ordinary spindles	160,941	85,889
Power looms	8,557	2,686

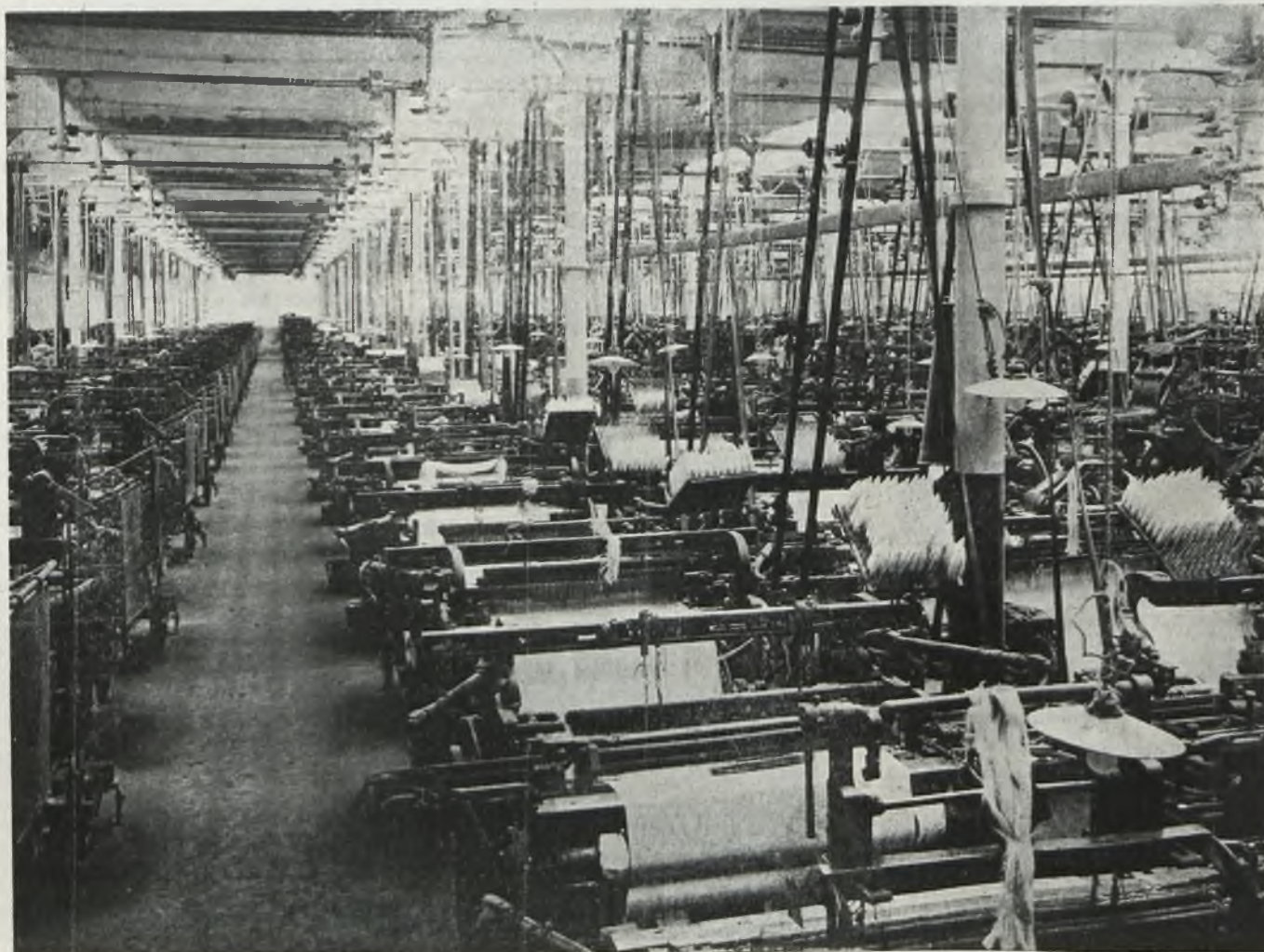
Jute industry

	1914	1927
Spindles	15,745	17,439
Looms	1,140	1,044

It is therefore seen that the material reconstruction of the textile industry, especially in cotton and jute, has advanced well, in some cases surpassing the pre-war level. And not only were old departments rebuilt, but new sections created, and the products more widely differentiated.

The sales of the textile industry are on the increase, both within the country and for export. At present this industry is not in need of large investments, but certain sums are required for renovation and bringing up-to-date part of the machinery and apparatus which are partially worn out and partially antiquated.

It is difficult to name the definite sum required by the industry in order to bring it thoroughly up-to-date. Roughly the investment would amount to \$ 6 million, of which \$ 1,175,000 should be allocated to the clothing industry alone, and \$ 1,200,000 to the Bielsko woolen export industry.



COTTON FABRIC WORKS OF MESSRS. K. SCHEIBLER & L. GROHMAN LTD., ŁÓDŹ

A very sound investment in the textile industry would be the rationalisation of cotton delivery in the sense of bringing about direct contact with the American supplier. This problem entails the creation of a direct steamship route between Polish ports and the ports of the cotton supplying centres, and investments in the handling apparatus of the Polish ports themselves. This question has been receiving careful attention on the part of the parties interested therein.

The interest of foreign capital in the Polish textile industry has been considerable for a long time and to indicate this it will suffice to mention the following: French capital (Żyrardów, Częstochovienne, Allart Rousseau) English capital (Manufaktura Widzewska, Eitingon), Austrian capital (Zawiercie Ltd.). In general, the total amount of share capital engaged in 127 textile companies was, at the end of 1927, £ 320 million, French Fr. 40 million, and Belgian Fr. 4 million.

CHEMICAL INDUSTRY

THE DEVELOPMENT OF THE CHEMICAL INDUSTRY. — The chemical industry in Poland is now in a good state of organisation. It already has a number of first-rate works, employs a considerable and steadily growing number of workmen (in January 1925 — 25,400, and in January 1928 — 35,000, which means an increase of 40 per cent during the three years), and has engaged in it a fairly large amount of capital, both home and foreign. At the end of 1927, there were 102 companies in the industry, of which 98 were local firms with an aggregate capital of about £ 95 million, and 4 were foreign companies registered in Poland.

When it is taken into account that Poland has large reserves of a number of basic materials necessary for the chemical industry, such as coal, potassium salts, superphosphates, wood, &c., and that by reason of its 30 million population it has a very large and as yet unsatisfied market, then it can be seen that there are great possibilities open to this branch of production in Poland. As a single instance, there is given below a statement of the increase in production of artificial fertilizers (in tons):

1924	290,000
1925	515,000
1926	613,000
1927	790,000

The import of chemical products is also increasing, as that of dyes, colours and varnishes rose from 5,240 tons in 1926 to 8,054 tons in 1927, an increase of about 60 per cent; and the imports of several other finished chemical products also showed an increase. This indicates a rapid broadening of the market and therefore investment possibility. In particular, there is a lack of investments in the manufacture of semi-finished organic products, synthetic nitrogen compounds, rubber goods (tubes and tyres for motor cars, &c.). As

regards modernisation of the existing establishments, this is also a good field for initiative, and Poland is doing much in this direction through its own resources. The Chorzów factory is constantly being improved and in the near future will receive electric power from a large new electrical power station which is being built in Łaziska at a cost of Sw. Fr. 15 million. Further investments are being placed in the potassium salt mines in Katusz, the production of which is increasing. Prospecting work is being carried out in the Inowrocław district, where there are great possibilities for potassium salt mining.

BUILDING

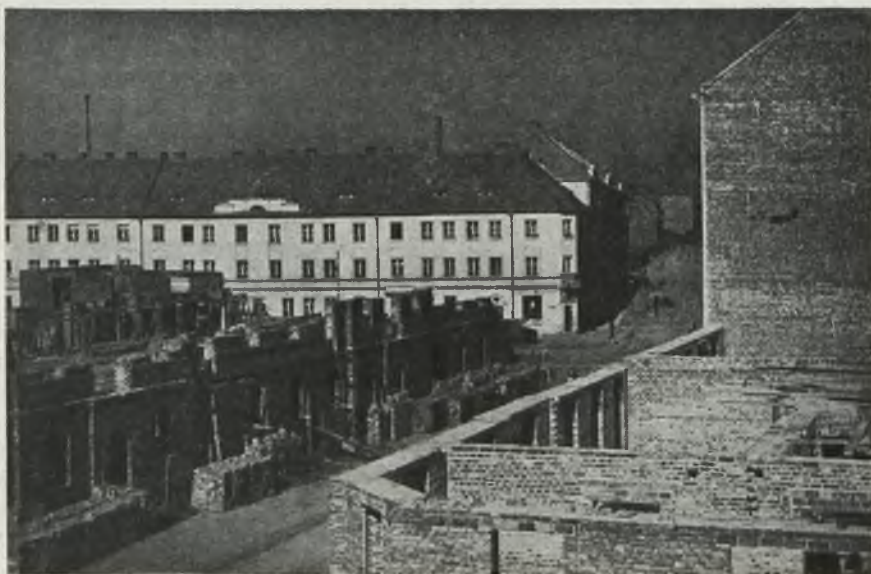
POST-WAR BUILDING IN POLAND.—In the two categories of building, i. e., large public buildings of every description and especially dwelling houses, there has arisen a tremendous task, due, in the first place, to neglect on the part of the pre-war foreign governments, and in the second place, to damages caused by the war. At the end of the war, there was almost a complete lack of public buildings in certain parts of Poland, and even to-day the number is far from sufficient. Everything had to be built, and there were no resources. During the first years after the war, only a part of the requirements was satisfied, although what it has been possible to build, remains a positive achievement in comparison with what was found. A considerable number of school buildings have been constructed, on the railways the greater part of stations, standpipes, warehouses and all the bridges, destroyed or injured during the wars, have been rebuilt; and many new military buildings have risen (barracks, storehouses &c.), while a few of the Ministerial buildings in Warsaw and buildings in the pro-

vincial districts have been erected; on the frontiers, offices for the customs authorities and the frontier guard have also been provided. Every year the State budget contains certain amounts for this purpose, and for the year 1928/29 the sum is about £ 200 million. Also considerable expenditure upon schools and the like is incurred by the self-governing district units. But where there has been so much neglect before the war and so little building done, the need is great and so are the possibilities for capital investments.

There is no doubt, however, that the most important problem of post-war buildings in Poland is that of the construction of dwelling houses in the towns. Here also pre-war neglect is felt, and a great deal of devastation caused by the war, even whole cities being wiped out. Nothing, of course, was done in the way of rebuilding during the war, and afterwards the Tenants' Protection Act which regulated the rents at a very low level, made rebuilding impossible. Furthermore, the population in the Polish cities began to grow amazingly. As a result of all this, the question of homes both for the labouring and the clerical classes is critical.

In Warsaw, for instance, the number of additional homes needed was calculated to be 1/3 of the existing number of dwellings, which would mean the building during 20 years (taking into account the increase of population) of 20,000 homes per year.

Meanwhile the sum available for building was small and it was figured that in Warsaw alone £ 140 million per annum had to be invested (counting £ 7,000 per dwelling), and for the whole of Poland £ 400 million. These sums, however, were not to be found, and consequently the amount of building done in Warsaw so far has been modest: about 12,000 homes have been built in 3 years, while before that time there was practically no building at all.



BUILDING AT WARSAW (PHOT. S. PLATER)

The building of dwelling houses in Poland rests wholly on Government credits. A special fund to this end has been created from a portion of the Government foreign loans, and from the whole proceeds from the Government tax on apartments and vacant lots. This fund is managed for the Government by the Bank Gospodarstwa Krajowego and it is the only source of building credits. Credit is granted to district self-governing bodies, private individuals, and mainly to building co-operatives, of which a large number have been organised since the war. The Bank advances from 75 to 90 per

cent of the planned cost of the building, without taking into account the price of land. Co-operatives are given land by the Government, payment therefor being spread over a long period in the form of rent. In this way, the Bank Gospodarstwa Krajowego has given during the past 4 years, the following sums for building (in thousands of £):

	<i>Credits granted</i>	<i>Credits realised</i>
1924	4,389.1	2,871.8
1925	47,231.3	29,998.7
1926	23,282.8	33,717.3
1927	106,547.8	81,073.6

For the 1928 building season the credits granted by the Bank Gospodar-

stwa Krajowego will probably amount to £ 120 — 150 million, which will suffice for only 40 per cent of the dwelling houses required.

Under such conditions, there are especially good prospects for investments and private initiative. The first trials of mass production of inexpensive homes are now being made, and the application of special systems of building, and the organisation of profit-earning building enterprises. All initiative of this kind is welcomed by the Polish Government, for a solution of the housing problem is one of the Government's chief cares.

MOVEMENT OF PRICES IN FEBRUARY.—After the stabilisation of the Złoty in the middle of 1926, when its "internal" purchasing value was greater than its "external", the internal value gradually fell until it approximated the international level. This process went rather slowly and unevenly for various goods. The last months may be regarded as a period of price stabilisation and cases occurred where certain articles rose to the "outside" level. This was caused by the augmentation of trade which in turn was caused by an increase of home consumption. But the price increase acted as an impediment to home sales, and the situation was further aggravated by an acute shrinkage on the money market. Producers were spurred to increase their output by the rise of home prices, and agricultural output was also greater, but the farmers held back their products and therefore did little purchasing of industrial goods, whereupon a lack of money was felt on the market, which further increased prices.

Wholesale prices have been stabilised since April 1927, and any variations were due to seasonal and "outside" causes. The last months, including February, were characterised by a seasonal depression in trade; turnover was small and production had to go into stock, consequently there was a steady though small decline in prices.

Retail prices, which are always less sensitive, rose more slowly than wholesale. Moreover, the increased trade lowered the handling costs per unit so that often a rise in wholesale prices did not demand any rise in retail prices. Thus, there was a tendency, very important from the national economic stand-point, towards an approach between retail and wholesale prices. During the last months, however,

when wholesale prices began a slight downward movement, retail prices continued their slow upward march, but in February they decreased in sympathy with the wholesale.

The movement of price indexes is given in the following table (January 1914 = 100):

	<i>Wholesale price index:</i>	<i>Retail price index:</i>	<i>Cost of living index:</i>
January 1927	112.8	147.8	116.6
February	114.1	147.8	116.5
March	115.8	147.1	116.0
April	119.4	147.7	117.8
May	120.5	150.0	118.8
June	120.2	149.1	119.0
July	120.9	147.2	115.3
August	120.1	147.2	116.4
Sept.	119.3	149.6	117.2
October	119.6	150.0	119.0
November	120.7	151.5	121.8
December	120.0	151.2	121.0
Jan. 1928	118.6	151.5	120.3
Febr.	117.8	150.3	118.3

From the above it can be seen that the wholesale price index in February diminished by 1.7 per cent and that of retail prices by 0.8 per cent.

The February wholesale index is the lowest for the 11 months period (since April 1927) and only 3.2 per cent higher than in February 1927. Both agricultural products and industrial articles decreased in February. The main cause of price decline in that month was the lowering of prices of animal products, which farmers were more inclined to dispose of than plant products. The deciding factor in animal products prices was the sharp fall in eggs, caused by a quick increase in supply on the home market, since their export increased less rapidly in February and began on a large scale only in March. Other animal products such as pigs (slight upward tendency), meat and milk, did not cheapen, but kept their former level or, as butter, showed a small rise. The rise in grain and products thereof, which was accentuated in March was still feeble in February (the index rose by 0.1 per cent). This

rise was due to a lessening of supplies and an increase in prices on foreign markets.

The following falls in industrial products influenced the February wholesale price index decrease: metals, whose index went down by 1.3 per cent (fall in zinc, lead and tin), textile products by 0.2 per cent (a decline in yarn prices in spite of a slight rise in cotton), and a fall in all chemical products, and certain grades of skins.

The group of grocery products, in connection with the approach of the Easter holidays, indicated a rise of 0.7 per cent.

The index of retail prices showed, in comparison with the first two months of 1927 (which were identical), an increase by only 1.7 per cent. The retail index for February 1928, showed an appreciable rise only in agricultural products (by 2 per cent), while in industrial products it increased by 0.2 per cent. There was a fall in eggs, grain products, meats and soap, while there was a rise in butter, sugar and timber.

The index of cost of living declined in February by 1.6 per cent, thanks mainly to the fall in foodstuffs (by 3.3 per cent).

FAIRS AND EXHIBITIONS

THE POZNAN INTERNATIONAL FAIR, which takes place every spring, will this year be held from April 29, 1928, to May 6.

The Poznań Fair in the spring and the Lwów Eastern Fair in the autumn are the only two regular international fairs in Poland. Therefore the criticism that there are too many fairs, which is a just criticism, does not apply to Poland, which has only two, while there are over 200 a year in Europe.

The fact that the two Polish fairs are well organised and useful, and this applies especially to the Poznań fair, has been generally acknowledged. In particular the International Congress of Fairs, which was held in Lyons in 1927, expressed the opinion that the existence of the Poznań fair which takes place on the frontier between Western and Eastern Europe, is justified.

The virility of the Poznań fair is testified to by its growth: the number of participants in 1927 rose to 1,450, the number of visitors to 100,000, and expeditions came from 15 foreign countries. Business was active, and 92 per cent of the exhibitors were able to conclude transactions and receive orders for their products.

This year's fair is expected to be larger than usual as the following international fair will take place two years hence, because in 1929 there will be held in Poznań an All-Polish Exhibition on a tremendous scale. Therefore, foreign exhibitors are especially anxious to be present at this year's fair.

FOREIGN TRADE

— According to provisional figures of the Chief Statistical Office, the foreign trade balance of Poland for February, 1928, was closed with imports to the amount of ₹ 270,378,000, and exports ₹ 197,823,000, and thus was unfavourable to the extent of ₹ 72,555,000.

Imports remained without change, for a decrease of ₹ 785,000 is relatively of no practical importance. Yet among the different import groups, changes worth attention occurred. Thus, in the first group, that of foodstuffs, there appears a decrease by ₹ 3,440,000, caused by a fall of ₹ 1,130,000 in the imports of wheat flour; also a decrease in edible fats and other smaller items which was not balanced by the rise in several other lesser positions.

The smaller import of foodstuffs is a favourable symptom; favourable also is the increase in imports of animal products, by ₹ 2,313,000, because they consisted mainly in larger shipments of raw hides and raw furs, though there was also a slight rise in finished skins and footwear.

There was a relatively very large decrease in imports of rubber and rubber products by ₹ 2,163,000, which is nearly one half of the amount for January. The main cause for the fall was the almost complete cessation of rubber-wear (galoshes) imports, which decreased by ₹ 1,313,000.

The greatest of all import changes took place in the chemical group, which rose by ₹ 9,673,000. This group is tabulated in the publications of the Chief Statistical Office under four sub-divisions, which are: 1) inorganic, 2) organic, 3) dyes and colours, and 4) various. In the February statistics the last three sub-divisions show greater or lesser decreases, but the first, i. e., inorganic, rose by ₹ 12,188,000. This increase was exclusively in artificial fertilizers, of which ₹ 11,213,000 falls to Chilean saltpetre. It shows the improved material wealth of agriculture, caused by a stabilisation of the prices of agricultural products at a high level; the farmers not only bought up the constantly increasing home production of fertilizers, but also increased imports of this article to dimensions unknown since the war.

There was a surprise in the decrease in machinery imports by ₹ 5,866,000 consisting of a fall in textile machinery by ₹ 2,800,000, motors by ₹ 1,314,000 and other small items and electrical equipment by ₹ 651,000; up to the present, these items have exhibited a constantly increasing tendency. The imports of means of communication, however, rose thanks to the purchase of steamers, motor and sailing craft by ₹ 3,097,000.

The large group of textile imports did not vary materially from January, but certain changes occurred in its subdivisions. Thus the imports of cotton fell by ₹ 4,217,000, while combed wool rose by ₹ 1,609,000 and cotton fabrics by

₹ 1,684,000; other changes are of no importance.

Of the remaining import groups, it is well to mention the increase in metals, excluding ores, by ₹ 1,163,000, and scrap iron by ₹ 901,000 while rolled and cast iron products showed a slight fall. Lastly in the paper group the imports of rags and scrap increased by ₹ 1,086,000.

Leaving until later a discussion of the value of changes which took place in imports, we will turn to a description of the changes in the February exports. These are important in so far as it was their decrease which caused the rise in the unfavourable balance of trade.

The fall in exports by ₹ 20,591,000 in comparison with January touched every important export group, with the exception of metals and textiles and the groups of secondary importance which had rather a rising tendency. Let us look into these changes more in detail.

At the outset there appears a decrease in the foodstuffs group by ₹ 3,510,000. The most important item was the fall in sugar by ₹ 6,645,000; the total for two months shows, in comparison with January, a fall by ₹ 24,744,000, and the months still further back gave results also smaller than those of the preceding sugar campaign. There is no doubt, therefore, that the total export of sugar from the 1927/28 campaign will be much smaller than from the 1926/27 campaign. This symptom, unfavourable from the point of view of trade balance, would only be unfavourable from a general economic stand-point in the



MARKET PLACE IN A SMALL FRONTIER VILLAGE
(PHOT. S. PLATER)

I M P O R T S

E X P O R T S

G O O D S	February 1928	Jan.-Febr.		February 1928	Jan.-Febr.		G O O D S	February 1928	Jan.-Febr.		February 1928	Jan.-Febr.	
	Volume — in tons	1928	1927	Value—in thousands of ₯	1928	1927		Volume — in tons	1928	1927	Value—in thousands of ₯	1928	1927
TOTAL:	378.362	733.714	692.827	270.378	541.541	380.002	TOTAL:	1,557.610	3,348.364	3,568.834	197.823	416.237	401.378
Foodstuffs	40.358	83.910	120.857	39.408	82.376	85.862	Foodstuffs	62.208	145.025	204.106	45.011	93.532	117.104
including:							including:						
wheat	2.642	6.042	17.358	1.366	3.137	9.005	barley	9.030	16.631	17.886	3.911	7.105	7.287
rye	468	1.419	24.106	197	603	8.971	peas and beans	4.463	9.440	4.164	2.540	5.468	2.209
maize	4.815	8.343	7.778	1.482	2.595	2.214	potato flour and starch	1.616	3.027	737	1.065	2.071	393
rice	4.398	7.026	6.154	2.775	4.690	4.798	sugar	19.792	51.898	81.348	11.693	30.031	54.775
plums	1.332	3.127	2.678	1.529	3.675	2.894	meat	2.618	5.239	4.786	5.923	12.591	10.422
lemons and oranges	2.413	4.143	4.727	2.196	3.495	3.416	butter and cheese	644	1.325	695	3.835	7.736	3.373
nuts, almonds and spices	352	690	642	1.306	2.669	2.236	eggs	2.882	3.707	4.502	8.950	11.617	13.398
tea	223	442	372	1.966	3.974	3.280	hops	126	191	189	1.026	1.733	2.290
cocoa	568	963	624	1.804	3.131	1.877	forage	14.083	39.455	70.683	4.147	8.966	14.833
coffee	593	1.155	986	2.672	5.197	4.599							
fish and herring	9.042	18.351	19.053	6.158	12.818	10.996	Live animals (head)	118.184	274.237	144.848	17.424	40.409	15.409
edible fats of animal origin	1.648	3.626	3.055	4.319	9.422	8.522	including:						
edible fats of vegetable origin	964	2.127	1.741	2.384	5.226	3.575	pigs	97.803	216.025	71.266	16.408	38.148	13.234
tobacco	586	1.313	2.730	1.899	3.548	6.129	Animal products	1.886	3.691	2.712	6.425	12.696	8.660
forage	5.010	12.562	15.837	1.465	3.632	4.257	including:						
Live animals (head)	2.190	16.177	22.033	139	423	343	dried skins	982	1.804	756	2.941	5.411	1.402
Animal products	3.896	7.067	5.914	22.345	42.377	25.417	Timber and wood ware	394.119	848.536	945.724	43.886	95.500	77.151
including:							including:						
dried skins	2.202	4.047	3.237	7.154	13.311	8.312	pulpwood	86.801	222.474	227.293	5.519	14.209	11.286
furs raw	394	730	354	3.130	5.591	1.937	pit props	55.266	116.424	179.294	2.820	5.848	7.509
tanned hides	321	727	957	8.311	16.318	10.987	round wood and logs	109.072	203.839	197.792	10.562	19.837	14.551
furs	10	22	19	1.126	2.245	1.083	planks, deals, battens	104.700	232.318	264.791	18.829	42.632	33.758
Timber and wood ware	3.527	5.749	3.557	1.463	2.956	1.841	railway sleepers	10.121	18.788	22.370	1.482	2.772	1.906
Plants and seeds	3.352	5.708	5.180	3.153	5.931	5.129	furniture	592	1.212	839	1.123	2.288	1.553
including:							veneers	1.809	4.175	3.172	1.268	2.964	2.234
oil seeds	2.320	4.018	3.874	1.542	2.855	2.420	Plants and seeds	8.805	19.993	19.925	9.412	26.363	16.510
Building materials, minerals, ceramic products; glass	87.090	191.248	171.142	4.638	10.131	6.881	including:						
Fuel and petroleum products	20.893	42.821	27.145	1.119	2.646	2.210	grasses and pasture plants seeds	6.081	12.042	13.667	7.252	14.398	12.394
Rubber and rubber products	254	744	459	2.367	6.897	5.023	Building materials, minerals, ceramic prod.; glass	46.699	99.334	94.668	1.041	2.425	3.213
Chemicals	86.791	136.372	104.227	38.914	64.155	41.964	Coal, coke, briquettes	965.931	2,081.855	2,135.748	26.719	57.922	69.279
including:							Petroleum products	17.308	37.424	64.076	6.576	13.979	21.181
potass. salts	17.125	29.853	16.318	2.733	4.878	2.309	including:						
Chilian saltpetre	32.140	40.319	13.166	14.864	18.515	6.818	motor and lubricating oils	6.192	14.181	23.153	1.310	2.977	4.617
Thomas slag	15.051	25.678	20.279	1.331	2.383	2.313	benzine	3.397	6.873	15.265	1.607	3.294	7.011
vegetable fats	1.690	3.896	3.714	2.899	6.580	6.551	paraffine wax	3.567	6.900	4.062	2.370	5.605	4.707
animal fats	1.013	2.258	2.101	1.532	3.450	3.579	Chemicals	18.759	31.725	25.038	4.719	8.211	7.253
tanners	1.261	2.259	2.322	1.383	2.445	2.026	including:						
dye-stuffs (synthetic)	95	221	143	1.663	3.753	2.735	artificial fertilizers	11.330	16.473	12.511	1.430	1.955	2.294
Ores, metals and metal products	103.654	198.655	215.591	23.981	46.976	38.634	Ores, metals and metal products	35.365	69.617	63.297	20.893	40.224	41.624
including:							including:						
iron ores	41.164	86.610	98.904	1.946	4.155	2.793	iron and steel rails	4.680	8.668	10.107	1.389	2.788	2,919
zinc "	16.669	30.248	26.251	3.546	6.606	6.712	iron and steel sheets	2.595	5.317	8.941	1.705	3.167	4.689
scrap iron	31.854	56.551	61.291	4.334	7.767	5.997	pipes	3.452	7.550	6.034	2.158	4.669	3.584
copper and copper prod.	1.271	1.757	1.167	3.803	5.350	3.615	zinc	10.341	19.202	15.745	11.740	21.849	21.372
Machinery, electrical wares, means of communication	7.425	16.474	7.594	38.492	80.404	38.972	" sheets	891	1.882	1.977	1.244	2.685	3.388
including:							Machinery, electrical wares, means of communication	428	1.027	1.029	800	1.887	1.674
motors	409	1.318	359	1.514	4.342	1.079	Paper, books and pictures	1.236	2.136	2.981	840	1.454	1.922
electrical machinery	331	598	286	2.620	4.697	2.879	Textiles and textile products	4.586	8.863	7.443	12.924	25.670	21.115
wood and metal working machinery	634	1.127	595	2.411	4.410	3.148	including:						
textile machinery	621	1.903	544	3.021	8.842	3.689	flax and hemp	3.456	6.504	5.259	3.795	6.962	3.763
agricultural machinery	1.237	2.091	552	2.661	5.161	2.146	cotton fabrics	325	560	867	3.398	5.993	7.843
boilers and heating appliances	442	1.005	441	1.937	4.513	1.969	wool yarns	78	191	204	1.750	4.372	3.805
electrical appliances	933	2.182	1.930	6.910	14.471	10.398	wool fabrics	53	108	68	1.125	2.396	1.759
cycles	172	334	95	1.061	2.095	571	Clothing and fancy wares	44	80	48	772	1.446	1.014
motor cars	706	1.339	504	4.986	9.753	3.797	Various	19	28	22	213	489	260
Paper, books, and pictures	9.368	18.742	10.223	8.451	18.344	11.386							
including:													
waste and rags	3.057	6.881	4.934	2.525	6.136	4.878							
paper and paper ware	4.407	8.270	3.368	3.952	7.991	4.053							
Textiles and textile products	12.708	25.637	21.061	80.422	161.478	108.228							
including:													
jute	2.194	4.246	4.245	3.083	5.867	5.775							
cotton	6.849	14.264	11.407	28.114	60.445	40.365							
cotton yarns	269	529	480	4.598	8.961	5.927							
" fabrics	208	352	175	5.122	8.560	4.322							
wool (combed incl.)	2.296	4.401	3.581	23.005	44.441	32.497							
" yarns	265	553	310	6.469	13.629	7.246							
" fabrics	51	108	72	1.634	2.993	1.664							
silk fabrics	19	40	29	3.609	7.185	5.290							
Clothing and fancy wares	79	173	126	2.682	5.868	4.244							
Various	169	354	281	4.485	9.904	5.802							



BOILER HOUSE IN ONE OF THE CZERNICKIE COAL COMPANY'S MINES (PHOT. S. PLATER)

event of the actual production of sugar decreasing.

The statistics, covering the results up to the end of January, however, show that there was even a small increase in sugar production, and it is not probable that February will show an important change in this respect. Thus, the decrease in exports only indicates an increase in home consumption, which testifies to the rising purchasing ability of the population.

Of the other sub-divisions in the foodstuffs group, exports of fodder fell by zł 2,672.000, while that of eggs rose by zł 6,283.000; this latter division has begun its season and will increase for the next few months to come (egg prices have been lowered, which is natural in view of the ending of the season of scarcity). It is to be expected that when the new regulations concerning egg exports come into force they will lower exports in quantity, but the higher price which will be obtained in view of better selection, should in the near future compensate for this difference.

The exports of live animals decreased by zł 5,561.000, of which zł 5,332.000 is accounted for by a fall in pig exports. A simultaneous fall in prices makes the export decrease of this group seem relatively greater.

But the largest fall was in the timber group, where the difference was zł 7,728.000, and what is more serious is the fact that the greatest part of this fall is accounted for by a decrease of zł 4,974.000 in sawn timber. Exports of pulpwood diminished by zł 3,171.000, while those of logs and stems rose by zł 1,299.000.

There was also a fall in coal exports; leaving out of account coke and briquettes, which are of little importance, the exports of coal were less by zł 3,903.000. The loss is severe, because the coal industry has difficult export conditions to face and must fight its way to every market against competitors as strong as England and Germany. There are smaller changes to be found in other groups, such as falls in: plants and seeds by zł 1,559.000, and petroleum products by zł 827.000, while

metals (without ores) gained by zł 1,458.000. Other changes were of no account.

Viewing as a whole the changes in foreign trade which took place in February, it must be stated that they were, for the greater part, unfavourable. The very fact that the adverse balance of trade reached a figure only twice surpassed in 1927 (May and June, the period of greatest grain import) is a bad sign, and it is aggravated by the fact that the direct cause of the larger unfavourable balance is a decrease in exports. But to draw conclusions on the basis of generalities alone, is not justified. The flow of economic life in Poland shows, during the period concerned, no unfavourable changes which might affect the balance of trade. Let us see therefore, what the data indicate in detail.

Imports in February bore a more favourable aspect than in January. A small decrease in iron ores, certain machinery and cotton and a not very large increase in cotton fabrics are more than compensated by favourable

signs, such as a rise in raw hides, a very large increase in artificial fertilizers, a rise in zinc ores, raw material for paper and wool and a fall in imports of foodstuffs. The general level of imports has remained more or less the same during the preceding three months, at a height universally agreed upon as normal for the present economic status of the country.

Let us now see how the matter of exports stands. In the first place it must be noted that the fact that February is two days shorter than either of the two preceding months, is not without influence. Polish exports are, in the main, bulk products, where the number of loading days available plays a considerable part in the amount exported. That is why February always shows export figures lower than in other months, and especially is this true for goods like coal and timber, which groups, in February 1928, show the largest decline.

A second factor is climatic conditions, which always hamper exports in February. In other years the exports of sugar compensated for this factor, but in 1928 these fell. At the same time, however, we have already seen that the decline in sugar exports was due not to decreased production but to greater home consumption, which cannot be considered unfavourable.

It cannot be denied that there are really unfavourable signs in the February exports. To such belong in the first place the decrease in pig exports, an especially sharp decline in sawn timber and, eliminating the above mentioned unavoidable causes of decrease, the diminution of coal and petroleum products exports, and those of plants and seeds.

On the other hand, excluding a series of small items which are without importance, there is to be seen a rise in metal and cotton fabric exports, not to mention egg exports.

Comparing the data for the two months periods of 1928 and 1927, it is seen that, in spite of the unfavourable results in February 1928, exports increased by nearly $\text{zł } 15,000,000$, while investment imports, which have been increasing on an ever growing scale during the last few months, augment the productive and competitive ability of Polish industry and strengthen the position of agriculture. Gradually, therefore, the export trade will grow. The balance of trade is unfavourable,

but it is healthy, and the breakdown of export development in February is passing.

OPENINGS FOR TRADE AND BUSINESS WITH POLAND

Particulars of any of the under-mentioned offerings may be secured on applying to the Editor, "The Polish Economist", and quoting the respective Ref. No.

The Editor accepts no responsibility for the consequences of the transactions concluded.

Ref. No. 129: Polish enterprise producing rectified alcohol seeks buyers.

Ref. No. 130: Water and sewage cast iron piping, asphalted, and parts thereto, are offered by Polish Works.

Ref. No. 131: Export firm desires to enter into relations with foreign timber purchasers.

Ref. No. 132: Manufacturer of office furniture desiring to place his goods on foreign markets, is ready to enter into relations with representatives abroad.

Ref. No. 133: Polish firm offers for sale roofing and insulating material; orders also executed for im-

pregnating railway sleepers, masts, &c.

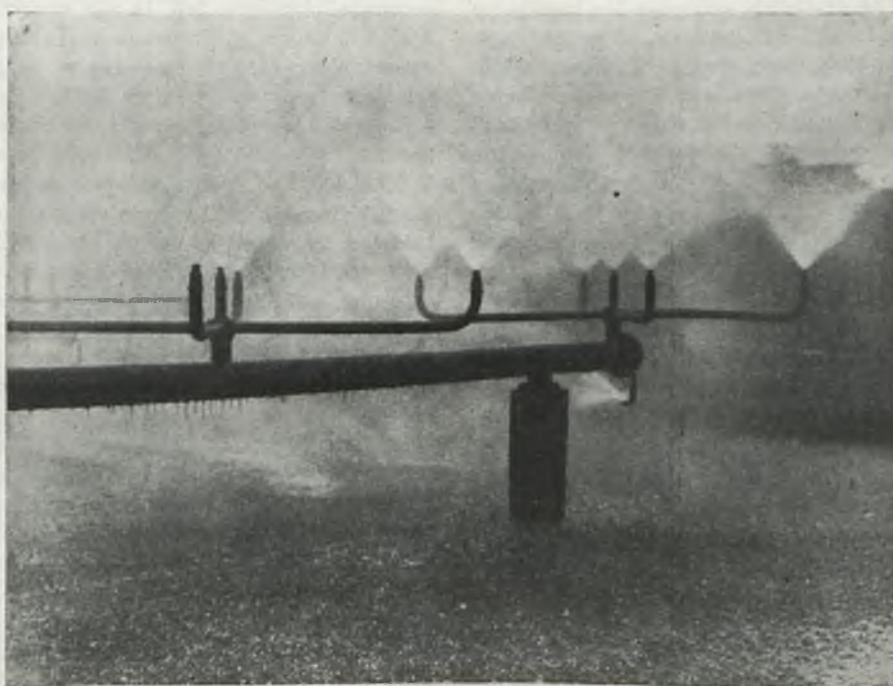
Ref. No. 134: Polish works offer for export heavy steam pipe insulation material.

Ref. No. 135: Paper and cellulose factory desires to enter into relations with foreign firms.

CUSTOMS DUTIES AND FOREIGN TRADE REGULATIONS

NEW PROCEDURE FOR THE PRESENTATION OF CERTIFICATES OF ORIGIN. — A decree of the Council of Ministers dated February 10 ("Dz. Ust. R. P." No. 15/1928, item 113), released a considerable number of goods from import regulations. At the same time, it laid down the necessity of presenting a certificate of origin, stamped with the consular visa. For countries which have regulated commercial and consular relations with Poland, the new procedure presents, as regards certificates and visas, no difficulty. The matter is different, however, for a country which exports directly or indirectly into Poland, but whose commercial or consular relations with Poland are not in order.

The question arose as to the procedure to be applied to goods which arrived before the term set for doing away with the import regulations, i.e., March 15; these goods, not having obtained certificates of right of entry, could only be allowed into Poland after the payment



COOLING APPARATUS AT THE CHORZÓW CHEMICAL WORKS
(PHOT. S. PLATER)

of customs duty at the new revaluated rates. These goods would need, according to the new Statute, a certificate of origin.

Both these questions were taken into account in a decree by the Ministers of Finance, and Industry and Commerce, dated March 3 ("Dz. Ust. R. P." No. 26/1928, item 242), and a circular of the Minister of Foreign Affairs.

By the decree of March 3, those goods the import restrictions of which have been removed, yet which arrived before March 15, may be admitted by the customs authorities, without certificates of origin, on the basis of transfer and trading documents, and allowed entrance according to the statute of February 10, so long as it does not appear from the documents presented that the goods either originated or were shipped from Germany.

The same applies to goods released from import restrictions, which are shipped to Poland on or before March 14, at the latest, the same customs procedure being applied until April 14. In this case also, goods originating or shipped from Germany are barred entrance.

The question of certificates of origin superseding the certificates heretofore employed, was settled by the above mentioned circular of the Minister of Foreign Affairs, which explains that certificates of origin formerly employed in order to obtain the right of enjoying conventional tariff rates, may also serve at present for customs procedure.

In every other case, goods released from import restrictions will be acknowledged by the customs authorities only when accompanied by a certificate of origin, visaed by the respective Consular Office in accordance with the decree of February 10, 1928 ("Dz. Ust. R. P." No. 15/1928, item 113), and including a warning to the effect that it does not entitle the holder to any customs rate reductions.

This kind of visa will be given by the Consular Office even for goods not originating from the district or country in which the said Consular Office is situated, but which are merely shipped from or passing through that country or district.

Visas may in no case be granted for goods originating from Germany; also goods originating in a country other than Germany, yet coming from storehouses on German territory or through German ports, will continue to suffer import restrictions, and their certificate of origin may not, in such a case, serve as a right of entrance.

CHANGE IN CERTAIN CUSTOMS RATES. — The Presidential decree ("Dz. Ust. R. P.", No. 26, item 230) for the amendment of the customs tariff of June 26, 1924, embraces the reduction of the rates on a number of dutiable items. The changes are as follows:

Item of the Customs Tariff	Goods	Duty per 100 kg. in %
96 p. 3	Barium salts	
	a) blanc fixe	12.50
	b) barium carbonate, precipitated	3.—

Up to item 140	Remark: — Band steel, cold rolled, 30—34 m/m. width, 1—1.2 m/m. thickness, tensile strength 90—110 kg. per m/m. ² , for factories for the making of bicycle chains, by permission of the Treasury	15.—
Up to item 192	Remark: — Fabrics of raw nettles for factories for the manufacture of emery cloth, by permission of the Treasury	45.—
Up to item 193	Remark: — Fabrics of prepared nettle for factories for the manufacture of emery cloth — by permission of the Treasury	45.—

The present decree comes into force on the day of its announcement.

DUTY REFUND ON THE EXPORT OF EXPLOSIVES. — Shortly there will appear a decree of the Ministers of Finance, Industry and Commerce, and Agriculture, introducing a customs duty refund when exporting explosives, on the products imported for their manufacture. The refund will be made according to the following scale (in %):

per 100 kg.	train powder	7
" "	explosive saltpetre	20
" "	lunts	35
" "	caps	80
" "	dynamite	22
" "	nitroglycerine	32
" "	trotile	25
" "	smokeless powder	200

The refund will be effected by export cheques. These will be made out to bearer, will be valid for 9 months, and may be used to pay customs duties on any imported goods whatsoever.

A list of export associations granted the right of giving out certificates of export, will be determined by the Minister of Finance in agreement with the Minister of Industry and Commerce.

Detailed instructions in the above procedure will be drawn up by the Minister of Finance.

TRANSPORTS

RAILWAY TRAFFIC IN FEBRUARY. — Traffic between home stations, transit and import increased in February. Of the various kinds of goods transported, there was a rise in many of the groups, but especially in coal, timber and building materials, artificial fertilizers and finished products; there was considerably more of the last mentioned than of raw materials. This activity means the seasonal awakening of agriculture, building and industry after the depression of the past months. The administrative transports of railway material increased by 17 per cent.

The average daily movement of 15-ton

goods waggons, rose in February to 16.178, i. e., by 1.506 or 10.3 per cent, as compared with January, and by 300 or 1.9 per cent in comparison with February 1927.

The following statement illustrates the movement on the railways (in daily average 15-ton waggons):

	February 1928	January 1928	February 1927
loaded on the Polish State Railways: destined for local stations	11.197	9.956	10.559
destined for abroad	3.120	3.136	3.437
Total:	14.317	13.092	13.996
received from abroad transit via Poland	629	552	750
	1.232	1.028	1.132
Total:	16.178	14.672	15.878

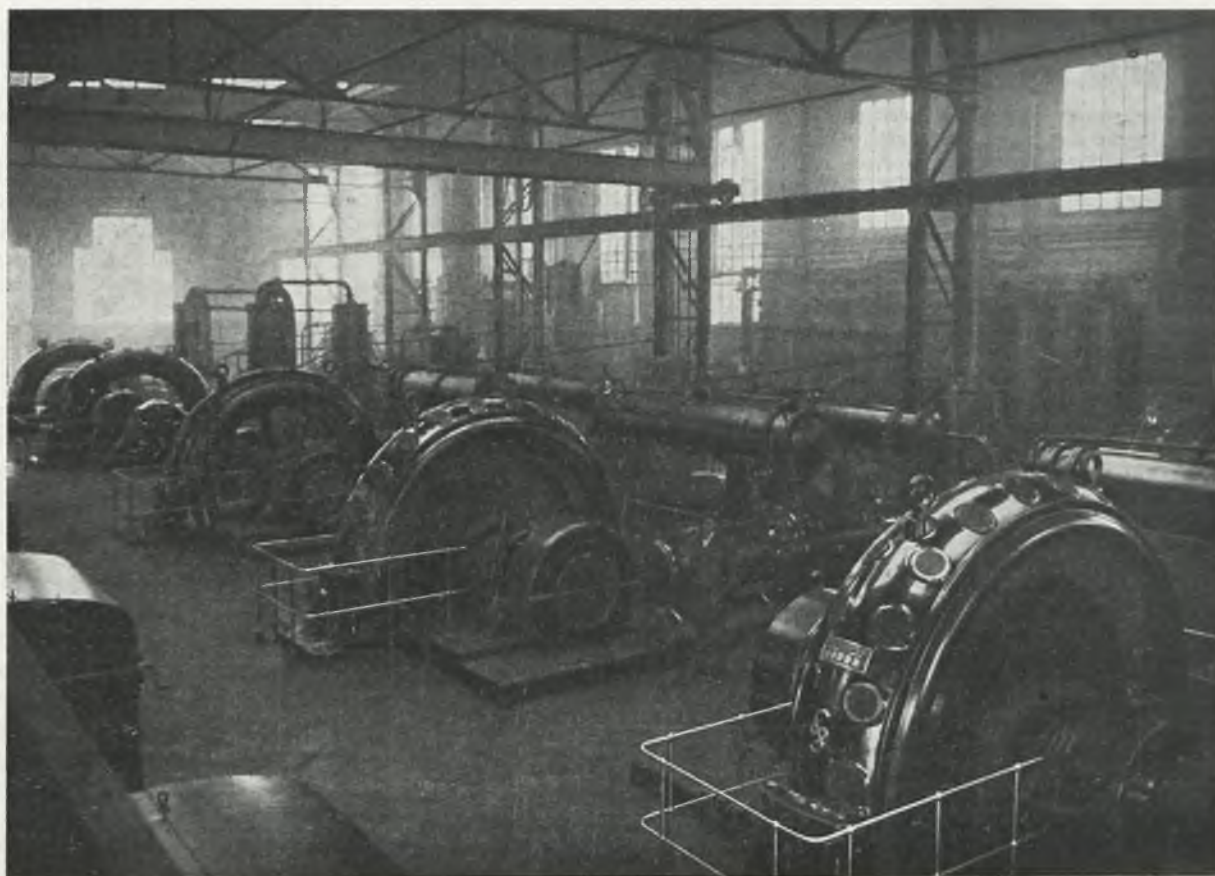
Thus, it is seen that the largest increase was in transit shipments (by about 20 per cent), next in transports received from abroad (by 14 per cent), and lastly in goods loaded at Polish stations (by about 12 per cent). The loadings destined for abroad decreased. In comparison with February 1927, transports destined for abroad and by received from abroad fell off seriously, while transit shipments and home transport increased, by 9 and 6 per cent respectively.

The following statement illustrates the daily car-loadings of the different groups of merchandise despatched to local stations (in 15-ton waggons):

	February 1928	January 1928	February 1927
coal, coke and briquettes	3.699	3.501	3.800
crude oil and petroleum products	180	188	173
timber	1.148	955	1.134
agricultural products	860	807	764
raw materials and industrial products	1.985	1.645	1.754
miscellaneous	3.325	2.860	2.934
Total:	11.197	9.956	10.559

The main changes in railway transports in February as compared with January have been discussed above. If the home transports of February 1928 are compared with those of February 1927, it appears that the increase in 1928 was influenced primarily by greater agricultural transports (various articles of food), and transport of industrial articles (building materials and artificial fertilizers); there also rose the transports of timber, petroleum and its products; "various" goods increased considerably and included nearly all the items detailed, such as railway administrative transports, small merchandise &c.

The following statement gives the average daily number of 15-ton cars despatched to foreign countries:



MACHINE ROOM IN A LARGE CHEMICAL FACTORY (PHOT. S. PLATER)

	February 1928	January 1928	February 1927
coal, coke and briquettes	2.009	2.066	1.864
crude oil and petroleum products	43	41	63
timber	785	776	1.179
agricultural products	60	62	41
miscellaneous	223	191	290
Total :	3.120	3.136	3.437

As compared with February 1927, crude oil, timber and the miscellaneous group show considerable decreases while there is a strong increase in coal and agricultural products.

NEW RAILWAY LINES UNDER CONSTRUCTION.—Two Presidential decrees have been announced ("Dz. Ust. R. P." No. 16/1928, item 123, and No. 22/1928, item 196) which authorise the Government to build two new railway lines: Herby-Inowrocław and Woropajewo-Druja.

The first, 255 km. in length, is a portion of the main line which has been under construction for the last two years and which will join Upper Silesia with the Sea (Gdynia). The building of the line has been started at both terminals: from Upper Silesia the section Podzamcze — Kalety — Herby has been undertaken, and from Gdynia the section Gdynia — Bydgoszcz.

The line Woropajewo — Druja, 90 km. in length, situated in the Northern part of the country bordering Latvia, is

connected with the general plan for the extension of the railway system in the most neglected portion of Poland. The new line will be important in that it will pass through the main flax-growing areas, which up to now have been virtually cut off from the rest of the country.

Work on both lines has been commenced.

THROUGH-GOODS SERVICE WITH RUSSIA.—On March 15, there came into force an agreement concerning through-goods communication between Poland and Soviet Russia. Temporarily the number of goods waggons allowed to pass the main frontier stations has been fixed at 30 per day, i. e., 15 in each direction. The frontier station will give preference to refrigerator-cars and transports of perishable and valuable goods.

POLISH-HUNGARIAN RAILWAY UNION.—On March 1, there came into effect a direct Polish-Hungarian railway tariff, composed of two parts.

Part I treats of the transport of all kinds of goods with the exception of coal, coke and briquettes, and contains the regulations and tariff rulings, tariffs together with an index, tariff distances and regulations regarding routes.

The transport charges given in part I are in Polish currency, i. e., Grosz per 100 kg.

Part II treats of the transport of coal, briquettes and coke and contains the special rulings of the international convention, tariff regulations, lists of loading or mine stations, transport charges in Hungarian currency, i. e., Fillers per 100 kg., distances and routes.

The above tariff may be purchased, at the price of ₺ 25 for part I and ₺ 15 for part II, at railway offices, or may be ordered from the stations detailed in the tariff.

PORT TRAFFIC IN FEBRUARY.—

February is the third month of winter during which the port traffic in the Polish ports suffers a period of depression. Both Danzig and Gdynia do not freeze up, yet the cold and wind during the period from December to February and even to March always hamper shipping.

In Danzig, as was foretold in the January review, there was a further decrease of traffic in comparison with December 1927 and January last. There entered the port 412 ships with an aggregate net reg. tonnage of 265.818 (in December 335.663 net reg. tons, and in January 323.087); and 412 ships departed with an aggregate net reg.

tonnage of 279.955 (in December 362.678 and in January 294.253). In comparison with February, 1927, the difference in the figures is not great because in that month 457 ships called with an aggregate of 271.856 net reg. tons, and 423 departed with an aggregate of 246.637 net reg. tons. This steady decrease in traffic in January and February is, as mentioned above, an usual occurrence. The various nationalities of the ships which called and departed from Danzig in February, 1928, were as follows:

	Arrivals:		Departures:	
	ships	net reg. tons	ships	net reg. tons
Poland & Danzig	20	8.623	17	7.163
Germany	135	68.869	140	80.803
Finland	5	7.824	4	5.454
Russia	1	596	1	596
Latvia	24	21.857	19	14.976
Lithuania	4	1.748	4	1.748
Sweden	90	47.186	98	53.333
Norway	14	10.896	17	17.298
Denmark	66	48.536	67	50.070
England	17	21.366	18	21.914
Holland	8	3.171	11	4.505
Belgium	2	1.785	2	265
France	9	11.611	7	8.476
Italy	1	2.378	2	4.758
Yugoslavia	2	5.207	1	3.190
Greece	2	3.645	2	4.886
Austria	2	520	2	520
Total:	402	265.818	412	279.955

The freight traffic in Danzig in February, though the shipping was less intense than in January, showed an increase especially in import. This testifies to the better cargo efficiency. The following statement gives February freight traffic in comparison with January (in tons):

	Imports:		Exports:	
	January	February	January	February
grain	624	2.160	4.096	5.217
sugar	—	—	25.060	10.797
herring	—	2.201	—	—
artificial fertilizers and chemicals	30.148	32.905	4.780	4.570
timber	—	—	91.307	78.659
cement	—	—	2.308	8.630
coal	3.857	80	362.201	390.927
ores	12.240	26.060	—	—
iron and scrap	18.759	30.598	—	—
groceries and foodstuffs	3.408	2.390	1.583	2.926
various	2.888	2.374	6.374	6.860
Total:	75.887	98.768	497.709	508.488

In export the first place, as always, was occupied by coal of which 336.532 tons were shipped (not quite 26.000 tons less than in January). Timber still kept second place, though it showed a further considerable decrease, from 136.052 tons in December and 91.307 tons in January, to 78.659 tons in February. The average monthly export of timber in 1927 was 143.481 tons; the sudden drop in 1928 is the result of the signing of a timber agreement with Germany whereby great quantities have been diverted from Danzig. That this agreement would be without influence on

Danzig was never supposed and the following months will show whether this surmise is correct.

The export of sugar also fell, it being 10.797 tons as against 25.060 tons in January. The fault is to be explained by the exhaustion of the sugar export contingent and the approaching end of the sugar campaign. Therefore, no rise in sugar export can be expected before the beginning of next season's campaign.

The exports of cement increased in comparison with January, and decreased in comparison with December. During February, 8.630 tons were shipped as against 2.308 tons in January and 16.328 tons in December. It would seem, therefore, that the very material drop in January was a passing phase and that cement export will continue to rise. In import, the first place still belongs to artificial fertilizers and chemicals (32.905 tons in February, as against 30.138 tons in January). The import of this article is developing satisfactorily. A greater increase was shown by scrap iron (rising from 18.533 tons to 29.874 tons), which took second place, and ores (increasing from 12.440 to 26.660 tons) which took third place. The rise in these materials may be considered as permanent as it is caused partly by ore import on the part of Danzig, and partly by orders from Czechoslovakia and from the German foundries in German Upper Silesia.

Coal was shipped in February from Danzig to the following countries (in tons):



FLOATING CRANES IN THE PORT OF DANZIG (PHOT. S. PLATER)

Denmark	100.415
Sweden	86.029
France	47.271
Norway	39.266
Latvia	23.279
Italy	20.429
Finland	5.745
Lithuania	4.503
Belgium	4.250
Holland	3.200
Germany	2.145

Total: 336.532

The remainder was sent to countries not detailed and bunkers.

The passenger traffic through Danzig in February is illustrated by the following table (number of passengers):

	Arrivals	Departures
Libau	33	46
Copenhagen	55	85
London	44	360
Hull	28	561
New York	69	285
Swinemünde	4	—
Stralsund	2	—
Ryga	—	5
Tallin	—	8
Ghent	—	2
Total:	235	1.352

In Gdynia, in spite of winter, the port traffic increased in comparison with the preceding month. There entered 63 ships with an aggregate of 55.971 net reg. tons (in January 61 with 49.207 net reg. tons), and there departed 63 ships with an aggregate of 55.265 net reg. tons (in January 66 with 49.912 net reg. tons); thus, shipping increased by over 10 per cent. The nationality of the vessels calling at Gdynia was as follows:

	Arrivals:		Departures:	
	January	February	January	February
Poland	6	7	7	7
Germany	10	8	12	7
Sweden	28	25	30	28
Norway	5	5	5	5
Denmark	5	7	5	7
Finland	1	—	1	—
Latvia	4	7	4	5
France	2	3	2	3
England	—	1	—	1
Total:	61	63	66	63

The shipments of coal (together with bunker coal) through Gdynia were in February 106.774 tons as against 103.562 tons in the preceding month.

As regards imports into Gdynia, there are for the first time worth noting: 7.023 tons of general cargo, of which 6.676 tons were artificial fertilizers.

RATES TO AND FROM POLISH BALTIC PORTS.—The following table, made up from the rates of the most important steamship companies in the Danzig and Gdynia service, gives average berth-rates charged on the various lines in March, 1928. They are subject to confirmation in each instance, to alterations, and are not guaranteed. Rates in shillings per ton (timber—per standard), unless otherwise specified:

[illegible]

LAND AND WATER - WAYS IN POLAND.

— The extension of the network of water-ways, the regulation of rivers and the building of modern highways, is still in a primitive stage in Poland. The Russian Government, in the largest of the three pre-war divisions of Poland, in its plans of the means of communication, was actuated only by strategical motives; therefore there arose such anomalies as areas over which the building of roads was prohibited and where there were no railways; the Russian Government did nothing to regulate the system of communications in Poland. The tributaries of the Vistula embracing an area of about 200,000 sq. km., geographically united with the tributary system of the Warta and Oder to the West and the affluents of the Niemen, Bug, Dniestr and Dźwina to the East, together with the Dniepr an area of over 500,000 square kilometres, are not yet united and organised from the point of view of inter-communication and regulation. The Polish lowlands are not taken advantage of and the change of goods between East and West is not yet made possible by inland water-ways; articles such as coal, timber and other bulk products would especially feel the gain of such a mode of transportation.

In the case of the Vistula, the characteristics of the three former occupying nations become apparent. The final stretch of 250 km. to the Baltic was under German control and is well regulated and entirely navigable; the middle stretch was in Austrian hands and is partially regulated; but the upper stretch of 400 km. was in the former Russian partition and it is wholly neglected. The same comparison holds true for artificial water-ways.

The rivers which flow through the lowlands are naturally suited for navigation; the mean height above sea-level of the Vistula, which is the backbone of the Polish river system, is 200 m. therefore the current is moderate. The Niemen (to the East) and the Oder (to the West) have a mean height of only 150 m. The affluents of the Vistula form, with the Vistula, a natural water-way junction for the routes from North to South, to the South-East, to the Black Sea and the Moravian Gateway to the Adriatic; also for the routes from East to West, i. e., from the Niemen to the Oder. The solving of this problem from the point of view of capital outlay, has not yet been attended to.

Far back in the past plans were begun for uniting the rivers into a single network; for instance, there were built and still remain to-day the Bydgoszcz canal (26 km.), which joins the Oder with the Vistula through the Noteć, Augustów canal (43 km.) which joins the Vistula with the Niemen, and the Król canal (26 km.) joining the Dniepr with the Bug. Of these canals only the Bydgoszcz is fit for large vessels up to 1,000 tons.

The aggregate length of water-ways in Western Poland is 558 km. and includes canal systems through the rivers Warta, Brda and the Lower and



PROVISIONAL LOCK ON ONE OF THE CANALS
IN POLESIE (PHOT. J. BUŁHAK)

Upper Noteć and the Bydgoszcz canal. This last, however, has more of a local character, being mainly for export to Germany (which amounted to 200,000 tons in 1925) and which requires joining up with the Vistula system through the Konin-Gopło water route.

The Eastern canals date back, in some cases, to the eighteenth century; greatly damaged during the war, they are only partly repaired and will become useful when finances permit.

There are two very far-reaching plans in addition to the projected regulation of the rivers. The first is the Adriatic-Baltic-Black Sea system, based on the old Austrian conception of 1901, which was not executed owing to financial difficulties; this involves the regulation of the Vistula, Dniestr and Wełtawa, and the exploitation of the Moravian Gateway. The second plan, conceived after the war when Poland regained her independence, is the water route from Silesia to the Baltic which would carry the products of the largest coal and foundry area in Poland to the sea. Both these plans are still in embryo owing to lack of sufficient funds.

As regards the smaller investments which are more of an upkeep character, the State has made considerable outlay. Thus, in 1925, the sum allotted to this end was £ 11.5 million and in 1928/29 it is doubled and amounts to £ 27 million, or \$ 3.2 million.

Similarly investments in highways and bridges are increasing. The budget of 1925 provided £ 27.8 million for this work, while that of 1928/29 allocates £ 52.8 million. Yet these investments are not in proportion to the need for roads, especially in the Eastern part of the country, and a country without good roads is crippled. The average length of roads per 100 km.² of area in Poland is 11.4 km. The smallness of this figure is apparent in comparison with France (105 km.), and with England

(82 km.). The density of roads in Western Poland is sufficient, but in Eastern Poland there is a deplorable lack.

For instance, in the Poznań territory there is 6,000 km. of hard road over an area of 26,603 km.² (22.5 km. per 100 km.²), and in Polesie over an area of 42,286 km.² there is only 765 km. of hard road.

The need for roads is accentuated by insufficient railway lines, especially local and narrow-gauge.

Therefore the different district governments are faced with the problem of executing a tremendous amount of work on which a huge outlay of capital is necessary; the fulfilment of the new programme can only come about gradually as the necessary resources come in — especially long-term credits.

In 1927/28 the Government was spending an average of £ 1,800 per km. per annum for the upkeep of roads; this is too little, when one adds the cost of repairing war damages. The upkeep expenditure, however, will rise with the prosperity of the country.

AERIAL COMMUNICATION IN FEBRUARY.

— The air service after its winter inaction began to revive during this month. As the natural result of improved atmospheric conditions, the number of flights (scheduled and extra) increased from 190 in January to 227 in February; similarly the distance flown augmented from 64,030 km. to 76,675 km. Also the number of passengers rose considerably, as compared with the preceding month and was 286 (in January — 194). The transport of freight increased from 11,502 kg. in January to 16,952 kg., and that of mail from 1,094 kg. to 1,110 kg.

FINANCE AND BANKING

STATE REVENUE AND EXPENDITURE IN JANUARY according

to provisional data, were as follows (in millions of zł):

	Revenue		Expenditure	
	actual	estimated for 1927/8	actual	estimated for 1927/8
A) Civil service	160.9	1,234.8	224.4	1,986.4
Central Authorities and Ministries	158.5	1,208.0	207.6	1,647.9
Pensions	2.4	26.8	3.8	82.0
Grants to invalids	—	—	10.8	101.5
State Liabilities	—	—	2.2	145.1
B) State enterprises.. ...	6.6	107.8	3.4	14.9
including:				
mining and foundry establishments	0.6	—	2.3	—
Polish State forests	6.0	—	—	—
C) Monopolies:	71.3	—	—	—
Total: A + B + C:	238.8	1,993.5	227.8	1,991.3

It is seen from the above figures that State expenditure in February was maintained at practically the same level as in the preceding month, for it amounted to zł 227.8 million as against zł 229.0 million in January and zł 248.9 million in December 1927. This comparatively large expenditure at the beginning of the year is to be attributed to capital investments, which are facilitated by the increased State revenue. Thanks to the favourable situation of the Treasury, State undertakings received financial assistance for further expansion. The zł 3.4 million spent on State undertakings were provided for by the Supplementary Budget. Since the beginning of the fiscal year the State expenditure has amounted to zł 2,212 million, thus exceeding considerably the amount estimated in the budget. This is quite understandable when it is borne in mind that those responsible for its preparation endeavour invariably to cut down the disbursements as far as possible, consequently, as soon as the favourable conditions permitted, the disbursements were increased as a number of State requirements had to be met. The revenue of the Treasury collected in the month of February was large enough to cover the increased requirements. Revenue during the month of February amounted to zł 238.8 million as compared with zł 255.0 million in January

1928 and zł 255.2 million in December of last year.

During the period under review taxes brought in less than in January, yet thanks to the transfer to the Treasury of various revenues including those of the State Banks the receipts of the State Administration were somewhat larger than in the preceding month (in February zł 160.9 million, and in January zł 158.2 million).

The decline in State revenue is attributable to the fact that State undertakings transferred to the Treasury only zł 6.6 million in February as compared with zł 15.3 million in the preceding month. Since the beginning of the fiscal year the State undertakings gave zł 176.5 million, which is much in excess of the anticipated amount, the revenue from this source having been estimated in the budget for the whole year at zł 107.8 million.

State Monopolies brought in zł 71.3 million as against zł 81.5 million in January, the decline being zł 9.8 million, but during the eleven months of the fiscal year, the net revenue derived from the State Monopolies amounted to zł 719.5 million as compared with zł 650.9 million, estimated in the budget for the whole year.

The excess of revenue over expenditure in February amounted to zł 10.5 million and since the beginning of the fiscal year it has reached zł 250.6

million. Together with the surplus reported in the preceding month, the reserves of the Treasury are so large that budget equilibrium may be regarded as an accomplished fact for some considerable time without making use of the reserves provided for in the Stabilisation Plan.

TAXES IN FEBRUARY. — The revenue from taxes and Monopolies gave much less in February than in the preceding months, which is indicated by the undermentioned table (in millions of zł):

April — Sept. 1927	982.9
October "	192.4
November "	234.4
December "	224.5
January 1928	219.0
February "	195.0

The decline in revenue is attributable to certain taxes not being due during this month, although it is true that the decline in the revenue from State Monopolies has also contributed towards this end.

Ordinary taxes gave in February zł 110.8 million, that is a trifle less than in the preceding month, when they brought in zł 112.7 million. This slight decline is due to an increase in revenue from customs duties, for direct taxes gave only zł 42.5 million, which was much less than in the preceding month. Of the more important direct taxes, the Income Tax gave zł 11.8, the Industrial Tax zł 18.6 million, the Land Tax zł 2.8 million and the Tax on urban and certain rural properties zł 3.2 million. During the eleven months of the fiscal year direct taxes have brought in zł 552.8 million, as against zł 438.4 million anticipated in the budget for the whole year. Indirect taxes gave in February zł 14.4 million, which was less than in the preceding month. Of the more important direct taxes that of sugar was maintained at practically the same level (zł 8.9 million) as in January; the same remark applies to the tax on crude oil which gave zł 3.2 million. In addition, the tax on yeast gave zł 0.8 million, on beer zł 0.7 million, on wine zł 0.3 million; other taxes gave comparatively small amounts. In relation to the amounts assessed in the budget for the whole year, indirect taxes showed a surplus as the revenue from this source for the eleven months of the fiscal year amounted to zł 151.7 million as compared with zł 130.2 million estimated for the whole year.

A comparatively large increase was shown by customs duties, the actual revenue being £ 37.5 million as compared with £ 25.7 million in January.

The revenue from the customs for the eleven months of the fiscal year amounted to £ 315.5 million, as against £ 182 million estimated for the whole year. Finally a slight increase was recorded in the revenue from stamp fees which gave £ 16.3 million as against £ 15.9 million in January. Since the beginning of the fiscal year stamp fees have given £ 160.5 million as compared with £ 112.2 million, the assessed amount in the budget. In connection with the decline in the revenue from public levies, a slight decline was recorded in the collection of the 10 per cent Supplementary Extraordinary Tax.

A comparatively large decrease was shown in the revenue from the Land Tax, the receipts amounting to £ 5.7 million. During the first eleven months of the fiscal year this tax has brought in £ 61.1 million as compared with £ 95 million estimated for the whole budgetary year; this will probably be the only tax which will not reach the anticipated amount.

As already mentioned, the State Monopolies gave less than in January. In February they transferred to the Treasury £ 71.4 million as against £ 81.5 million in the preceding month.

The State Spirits Monopoly gave £ 35 million, the State Tobacco Monopoly

£ 30 million, and the State Salt Monopoly £ 2.4 million.

The appended table shows the revenues from Taxes and Monopolies (in millions of £):

	Actual revenue:		$\frac{1}{12}$ th of the yearly budget for	
	Febr.:	Jan.	1927	1927/8
Direct taxes	42.6	42.5	56.1	36.5
Indirect taxes	12.1	14.4	15.0	10.9
Customs duties	17.4	37.5	25.7	15.2
Stamp fees	13.2	16.3	15.9	9.3
Total of the ordinary public levies:	75.3	110.7	112.7	71.9
Property tax	4.5	5.7	16.0	7.0
10 per cent extraordinary tax	5.7	7.2	8.8	5.2
Monopolies	—	71.4	81.5	54.0
Total of public levies and monopolies:	141.2	195.0	219.0	139.0

REDUCTION IN THE COST OF PASSPORTS. — By a decree of the Minister of Finance, dated February 27, 1928 ("Dz. Ust. R. P.", No. 21, item 191), the fees of passports have been fixed as follows:

a) the fee for a passport for travelling abroad is reduced from £ 500 to £ 250;

b) the fee for a second journey is reduced from £ 500 to £ 250;

c) the fee for a passport valid for repeated journeys, issued on the strength of evidence of the need for frequent trips abroad, is reduced from £ 1,500 to £ 750.

In addition there have been introduced passports good for repeated business journeys during one year, at a fee of £ 200.

The fees for other special passports issued at reduced rates and the conditions under which reductions are granted, have remained unchanged.

STOCK EXCHANGE

FOREIGN CURRENCIES

— During February there was to be seen on the Warsaw Stock Exchange the strengthening of the rates for certain foreign currencies. The differences in the rates, however, were the outcome not of the demand on the home market, but of that on foreign exchanges, in particular London and New York. This was closely connected with the fluctuations of the Dollar, which currency was taken as a basis for the stabilisation of the Złoty. Drafts on London rose by 7 grosz (per 1 £), on Paris by 5 gr. and on Zürich by 10 gr. (per 100 Francs). Drafts on Vienna and Brussels showed a smaller rise. Drafts on Stockholm were without change and only the rates for drafts on Holland were lowered, i. e., by as much as 70 gr. per 100 Gulden. The rates of the American and Czechoslovakian currencies remained constant.

Złoty quotation differences on world exchanges were of no importance.

The draft turnover on the Warsaw Exchange shrank considerably, since it was less by £ 17 million than in the preceding month. When it is considered that the turnover in January 1928 was greater than in December 1928 by £ 40

		31.1	1—4.2	6—11.2	13—18.2	20—28.2	29.2	par value
Warsaw Exchange								
London	£ 1	43.42½	43.41	43.43½/8	43.45	43.48½	43.49¼	43.38
New York	\$ 1	8.90	8.90	8.90	8.90	8.90	8.90	8.90
Paris	Fr. Fr. 100	35.04	35.03	35.03	35.03½	35.07	35.09	172.00
Brussels	Belg. 100	124.10	—	124.16	124.11	124.14½	—	123.95
Zurich	Sw. Fr. 100	171.57	171.53½	171.50	171.46	171.62	171.67	172.00
Milan	Lir. 100	47.22	47.21	47.21	47.23	47.25	47.22	172.00
Amsterdam	Fl. 100	359.50	359.32½	359.15	358.88	358.79	358.80	358.31
Vienna	Sh. 100	—	125.56	125.50	125.52½	125.55	125.60	125.43
Prague	Kcz. 100	26.41½	26.41½	26.41½	26.41½	26.41½	—	180.62
Stockholm	Kr. 100	—	—	239.25	239.35	239.37	—	238.89
Foreign Exchanges								
London	£ 1	43.45	43.40½	43.41½	43.46	43.47½	43.45	43.38
New York	£ 100	11.25	11.25	11.25	11.27	11.35	11.35	11.22
Zurich	£ 100	58.20	58.20	58.24	58.31	58.27½	58.25	58.14
Vienna	£ 100	—	—	—	—	—	—	79.72
Prague	£ 100	—	377.25	377.50	377.97½	377.007/8	—	55.36
Berlin	£ 100	47.07½	47.03½/3	47.04	47.02	47.—	47.—	47.09
Danzig	£ 100	57.58	57.60	57.60	57.54	57.49½	57.48	57.63

million, the present decrease during the short month of February is not so great as would appear at first glance.

The turnover in Dollar banknotes underwent a further reduction for reasons explained at length in the preceding

review, and it only remains to be again stated that this reduction is the natural result of the constantly growing con-

Industrial shares	31.1	1—4.2	6—11.2	13—18.2	20—28.2	29.2	Nominal	
Bank Polski	162'50	162'50	164'90	153'30	149'05	149'—	₴	100'—
Bank Dyskontowy Warszawski	—	136'—	136'—	136'50	136'—	136'—	₴	100'—
Bank Handlowy w Warszawie	123'—	123'—	123'—	123'—	123'—	123'—	₴	100'—
Bank Zachodni	33'—	—	33'50	33'35	31'35	—	₴	25'—
Bank Zw. Sp. Zarobkowych	90'50	91'90	91'70	92'15	89'85	89'—	₴	100'—
Warsaw Coal Mining Co.	99'—	97'65	98'90	101'30	99'05	96'75	₴	100'—
Chodorów	—	—	—	—	—	—	₴	100'—
Cegielski	—	—	45'—	46'40	43'25	44'—	₴	50'—
Zieleniewski	—	—	—	167'50	—	—	₴	100'—
Norblin, Buch & Werner	—	208'—	207'25	209'—	206'50	—	₴	100'—
Starachowice	60'—	59'15	62'70	64'90	64'80	65'50	₴	50'—
Lilpop, Rau & Loewenstein	40'75	40'25	40'65	43'—	42'90	42'50	₴	25'—
Ostrowiec	83'—	83'—	83'30	85'15	85'60	85'—	₴	50'—
Modrzejów	43'50	42'65	43'65	46'90	46'75	46'50	₴	50'—
Rudzki	48'50	48'50	49'80	52'90	52'65	—	₴	25'—
Warsz. Sp. Akc. Budowy Parowozów	—	36'—	38'—	—	38'50	—	₴	25'—
Żyrardów	—	—	—	—	—	—	Mk.	540'—Rb. 250
Zawiercie	29'50	30'40	30'25	32'60	32'95	32'—	₴	60'—
Standard Nobel	—	40'—	40'50	42'35	40'05	—	₴	50'—
Borkowski (Elibor)	18'50	18'—	18'—	19'35	19'55	19'50	₴	25'—
Wysoka	144'—	145'—	153'25	156'70	155'25	155'—	₴	100'—
Siła i Światło	90'—	—	104'—	114'80	117'05	119'—	₴	50'—

fidence in the stabilised Złoty on the part of the population as a whole.

SHARES

The share market was more active in February than in the preceding month. Besides the larger transactions, there was to be observed a rise in the majority of shares. The metallurgical group occupied the first place and at its head was the exchange favourite, Starachowice. This group gained up to 10 per cent, and only Cegielski and Zieleniewski shares did not follow the general trend on account of falls in the quotations on local Polish exchanges; also the overvalued (200 per cent of the nominal value) Norblin, Buch & Werner Ltd. shares did not show a change.

Of the various bank shares those of the Bank of Poland continued to be very popular, being quoted up to the second half of February without the dividend for 1927, which amounted to 14 per cent. At the present rate these shares return over 9 per

cent on the capital invested. Taking into account the immense reserves of the Bank of Poland, there is no doubt that the shares are an exceedingly good security for investment purposes, and from the point of view of interest, it can well compete with the shares of other banks of issue.

A very handsome dividend (16 per cent) was distributed for the year 1926—1927 by the "Chodorów" Sugar Works, but since these shares are in strong hands, they seldom appear on the market.

Of the shares which deserve special mention, those of "Siła i Światło" may be noted, for although they paid in the preceding month only an 8 per cent dividend for the year 1926—1927, they rose by thirty odd per cent, the reason for this remarkable rise being the large purchases made on account of foreign buyers.

The remaining shares, with the exception of the Bank Związku Spółek Zarobkowych and Warszawskie Towarzystwo Kopalń Węgla which are temporarily in great demand, and a few

bank shares which did not move — had a general upward tendency.

STATE, CITY AND LAND LOANS

The rates for Government bonds were strong. There was a constant demand for the only premium loan in the country, the 5 per cent Premium Dollar Loan. For a country of over 30 million population, one premium bond is insufficient, and this explains the great lack of material; in the preceding month the rate increased by ₴ 10 or by 16 per cent. The rates for the 6 per cent Dollar Loan, 10 per cent Railway Loan, 8 per cent bonds of the Bank Gospodarstwa Krajowego and 8 per cent mortgage bond of the State Land Bank rose. Only the 5 per cent Conversion Loan kept to its former quotation. As regards private investment securities, only the 8 per cent bonds of the Credit Society of the City of Warsaw suffered a loss, i. e., by ₴ 2 per 100 bonds. During the last few months, in connection with the development of city building, the Credit Society of the City of Warsaw has extended its operations by granting

considerable loans on moveable property in 8 per cent mortgage bonds. A great

many of the bonds have therefore come into the market and caused a break in

the rate of one of the most sound private investment securities.

State, Municipal & Land Loans	31.1	1—4.2	6—11.2	13—18.2	20—28.2	29.2	Nominal
5% Conversion Loan	67'—	67'—	67'—	67'—	67'—	67'—	₺ 100'—
6% External Dollar Loan 1920	—	—	85'10	84'25	86'—	—	\$ 100'—
5% Premium Dollar Loan (2nd series)	62'75	63'65	66'05	68'05	71'45	72'75	\$ 5'—
10% Railway Loan (1st series)	102'—	102'—	102'25	102'25	102'50	102'50	Gold fr. 100'—
8% Bank Gospodarstwa Krajowego Bonds ...	93'—	93'—	93'35	94'—	94'—	94'—	Gold fr. 100'—
8% State Land Bank Bonds	93'—	93'—	93'35	94'—	94'—	94'—	Gold fr. 100'—
8% Com. Oblig. of the Bank Gospodarstwa Kraj.	93'—	93'—	93'35	94'—	94'—	94'—	Gold fr. 100'—
8% Land Credit Association Bonds	82'—	82'—	82'85	83'—	83'—	83'—	₺ 100'—
4% Land Credit Association Bonds	—	—	50'90	—	—	—	₺ 100'—
4½% Land Credit Association Bonds	56'75	56'40	56'85	57'—	56'50	56'75	₺ 100'—
8% Credit Soc. of the City of Warsaw Bonds ...	80'50	80'55	80'50	80'20	79'40	78'50	₺ 100'—
5% Credit Soc. of the City of Warsaw Bonds ...	64'50	64'25	63'95	63'55	63'50	63'25	₺ 100'—
4½% Credit Soc. of the City of Warsaw Bonds ...	—	—	60'10	60'50	60'—	—	₺ 100'—

INVESTMENT LOAN FOR WARSAW. — The City of Warsaw has obtained a loan of \$ 10 million. The loan is granted for 30 years, at 7 per cent yearly interest, by Stone & Webster & Blodget Incorporated in New York, and the First National Corporation of Massachusetts. The loan has been realised by means of an issue of 7 per cent City of Warsaw bonds which will be amortised by drawings or by whole and part-redemption at a time deemed suitable by the City. The rate of issue will be \$ 89, the rate of redemption \$ 82'50. The bonds have been placed on the European and American markets. The City has laid down a definite plan for the utilisation of the loan: 70 per cent of the loan is destined for investment and enterprises, the increased earning capacity of which will cover the funds employed for their development; 20 per cent of the loan the City will place in investments, the proceeds from which will not wholly cover the investment; and 10 per cent of the loan will be used to satisfy the very urgent needs of the City, such as school buildings and hospitals, in which the money invested will not be returned. The cost of the two last mentioned types of investment will be covered by the City treasury.

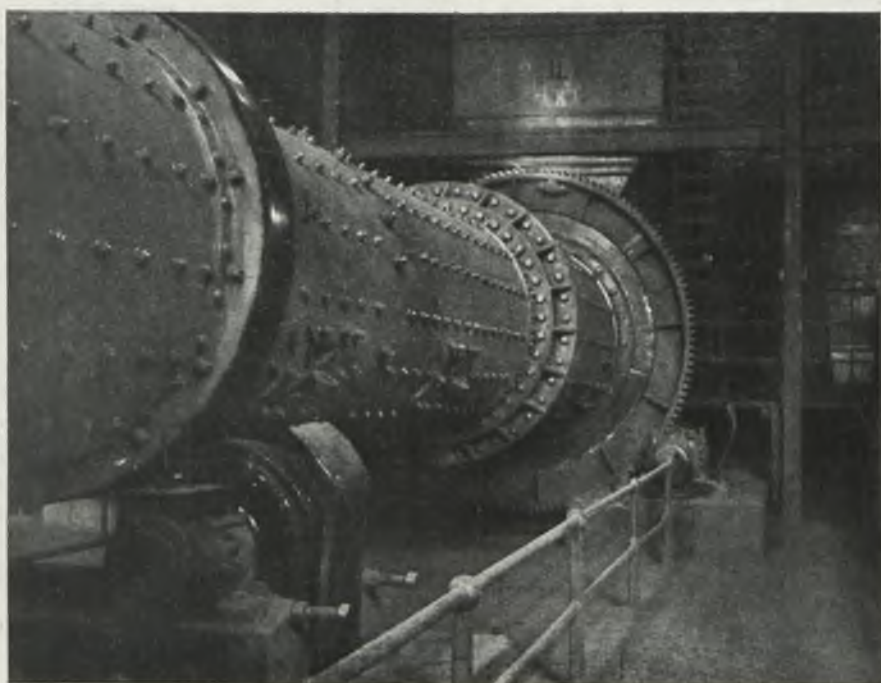
LOAN FOR THE CITY OF POZNAŃ. — A loan of £ 500,000 for the City of Poznań has been completed. The transaction is being financed by the British Overseas Bank Ltd. of London, which takes over the 7 per cent bonds issued by Poznań for this purpose. These obligations will be redeemable at par within 30 years. Interest will be payable half-yearly. The repayment of the loan will take place by amortisation in half-yearly instalments in such a way that the final instalment will be payable at the end of 1927.

The loan will be utilised for the development of the town electric station, as well as for the building of a new abattoir and market halls; these investments have become necessary as a result of the City including new suburbs.

BANK OF POLAND

— After the transient fall in bullion and foreign currency reserves in January, which was accounted for by the service of the different foreign loans, February saw a substantial increase in these reserves. It is true that this increase is smaller than the decline which took place in January, but nevertheless it amounted to ₺ 9'3 million, or by 0'8 per cent. The bulk of the increase took place in the foreign currency reserves which rose during the month from ₺ 636'8 million to ₺ 645'9 million, the

rise in the bullion reserve being insignificant, from ₺ 529'1 million, to ₺ 529'4 million. Of the bullion reserves, the stock of gold held abroad remained unchanged, while that in the Bank's vaults rose by ₺ 141,000, due to further purchases of gold by the provincial branches of the Bank; the stocks of silver (gold value) rose by ₺ 121,000. Purchases of foreign currencies and drafts effected in February amounted to ₺ 91'1 million compared with ₺ 77'3 million in January. The corresponding figures of sales were in February ₺ 76'6 million as against ₺ 125'9 million in the



NITRATES MILLING DRUMS AT CHORZÓW (PHOT. S. PLATER)

preceding month. Of the total value of foreign currencies, zł 46.8 million were sold on the Stock Exchange (in January zł 70.1 million) and zł 27.1 million to various Government Departments (in January zł 51.2 million).

These figures confirm the statement that the improvement in the foreign currency reserves of the Bank in February, was largely due to the reduction in the foreign payments of the Government during the period under review.

The fluctuation in the bullion and foreign currency reserves which took place in February and in the current year, are given below (in millions of zł):

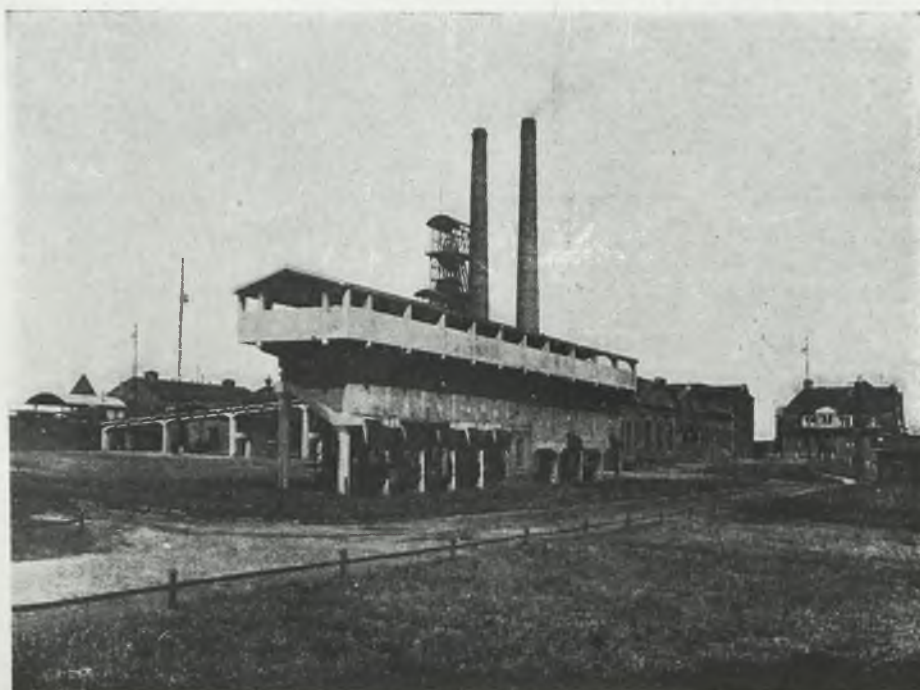
	January 1st	February 1st	February 29th
gold	517.3	526.4	526.6
silver	2.6	2.7	2.8
foreign currencies, drafts and liabilities	687.5	636.8	645.9
Total:	1,207.4	1,165.9	1,175.2

The reserve of foreign currencies and drafts not included in the cover rose during February from zł 200.3 million



MEADOW IRRIGATION IN CENTRAL POLAND

	JANUARY 31st		FEBRUARY 10th		FEBRUARY 20th		FEBRUARY 29th	
Assets:								
Bullion:								
gold in vaults ---	353,023.582.51		353,076.453.72		353,116.123.61		353,164.877.78	
" abroad - ---	173,387.809.70		173,387.809.70		173,387.809.70		173,387.809.70	
silver (gold value) ---	2,693.366.78		2,716.368.94		2,781.859.13		2,814.144.35	
	529,104.758.99		529,180.632.36		520,285.792.44		529,366.831.83	
Foreign currency, drafts and assets - ---	636,819.432.06	1,165,924.191.05	639,586.426.56	1,168,767.058.92	637,105.352.86	1,166,391.145.30	645,852.580.11	1,175,219.411.94
Foreign currency, drafts and assets not included in the cover - ---		200,264.053.67		206,753.547.94		207,039.669.92		205,708.448.23
Silver and token coins --		16,971.949.78		18,892.288.23		17,005.766.82		9,117.903.75
Bills of exchange - --		460,703.359.48		469,012.690.27		465,398.738.71		469,215.580.89
Loans against securities -		41,531.916.03		43,478.290.65		44,351.498.37		46,000.332.31
Own interest-bearing securities - --		5,823.293.22		5,908.019.32		5,923.992.40		5,879.490.57
Reserve funds invested in the securities - --		55,053.489.58		55,172.873.58		55,172.873.58		55,172.873.58
Loans to Government ---		25,000.000.00		25,000.000.00		25,000.000.00		25,000.000.00
Property and fittings ---		20,000.000.00		20,000.000.00		20,000.000.00		20,000.000.00
Other assets - ---		28,507.899.84		29,583.161.18		30,520.252.21		33,676.357.98
		2,019,780.158.65		2,042,549.930.09		2,036,803.937.31		2,044,990.399.25
Liabilities:								
Capital - ---		150,000.000.00		150,000.000.00		150,000.000.00		150,000.000.00
Reserve fund - ---		94,434.640.00		94,434.640.00		94,434.640.00		94,434.640.00
Sight liabilities:								
current accounts of State institutions ---	293,009.315.59		288,533.588.60		357,438.013.57		299,338.293.14	
outstanding current accounts ---	131,958.556.22		164,256.929.27		134,660.574.66		129,420.484.74	
silver purchases a/c ---	90,000.000.00		90,000.000.00		90,000.000.00		90,000.000.00	
State credit fund a/c ---	113,198.257.17		112,208.164.96		107,523.251.05		100,476.403.88	
various accounts - ---	9,028.681.39		41,716.196.60		12,667.318.28		14,956.877.54	
	637,194.810.37		696,714.879.43		702,289.157.56		634,192.059.30	
Notes in circulation ---	1,003,288.050.00	1,640,482.860.37	988,067.530.00	1,684,782.409.43	974,624.410.00	1,676,913.567.56	1,047,715.770.00	1,681,907.829.30
Special account of the Treasury - ---		75,000.000.00		75,000.000.00		75,000.000.00		75,000.000.00
Other liabilities - ---		59,862.652.28		38,332.880.66		40,455.729.75		43,647.929.95
		2,019,780.152.65		2,042,549.930.09		2,036,803.937.31		2,044,990.399.25



THE EMINENCE PIT, WATERLOO CO.

to £ 205·7 million. As is well known, this reserve includes bank notes, cheques &c. in foreign currencies not convertible into gold, foreign bills of over 3 months which do not meet the requirements of the Statutes, i. e., which have not been accepted or endorsed by foreign banks of high standing and, finally, it includes foreign currencies to the amount of £ 165 million which form part of the proceeds of the Stabilisation Loan destined for the purchases of silver in foreign markets and the Treasury reserve.

The bullion and foreign currency cover (included in the cover) represented at the end of January 69·87 per cent of the total bank notes in circulation and the sight liabilities. Gold cover alone represented 31·31 per cent of the circulation so that the provisions of the Statutes according to which three fourths of the minimum cover (that is 30 per cent) should be in gold, were observed. Similarly the stipulations of the Stabilisation Plan that two thirds of the minimum cover should be in the vaults of the Bank were also observed, for the value of gold held by the Bank in Warsaw at the end of February, represented 67·07 per cent of the total gold reserve of the Bank.

The ratio of the bullion and foreign currency cover to the amount of Bank notes in circulation and sight liabilities,

taken together, declined from 71·07 per cent at the end of January to 69·81 per cent at the end of February, despite the increase in the total amount of the cover. This fact is accounted for by a simultaneous increase of the bank notes in circulation and sight liabilities from £ 1.640·5 million to £ 1.681·9 million. As a matter of fact the amount of bank notes alone rose from £ 1.003·3 million to £ 1.047·7 million or by 4·3 per cent, whereas sight liabilities showed a slight decline, from £ 637·2 to £ 634·2. The decline in the amount of sight liabilities was due to the purchase of mortgage bonds to the amount of £ 12·7 million from the State Credit Fund set aside from the Stabilisation Loan proceeds for the assistance of agricultural interests and State undertakings. The increase in the amount of bank notes in circulation is to be attributed to the payment of dividend and to the increase of bullion reserves and credits. The increase in credits was reflected in the aggregate amount of bills in portfolio, which rose from £ 460·7 million in January to £ 469·2 million in February, as well as in the increase of loans against securities, from £ 41·5 to £ 46·0 million.

The ratio of discount credit employed rose by 1·8 per cent, whereas the total volume of credits granted rose from

£ 713 million to £ 723 million, or only by 1·4 per cent. In this connection the percentage of the credits employed to those granted, rose slightly from 64·5 to 65 per cent.

As regards other items of the Bank cover for the notes in circulation, it should be mentioned that the reserve of silver coins declined during the period under review by £ 17·0 million to £ 9·1 million.

In accordance with the Stabilisation Plan, the debt of the Treasury remained unchanged.

The amount of interest-bearing securities held by the Bank declined very slightly.

The fluctuations in the Bank cover which took place in the first two months of this year are given below (in millions of £):

	January 1st	February 1st	February 29th
bills	456·0	460·7	469·2
Polish silver coins and token money	9·8	17·0	9·1
loans against securities	40·9	41·5	46·6
own interest-bearing securities	4·8	5·8	5·9
liability of the Treasury	25·0	25·0	25·0
Total:	536·5	550·0	555·2

LATEST NEWS

WARSAW EXCHANGE:

	10.3.28	20.3.28
\$ 1 =	zł 8.90	zł 8.90
£ 1 =	" 43.49 $\frac{3}{4}$	" 43.51 $\frac{1}{2}$

Provisional budget and extraordinary investment budget. — On March 30, 1928, the Polish Sejm passed two budgetary resolutions: a statute for a provisional Budget for the period April 1 to June 30, 1928, and a statute in the matter of extraordinary State investments. At the same time the Sejm sent to the Budgetary Commission a plan of a Treasury Act together with the preliminary for the year April 1, 1928 to March 31, 1929. The statute for a provisional Budget authorises the Minister of Finance to grant credits for State expenditure up to $\frac{1}{4}$ of the quota in the Budget planned for the year 1928/29 (i. e. zł 619,592,560). The statute concerning extraordinary State investments foresees zł 88,160,000 out of the Treasury for the covering of the costs of indispensable State buildings, roads, bridges and water-ways, as well as zł 5,000,000 for the founding of a special fund for cultural purposes.

BANK OF POLAND:

ASSETS:	10.3.28	20.3.28
Gold and silver reserve . . .	zł 536,072,879.21	zł 556,200,599.97
Foreign balances . . .	627,157,314.61	634,946,846.52
" " (not included in the cover) . . .	212,561,553.10	223,648,136.28
Bills of exchange . . .	476,259,278.46	475,562,817.76
Loans against securities . . .	47,981,395. . .	48,081,204.11

LIABILITIES:

Notes in circulation . . .	1,044,850,390. . .	1,742,411,863.06
Current accounts . . .	434,585,470.33	526,998,740.68
Other sight liabilities . . .	199,418,074.64	196,907,932.38

BANK NOTES COVER

(bullion & foreign currencies)	69.29%	68.36%
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THE BANK GOSPODARSTWA KRAJOWEGO

Warsaw

THE BANK Gospodarstwa Krajowego (the National Economic Bank) was established as a Government institution towards the middle of 1924, having as its chief object the granting of long-term investment credits in the form of mortgage bonds, communal, railway and bank bonds. Unfortunately, the economic crisis of 1925 checked the development of these credit activities on a larger scale, as the Bank was forced to lay out the greater part of its resources in order to save numerous concerns, which were shaken financially by the crisis. The stabilisation of the Złoty in the second half of 1926, and the coincident improvement in the economic situation, however, enabled the Bank to apply itself to a greater extent to its fundamental objects. Thus, the year 1927 was a turning point in this respect: the Bank not only increased its bond issues but also lowered the rate of interest.

At the present time, the Bank is issuing the following long-term investment loans: 7 per cent Złoty mortgage bonds, guaranteed by urban and rural real estate; 7 per cent communal bonds for local government and State loans, and 7½ per cent Bank bonds for industrial credits.

All these securities are covered by the following guarantees:

- 1) first mortgages or local government or State property;
- 2) a special reserve fund, set aside partly from net profits, entrance fees, &c. and other revenues;
- 3) the entire estate of the Bank itself;
- 4) the guarantee of the State Treasury.

Apart from these, the securities are issued in gold currency; viz. the mortgage bonds in gold Złoty on the part basis of 8.88 gold Złoty to the gold Dollar, whilst the communal and bank bonds are, in addition, issued for Dollar, Sterling, Dutch Florin and Swiss Franc equivalents.

Interest coupons are payable twice yearly; the bonds themselves are redeemed at similar intervals, the particular numbers being fixed by the drawing of lots. In order to meet these payments, debtors who have accepted loans in the form of mortgage bonds and

securities of the Bank are obliged to pay half-yearly instalments of interest for the payment of the coupons falling due, and a further instalment for the gradual redemption of the capital sum, this money being used in order to withdraw from calculation a corresponding number of bonds. A small additional charge is collected at the same time to cover administrative costs.

One of the chief activities of the Bank Gospodarstwa Krajowego is the granting of long-term credits for local government bodies, these credits being given in the form of communal bonds. An enormous demand exist for such credits, especially in that part of Poland formerly ruled by Russia. The needs of the towns in this area are especially great, as a large number of them do not possess electric power plants, gasworks, municipal slaughter-houses, market buildings, &c.

Large sums are also required for the building of roads and of auxiliary narrow-gauge railways. In order to satisfy these needs, the Bank has issued a series of 8 per cent communal bonds for Local Government loans, and is now marketing a 7 per cent communal bond issue for a like purpose. These bonds are redeemable within a period of 30 years, whilst the loans granted with these securities are completely guaranteed by the property of the various local government Boards. During the period ending December 31, 1927, the Bank advanced ₦ 140,669,000 in loans to Municipal councils, ₦ 163,357,000 to Country councils, and ₦ 1,214,000 to other local government bodies.

In 1927, the Bank arranged for cash advances on long-term credits in bonds, which to a great extent facilitate the making of such loans. The Bank also furnishes short-term loans for the purpose of covering temporary deficits in local government budgets. Apart from these transactions, the Bank supports the development of communal savings banks, which are able to re-discount their bills at the Bank.

The class of investment activity, next in importance, is that in connection with the heavy metallurgical, the chemical and the agricultural industries.

The Bank meets the investment needs of Polish industry by issuing 7½ per cent bank bonds redeemable within 19 years and which are guaranteed, in the case of loans for industrial establishments, by up to 50 per cent of the estimated value of the land itself, 40 per cent of the value of the buildings and 33⅓ per cent of that of the machinery. The minimum loan advanced is £ 100,000, in view of which none but large concerns can benefit by these credits. The issue of bank bonds on a larger scale has only been possible during the course of the current year. Besides these credits, the Bank aids industry by granting cash loans and by participating in the stock capital. The Bank is especially interested in certain of the larger concerns, such as the "Ursus" Company, the Starachowice Metallurgical Works, the "Azot" Company, the Potassium Salts Exploitation Co., and others; these are assisted in increasing their output and in rationalising their working methods. Thus, in 1927, the "Ursus" Co. was enabled with the Bank's assistance, to commence the production of automobiles, whilst the Potassium Salts Co. built a potassium salt concentration plant in Kałusz.

The Bank continues to take an important share in the financing of agriculture, which may be considered to be Poland's most important national industry. For this reason, agriculture has the first call on long-term investment credits granted in the form of mortgage bonds. These securities, formerly bearing 8 per cent interest and now 7 per cent, are guaranteed by first mortgages of up to one half of the valuation of the property,

and are redeemable within 36 years. Such loans had been issued to a total of £ 31,484,000 up to the end of 1927. Apart from this, the Bank grants large ready money loans in order to supplement agricultural working capital as well as for the purchase of materials necessary for production, particularly artificial manures.

The Bank likewise gives far-reaching support to town housing schemes, by means of special cash advances for the construction of new buildings. Up to the end of 1927, the Bank had granted for this purpose £ 181,451,000. Part of these credits were converted into long-term loans consisting of mortgage bonds, issued on the same principles as for agricultural estates. Up to December 31, 1927, such loans had been granted to a nominal value of £ 29,565,000 as mortgage bonds on urban buildings.

In addition to the afore-mentioned divisions of the economic life of Poland, financial assistance is given by the Bank to commerce in particular with the object of encouraging export. The Bank finances the export of numerous articles from Poland as well as the import of the means of production. In connection with this the Bank, together with a group of English capitalists, founded at the beginning of 1927, the Anglo-Polish Bank of Commerce in Danzig, with the object of fostering Poland's export and import trade.

The National Economic Bank is to-day the most important source of long-term investment credits in Poland.

The following balance-sheet figures evidence the exceedingly rapid development attained:

COMPARATIVE STATEMENT OF THE BANK GOSPODARSTWA KRAJOWEGO
FOR THE PERIOD 1924 — 1927
(in thousands of £)

LIABILITIES:

	Stock capital	Reserves	Capital & reserves	Per cent of total	Deposits	Per cent of total	Bills discounted	Per cent of total	Mortgage & other bonds in circulation	Per cent of total	Liability under endorsements & guarantees	Per cent of total	Other liabilities	Per cent of total	Net profits	Per cent of total	Total of balance-sheet	Per cent
December 31, 1924	35,000	4,805	39,805	14.05	69,755	24.26	33,762	11.91	67,041	23.66	59,330	20.94	13,547	4.80	1,119	4.80	283,359	100.0
1925	35,000	6,814	51,814	5.40	237,915	30.74	27,260	3.52	165,009	21.32	218,373	28.22	80,719	10.50	2,852	0.30	773,942	100.0
1926	35,000	16,296	51,296	5.57	149,083	48.80	6,877	0.75	206,106	22.40	122,011	13.26	80,752	8.79	4,035	0.43	920,610	100.0
1927	120,000	28,817	148,817	10.44	599,815	42.16	18,986	1.32	391,299	27.42	61,563	4.32	200,052	14.02	4,583	0.32	1,425,215	100.0

ASSETS:

	Cash in hand & foreign currencies	Per cent	Securities & stocks	Per cent	Short-term loans	Per cent	Cash advances & long-term loans	Per cent	Mortgage & other loans	Per cent	Client's liability for endorsements & guarantees	Per cent	Other assets	Per cent	Total of balance-sheet	Per cent
December 31, 1924	5,784	2.04	23,121	8.16	82,311	29.06	14,180	5.00	67,041	23.66	59,330	20.94	31,592	11.15	283,359	100.0
1925	8,263	1.07	65,601	8.48	202,964	26.22	53,433	6.90	165,009	21.32	218,373	28.22	60,299	7.79	773,942	100.0
1926	30,904	3.36	38,420	4.18	341,960	37.16	79,450	8.63	206,106	22.40	122,011	13.26	101,309	11.01	920,610	100.0
1927	40,485	3.54	171,956	12.06	255,586	17.93	380,535	26.70	391,299	27.45	61,563	4.33	113,791	7.99	1,425,215	100.0

THE POLISH COMMUNAL BANK

Poznań

THE POLISH Communal Bank was established in 1919 on the initiative of the Ministry of the Interior.

The Bank opened in 1920, since when it has steadily developed its activities in the financing of long- and short-term communal credits.

The bonds issued by the Bank (a fourth series is shortly to be floated) are guaranteed by the entire property and revenues of the local government boards on whose behalf the loans are made, and further by the assets of the Bank itself. The bonds, therefore, represent a safe and profitable investment for capital.

The greater part of the Bank's operations, however, consist of short-term credits, this type of transaction being of paramount importance to those local government boards who do not possess reserves of ready cash. These transactions are of particular importance for County Councils, whose revenues are necessarily paid in periodically.

The Bank also co-operates closely with the economic and financial organisations connected with the various local government bodies, as for example, with the Economic Association of County Councils and with the many County and Municipal Council Savings Banks. The Polish Communal Bank also took in 1927 the initiative in founding for the latter institutions an Auditing Association, which has since developed quite satisfactorily.

The development of the Bank and its relations with the local government bodies are further illustrated by the following statistics:

The stock capital, which amounted to ₹ 500.000 at the close of the currency inflation period, now amounts, together with reserves, to ₹ 2,700 000. The balance-sheet which totalled an even ₹ 3,000.000 on December 31, 1924, rose to ₹ 5,000.000 the next year, to ₹ 10,000.000 on December 1, 1926, and to ₹ 30,000.000 on the corresponding date in 1927.

The Polish Communal Bank has been specially mentioned in a whole series of laws and decrees. A decree of the President of the Republic (1924) granted the Bank the right to accept deposits from public and trust institutions. A further decree of the President, dated February 15, 1928, confirmed legally its statutory privilege of Government guarantees for its bond issues. During the course of the past year, the Bank was entrusted with the administration of the Local Governments' Loan Fund, created by decree of the President of the Republic (June 1, 1927).

The Polish Communal Bank is a Joint Stock Co. from the legal point of view. It is, however, in reality one of the largest associations of local government boards in Poland.

Only public unions and institutions can be shareholders, these comprising at present 220 towns, 160 counties, one province, two public insurance companies and 40 communal savings banks.

THE WARSAW DISCOUNT BANK

Warsaw

THE WARSAW Discount Bank, established in 1871, is one of the oldest financial institutions in Poland. Thanks to the careful conduct of its affairs, this Bank has been able to withstand all the crises which have occurred, whether as a result of political or of economic events during over half a century of its existence. The Bank has so firmly established its position, both at home and in international financial circles, that the recent crisis through which Polish banking passed in 1925, not only did not weaken its position but on the contrary placed it in the forefront of banking institutions in Poland.

The stock capital of the Bank now amounts, after conversion into Złoty, to ₹ 10,000.000

in 100.000 shares of a nominal value of ₹ 100 each, whilst the reserve capital comes to ₹ 3,800.000.

The main office of the Warsaw Discount Bank, the Warsaw City Branch and the branches at Lwów, Drohobycz and Łódź, occupy premises in buildings which are the property of the Bank.

The Bank is in direct contact with all centres of the financial world, maintaining none but first class connections.

The Chairman of the Board of Directors is Count Adam Tarnowski. The Board of Management is composed of M. Paul Heilperin, Chairman, Dr. Henry Aschkenasy, M. Adolf Laterner and Dr. Victor Mikulecki,

THE WILNO LAND BANK

(WILEŃSKI BANK ZIEMSKI)

Wilno

THE WILNO Land Bank, established in 1872 in the city of Wilno, is a Joint Stock Company operating in accordance with a statute of the same year, with certain modifications mostly introduced after the war in order to conform to new legislation and to changed conditions. A new statute introducing certain further changes and codifying old ones is at present under consideration at the Ministry of Finance.

The Bank has for its object the granting of long-term loans, covered by rural or urban first mortgages. The territory upon which the Bank works includes the provinces of Wilno, Nowogródek, Polesie, Białystok and Wołyń, whilst after the ratification of the new statute, the provinces of Warsaw, Łódź, Kielce and Lublin will also be included. Before the war, the Bank also worked in the districts of Kowno, Mińsk, Mohylów, Witebsk and Psków, now belonging to foreign States, i. e., to Lithuania, Latvia, Estonia and the U. S. S. R. As the governments of these States have confiscated the great majority of the mortgaged estates, and do not recognise the rights of the Bank to this property, both the Bank and those of its creditors who are holders of mortgage bonds have suffered enormous losses. The Bank has, however, been able to withstand this loss and has, on the basis of appropriate Polish legislation, issued new 4½ per cent Złoty mortgage bonds in exchange for those of the old Rouble bonds which were registered at the Bank within the legal time limit which ended on January 1, 1928. Such conversion bonds to a total nominal value of

₺ 34,044.370 were in circulation on January 1, 1928; they are guaranteed by real estate mortgaged before the war and located to-day within the boundaries of the Polish Republic. Since the war, the Bank has issued new 8 per cent and 10 per cent mortgage bonds solely in Dollar currency redeemable within 16½ years and 10 years respectively. On January 1, 1928, 8 per cent and 10 per cent bonds were in circulation for the sums of \$ 437,700 and \$ 26,450 respectively. The latter bonds were issued for a special purpose, viz., for the payment of the Property Tax, and are not dealt with on the market.

The mortgage bonds of the Wilno Land Bank are as safe as Government stock, as the loans are granted only up to 50 per cent of the valuation of the real estate involved. The demand for them is growing, both at home and abroad, and this substantiates the hope that the Bank will be able to grant much larger credits than during the first few years after the war. In connection with this, the Board of Management is preparing the emission of 7 per cent mortgage bonds redeemable within about 30 years.

The stock capital of the Bank amounts at present to ₺ 5,250.000 and is made up of 42.000 shares, each of ₺ 125 nominal value. The reserve capital amounts to ₺ 2,625.000, whilst reserve funds come to ₺ 621.392.67.

Active members of the Board of Management at present are: Marian Count Broel-Plater (Chairman), Stanisław Bochwic, Kazimierz Świątecki and Bohdan Szachno.

THE CITY OF WARSAW

WARSAW has before it a great future. It has all the necessary qualifications for becoming a great commercial centre — a centre where East meets West. A century of foreign misrule, whilst unsuccessful in completely checking the development of Warsaw, was yet able to delay it to a very considerable extent. When, finally, the management of the City passed into Polish hands, the City Council was confronted by an enormous task. A period of investment and expansion was commenced which will last for many years to come. The shortcomings due to Russian neglect had to be overcome, the destruction caused by the War to be repaired, whilst the City's public services had to be adapted to the needs of a quickly growing population. Great difficulties were and are still being encountered by the City Administration, especially in the domain of finance; nevertheless, striking results of great importance have been attained already. All branches of education have been developed, many new school buildings having been built; the more urgent calls of social welfare and of the hospitals have been met, new asylums and hospitals having been erected; numerous new streets have been built and paved; the total length of tramway lines has been doubled by the opening of many additional routes; the water and the sewage services have been extended; the output of the gasworks has been raised and a gas bye-products plant has been established; the city cleansing service has been made more efficient; the magnificent Prince Poniatowski Bridge, destroyed during the war, has been rebuilt; new abattoirs have been erected and the construction of a great central abattoir is planned; a large municipal mechanical bakery and a milk supply for the population of the City have been organised; the regulation and the organisation of the suburbs is in hand.

The results so far attained represent but a fraction of the great investment plan for the whole development of Warsaw. The further realisation of this plan depends entirely upon the City's financial organisation.

This is already working normally, the City budget not only covering current expenditure

but also sufficing for certain investments. Of course, special funds would be necessary for large-scale investments, and in this direction the situation has also showed signs of improvement. The increasing confidence of foreign capitalists in the Municipality of Warsaw, was shown recently by the granting of \$ 10 million loan by a combine of American banks. There are, therefore, reasons for supposing that the necessary funds will be found for the realisation of the municipal plan of raising Warsaw to the level of the other great capitals of Europe.

* * *

The following data illustrate the financial situation of Warsaw, its present expansion and the nature of the projected future development of the chief municipal enterprises.

I. — THE FINANCES OF THE CITY OF WARSAW

In the past, Warsaw had no financial organisation corresponding to the needs of the capital of a great State. This was as a result of the City being administered during Russian times as one of the provincial towns of the far-flung Russian Empire, whilst during the German occupation of Warsaw, it was, as a city behind the lines of the German armies, treated merely as a convenient object of exploitation. It was only after Poland regained her independence that the Municipality of Warsaw was, in 1919, constituted and work could be commenced upon the organisation of a financial system. This work was attended by great difficulties and could have, at that time, only a provisional character, as the finances of the City were dependent on the financial policy and economic conditions of the whole country. It is a matter of common knowledge that both of these factors during the first years of Poland's re-birth as a State, underwent great fluctuations and even violent shocks.

The greatest obstacles to the organisation of a permanent and rationally organised financial system lay in the lack of appropriate legislative authority for the imposition of rates and in the continuous depreciation and



THE TOWN HALL, WARSAW

inflation of the currency, which, often within exceedingly short periods of time, nullified all programmes and economic plans for the future. It thus proved impossible to introduce a permanent financial policy at the time, and the economic policy of the City had to be conducted on a hand-to-mouth basis, influenced by transient conditions and incidental opportunities of satisfying the more urgent needs of the City.

A distinct change for the better in these conditions took place in 1924. The Communal Finance Provisional Payments Act of August 11, 1923, had conferred upon Municipalities clear authority to impose taxes, whilst the introduction of a gold currency at the beginning of 1924 rendered it possible to prepare budgets based on practically achievable expectations and possible of execution with merely minor modifications. Certain difficulties arose at later periods, often of a serious nature, connected with renewed currency fluctuations; nevertheless, since 1925 the municipal budget has been balanced and so maintained.

The property of the City of Warsaw is

valued at about £ 400 million and comprises real estate, equipment, water and sewage systems, gasworks, tramways and other municipal undertakings. This figure is not final as the exact inventory of certain city enterprises has not yet been completed. The indebtedness of the City, after statutory conversion into Złoty, amounts to £ 90 million, this sum including all loans received before, during and after the war, but excluding the \$ 10 million American loan lately concluded. Thus, it will be noted that the total debt of the City represents less than half the value of its property. Payments of interest on all the City's debts amount to about £ 14 million per annum, this sum representing about 15 per cent of the normal budget of £ 90 million.

The chief source of income shown in the municipal budget is taxation, which accounts for 59 per cent of the City's revenues. This taxation is composed of three groups of public levies, viz.: a share in the tax receipts of the State, supplementary levies on State taxes, and municipal rates, levied and collected by the City Administration. Municipal rates

represent about 40 per cent of the taxes paid to the City, the remainder being payments from State taxes and supplements to the same. It is clear from this that the fiscal policy of the City is to a large extent dependent on that of the State.

The next most important source of revenue is that of various payments, such as: for hospital treatment, for chimney sweeping, and other special payments exacted in return for various services rendered, and for trading licences granted by the City authorities. This

together for 14 per cent of the total disbursements; cost of street maintenance represents 12 per cent of the City's expenses; administrative costs amount to 11 per cent of the total, 3 per cent of this figure representing salaries and wages.

The normal expenditure of the City amounts to £ 90 million in round figures, i. e., about £ 88 per head of population per annum. The incidence of taxation is about £ 51 per head. It will be noted, therefore, that the figures of expenditure and of taxation incidence are



THE NEWLY REBUILT PRINCE PONIATOWSKI BRIDGE
(PHOT. J. MALARSKI)

item represents about 17 per cent of the normal budget total. Then follow revenues accruing from municipal properties, accounting for 18 per cent of the City's income; this figure includes receipts from municipal enterprises which amount to 11 per cent of the total budget revenue. Receipts from these enterprises are taken as net, after capital sinking fund deductions, and the net profits attained are in reality larger than those shown in the budget.

The remaining 6 per cent of the City budget, comprises sundry minor receipts, such as: fines for delays in paying rates, reimbursements of receivable amounts expended, pension fund subscriptions, &c

The most important item of expenditure in the City budget, amounting to 23 per cent of the total, covers the Public Health Services (Hospitals and Sanitary Department); social welfare and education (school maintenance and Municipal Training Courses) account

considerably lower than those of the other large cities of Europe.

Apart from the ordinary budget of the City, the estimates for 1928/29 include a municipal enterprises budget which totals about £ 100 million of ordinary expenditure, and in addition, an extraordinary supplementary budget covering investment outlays of the Administration and Municipal enterprise sections, which will amount to over £ 100 million. The total budgetary expenditure of the City for 1928/29 has been estimated at the gross figure of £ 300 million. The extraordinary supplementary budget will be covered by loans received by the City. The American loan will cover an important part of these expenses, but is ear-marked only for investment in income-producing utilities.

A comparison of the City's present with a pre-war budget would not be very enlightening, in view of the great changes in conditions which have taken place; the area of

the City has increased greatly and with this, the tasks of the civic administration; nevertheless, certain figures are given as an illustration of Warsaw's budget for 1913, the last before the Great War.

The total budget of the City in that year amounted to 13,300.000 Roubles, which at the rate of 1 Rouble = ₹ 4.65, is the equivalent of ₹ 61,845.000. If, however, the general increase in prices (from 50 to 60 per cent), as compared with the value of gold, be taken into consideration, it can be stated that the 1928/29 budget totals are little different to the 1913 figures. The sources of revenue have, however, changed fundamentally. Thus, whilst taxation in 1913 yielded about six million Roubles, or about 45 per cent, at present this accounts for about 59 per cent of the total income of the City. Moreover, the incidence on various classes of tax-payers has changed considerably. The 45 per cent figures quoted included 32 per cent of the total revenues of the City covered by the Real Estate Tax, whilst at present this tax yields only about 6.5 per cent of the total income. The reason for this great change lies in the decrease in the monetary return given by urban real-estate, brought

about by the Tenants' Protection Act. Present net receipts from municipal enterprises also exhibit a considerable fall as compared with 1913. These amounted to 4,967.000 Roubles in that year, or 37 per cent of the total budget revenue: to-day the percentage of these receipts is diminished, accounting for only 11 per cent of the City's revenue. The earnings of these enterprises have fallen as a result of greatly increased payrolls and commodity prices, whilst the general impoverishment of the population renders it impossible to augment tariffs and fees, which are on the whole lower, in some cases considerably so, than pre-war rates.

The changes in the sources of the City's revenues since pre-war times, have necessitated the imposition of new taxes, unknown before the war, with the result that the number of taxes has increased excessively. This must be admitted to be undesirable, burdensome for the tax-payers and cumbersome for the municipal fiscal authorities. With the return of normal economic conditions, this state of affairs should undoubtedly quickly change for the better.



WATER FILTERS, WARSAW

II. — MUNICIPAL PUBLIC UTILITY SERVICES

A. — Water and sewage system

The extent and efficiency of the sewage and of the water system of a city are of first-rate importance to its normal development and the favourable sanitary condition of its inhabitants. Warsaw early understood this necessity, and in 1877 had already commenced the construction of modern water and sewage

systems, after the plans of and under the direction of W. Lindley, a sanitary engineering specialist well known throughout Europe. The systems were completed in 1886, and during subsequent years, especially after the Great War, have been constantly extended and increasingly perfected.

The Warsaw watermains are supplied with water from the river Vistula. The riverside pumping station was worked until a few years

ago by nine 110 HP. steam engines, each having a daily output of 17.500 cub. m. In 1924, the installation was supplemented by three Sulzer (Winterthur) centrifugal pumps operated by electricity, each having a daily output of about 26.000 cub. m.

The water first passes through settling tanks, where about two-thirds of the matter in suspension remain and about 30 per cent of the bacterial content; thence the water passes to the filters, comprising six groups of six filters each, possessing a total filtering surface of 82.236 sq. metres. After the final purification, part of the water flows by gravity to the lower parts of the City; the rest is pumped to the upper districts by six steam and three electric pumps. The total daily output of the filter stations amounts to 217.500 cub. m. The water-pipe system of the City is constantly being extended and on January 1, 1927, had a total length of 350 kilometres.

The City Council is also extending the sewage system very energetically, especially attending to the needs of the suburbs and outskirts of the City, left by the Russian authorities in a very neglected sanitary state. The total length of the sewage system was on January 1, 1928, 223.26 km. The installations are mostly well up to modern technical standards.

The extension of the waterworks and the sewage systems is proceeding continuously. The Administration has elaborated an investment programme for the immediate future, and also a much wider programme to cover the next 20 years or so; the latter includes the building of settling tanks, the installation of additional pumps at the riverside pumping station, the construction of new rapid filtration installations, pure water reservoirs, &c. at the filter station, and the building of an elevated reservoir, a special watermain for the Praga suburb and the general extension of the sewage system. The estimated cost of the realisation of this programme is about £ 140 million.

B. — The Warsaw Municipal Tramways

Electric trams were introduced into Warsaw in 1908. The tramway system was constructed entirely by municipal funds, but was exploited by a private concern, on the strength of a contract which was to expire in 1921.

The system embraced 35 kilometres of the

busiest streets in Warsaw, the outlying districts of the City remaining entirely without transport facilities.

In 1916, the German occupation authorities took the administration of the tramways over from the lessees. The German administration continued until November 11, 1918, when the Municipality took over the system, at the same time cancelling the contract with the former lessees on a mutual consent basis.

As a result of war operations and requisitions of tramway material and equipment by the occupation authorities, the undertaking lost much of its value during 1914 — 1918, and the conveying efficiency of the trams dropped in a most disquieting manner.

The reorganisation of the enterprise was commenced during 1919, but a fresh obstacle arose, namely — a new war with the Bolsheviks, which had the effect of depleting the tramway staff and postponed to a future period the satisfaction of the urgent needs of the tramway system. It was only in 1921 that the tramways could commence to make good the losses suffered during the years 1914—1920. The technical crisis which had overtaken the tramway system reached its culminating point on November 6, 1920, when only 76 motor-waggons were in operation. From that date, however, conditions have steadily improved.

The following table shows approximately the losses suffered during 1914—20 and the progress which has been made between November 11, 1918, and the end of 1927:

	1913	1918	1927
Length of tramway lines — in kilometres	35	42	85
No. of actual waggon-kilometres — in millions	14.8	9.9	29.2
Maximum number of waggons travelling	246	198	498
Passengers transported — in millions	86	95	218

The whole equipment of the enterprise has increased in proportion to the growth shown in the above table.

It should further be added that during 1920—1925, auxilliary motor-bus services were organised for the purpose of connecting up the tramway services with the outskirts of the City. As new tramway routes are opened up, these omnibus lines are being abandoned.

The existing tramway service, in spite of its considerable growth, is still, however, inadequate for Warsaw's needs, especially as no other form of popular conveyance is available.

The further development of the tramway system in the central districts of the City is almost impossible in view of the narrowness of the streets, lack of arterial roads, particu-



ELECTRICAL POWER STATION OF THE MUNICIPAL TRAMWAYS

larly in the West end of the City, and to the exceedingly rapid general increase of vehicular traffic.

On the other hand, it is essential that the central districts be supplied with additional means of locomotion, as passenger traffic is increasing year by year, and at present the average utilisation of the tramcars is about 7.5 passengers per waggon-kilometre.

This situation might, perhaps, be met by the inauguration on a larger scale of motor-bus services, supplementing the tramway lines, and furnishing transport facilities for those main roads not possessing tramway lines.

With this purpose, it is proposed within the next few years to arrange a municipal motor-bus service of 180 motor-buses.

The question of transport facilities for the outskirts of the City remains an open one, many of the suburbs possessing no tram or bus services whatsoever. The plans for the expansion of Warsaw provide for building at comparatively distant points around the City, in order to diminish the over-crowding

of the central districts by creating new populous suburbs. In order to meet this situation the laying of about 120 km. of additional track during the next 10 years is planned together with a proportionate increase in rolling stock and all other tramway equipment.

However, neither the inauguration of motor-bus, nor the expansion of the tramway system can solve Warsaw's transport problems. The City lies within very wide limits and the daily distances travelled by many of the inhabitants amount often to twenty or thirty kilometres. Locomotion must therefore be swift, and this neither tramcars nor buses can assure.

Apart from this, the traffic of the City is chiefly concentrated at a few points, at which traffic accommodation is already taxed to the uttermost by vehicular traffic, and for this reason neither additional tramcars nor motor-buses could here be introduced.

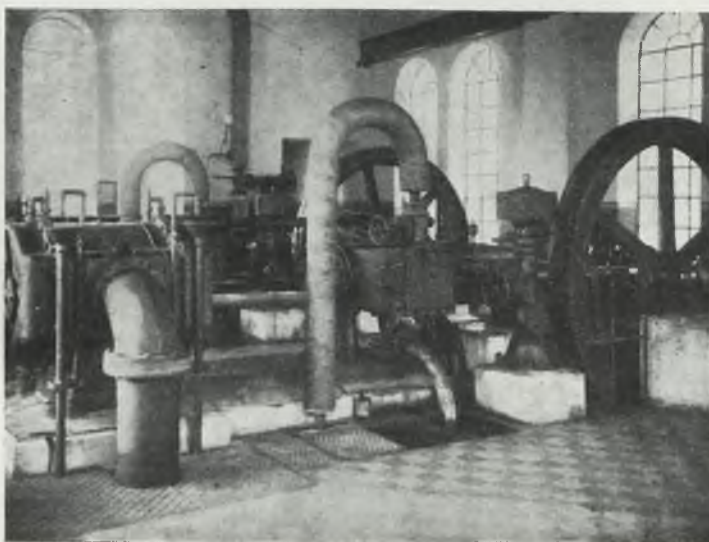
It is essential and urgent, therefore, that some more rapid means of conveyance, which would not increase street traffic, be furnished. Only an underground railway could fulfill

these conditions. Thus, together with the City's development plan, the extension of the tramway service, and the introduction of motor-buses, a plan for the construction of an underground railway has been prepared.

The constantly increasing traffic, together with the rapid growth of the City, have already brought the question of an underground railway to the fore, and investigations conducted in the matter by the Tramways

Administration are now more than theoretical studies; they may be considered as preliminaries to the actual putting into execution of the project in the near future.

Considering only the next ten years, about £ 200 million or about £ 20 million yearly will be required in order to cover the City's needs for the development of its means of passenger conveyance.



A CORNER AT THE WARSAW GASWORKS

C.—The Municipal Gasworks

The Municipal Gasworks of the City of Warsaw are the largest of the 120 gasworks to be found in Poland. The Warsaw Gasworks produce 57·3 million cub. m. or over 40 per cent of the total production of gas in Poland, this amounting to 139·1 million cub m.

Except for Upper Silesia, the Warsaw Municipal Gasworks possess the only complete coal-tar distillation plant in Poland, producing all the products obtainable from coal-tar. The bye-products obtained in the Warsaw Gasworks serve as the raw material of a factory department, called the Gasworks Chemical Factory, where coal-tar is distilled, and benzole, carbolic acid, naphthalene and ammonia are produced. This factory manufactured in 1927 from the ammoniacal liquors the following materials (in tons):

ammonium sulphate . .	380
25 per cent ammonia . .	800
anhydrous ammonia . .	10

The following tonnage of crude coal-tar has been obtained at the Warsaw Gasworks:

in 1925	4.635
„ 1926	4.759
„ 1927	4.332

The following tonnage of coal-tar has been distilled:

in 1925	9.114
„ 1926	6.832
„ 1927	9.212

In 1928 considerable building operations are to be expected, as well as the tarring or asphaltting of roads, thus leading to a greatly enhanced demand for all grades of tar. Since the prospects for marketing coal-tar products are equally promising, the Chemical Factory intends this year to raise its output to at least 12.000 tons. Apart from this, work is in hand on the increase of the capacity of the plant, such as, above all, the installation of large retorts for distillation, the construction of numerous reservoirs and of a new tar-storage tank, of a central steam production unit, with a boiler-house possessing the most up-to-date equipment, and the improvement of arrangements for economising heat in the distillation process. A benzole trap shortly to commence operations will increase the annual

production of this substance by 600 tons, and a completely new apparatus for the production of ammonium sulphate is now being assembled. Apart from this the carbolic acid factory is to be rebuilt and its equipment put on a modern basis.

D.—Other Municipal enterprises

Warsaw, with over a million inhabitants, has to conduct a series of other enterprises, serving as auxiliary services to the communal administrative system. These are in the first place enterprises connected with the public

through the medium of 70 groceries, 14 butcheries and 60 fuel stores. Besides these, a series of establishments for the diminution of first costs are conducted—such as public warehouses, garages, bakeries, &c. Turnovers in 1926 amounted to Zł 72.5 million.

A newly established enterprise is just being finished, viz. a large Municipal Bakery. The operations of the bakery will be almost entirely mechanical, the most up-to-date machinery of the highest technical excellence being installed. The daily output of the bakery, it



A MUNICIPAL MECHANICAL BAKERY,
UNDER CONSTRUCTION

food supply, such as municipal general supply stores, slaughter houses, market halls, agricultural and forest estate administration, bakeries, &c.; further, street cleansing enterprises, municipal conveying facilities, waste-recovery plant, or such financial concerns as the Municipal Savings Bank, a Mutual Insurance organisation, Municipal "Lombard", and finally such cultural establishments as the Municipal Theatres, the Municipal Cinematograph, the National Museum, the Zoological Garden, &c.

Certain of these enterprises, as a result either of their dimensions or of the important rôle they play in the life of the City, deserve special mention.

The Municipal General Supply Establishments have as their object the supplying of articles of every-day use of the best quality and at the lowest prices to the population of the City. Wholesale and retail sales are conducted

is estimated, will be 50.000 kilograms of bread, but it will be possible to raise this figure to 90.000 kilograms per day, which will amount to 35 per cent of the daily consumption of Warsaw.

The project of establishing large Milk Supply Establishments is in course of realisation; these are organised to furnish 100.000 litres of drinking milk daily, 10.000 litres of milk for infants, 4—5.000 litres of cream and 2—3.000 litres of "Jogurt" milk.

The Agricultural and Forest Administration known as the "Agril" manages the country estates and properties of the City. It also maintains a reserve of land for the expansion of Greater Warsaw; but its fundamental duty is the conduct of farming, orchards and vegetable production, industrial establishments, such as the Bielany flour-mill, the Mienie sawmill, &c., the products received serving for the supplying of the City. "Agril" supplies



THE MUNICIPAL OPERA HOUSE, WARSAW

foodstuffs in the first place to municipal institutions, hospitals, asylums, &c., milk, flour, vegetables and fruit being furnished. The annual turnover is over £ 1.5 million. The farm establishments are run on a model basis, the exploitation of the forests is conducted rationally and systematically. The area of land administered amounts to over 10,000 hectares.

Whilst waiting for the building of a Central Slaughter-House in Warsaw, the plans of which have already been completed in great detail, the City Council opened in the summer of 1926, working concurrently with the existing establishments, a large new and modernly equipped abattoir, at a cost of about £ 3 million. The slaughter-room has a surface of about 1,540 sq. metres, and is equipped with a series of installations and appliances, which will enable about 400 head to be slaughtered during an eight-hour day. This total output can be entirely stored in the refrigerators connected with the slaughter-house.

The City Cleansing Plant includes conveyances

and street-cleaning machines, waste-recovery plant and auxiliary workshops. The City Council has lately introduced the mechanical cleansing of the streets, using 22 sprinkler-sweeping automobiles, also 10 automobiles of a special type for the collection and transport of street-sweepings. The waste-recovery plant is equipped with the most up-to-date appliances and possesses its own laboratories.

The Mutual Insurance organisation, the Municipal Savings Bank, and the reorganised Municipal "Lombard" were founded not long ago. The Insurance Establishment and "Lombard" were deprived of their capital-funds by the Russian authorities when these evacuated the City, with the result that the activities of these enterprises were checked, whilst later currency difficulties rendered all business impossible. It was only after the stabilisation of the currency that they could recommence their work, and both institutions as also the Municipal Savings Bank are at present developing most satisfactorily, increasing their turnovers year by year.

KRÓLEWSKA HUTA

Upper Silesia

KRÓLEWSKA HUTA is an absolutely modern town. As recently as 1865 it was only a small workingmen's colony numbering about 800 inhabitants. In 1868, when the Prussian

policy. Before the war, the town already possessed a number of model public utilities, such as a municipal slaughter-house, market halls, a dairy, and numerous school buildings.



THE INDUSTRIAL
PORTION OF THE TOWN



MUNICIPAL
MARKET HALL

authorities then in power formally founded the town of Królewska Huta, the number of inhabitants was already 8,537 persons. To-day the population of the City amounts to over 86,000 inhabitants.

It is a purely industrial town, from 80 to 85 per cent of the population being workingmen occupied in the various collieries and iron foundries surrounding it.

The Municipal Council, which was reorganised after the war, the Mayor now being M. W. Spaltenstein, inaugurated an energetic investment

At present, many new public buildings are being erected and drainage is being installed in the suburbs which are thus being connected with the town's sewage system.

Królewska Huta is one of the largest and most progressive towns in Upper Silesia, and the fact that it is situated in the centre of Poland's chief industrial district, which is constantly developing, gives every reason to expect considerable further progress in its growth and development.

ULEN & COMPANY

Warsaw

IN PRE-WAR days the Russian Government paid little heed to the civic needs of the cities in her "Polish provinces" and even such fundamental requirements as water and sewage system were either of the most crude construction or lacking altogether. Heavy taxes were collected with exacting rigor, it is true, but very little money found its way into

of modern water and sewer systems in several of her most important cities. During the latter part of the year 1924, Ulen & Company of New York City presented a proposal through the National Economic Bank of Warsaw (the Bank Gospodarstwa Krajowego) offering to extend a credit of \$ 10,000.000 and design and build sanitary works in such cities as



SLAUGHTER-HOUSE, LUBLIN

public improvements. The result was that many of the large Polish municipalities at the time of receiving their newly won freedom presented sanitary conditions that were far below the standard of Western Europe. Most of the cities immediately took steps to rectify these conditions — and this in the face of the post-war economic depression.

In order to improve the sanitary conditions of the country, and at the same time furnish employment to the unemployed, Poland let it be known that she was ready to entertain proposals for the financing and construction

might be selected. After a thorough consideration of the offer, the cities of Lublin, Częstochowa, Radom and Piotrków signified a desire to avail themselves of this opportunity and contracts were signed during the latter part of 1924 and the first part of 1925. The first contingent of Ulen & Company's engineers arrived in Poland during March of 1925 and started the necessary engineering studies in connection with the preparation of plans, specifications and estimates for modern and efficient water and sewage systems in all four cities, and for market halls in Lublin

and Piotrków and abattoirs in Radom and Lublin. As the plans covering each phase of the operations were finished, they were presented to the proper city officials and to the Ministry of Public Works for approval. The actual construction work was initiated in Radom during June of the same year and shortly afterward in the other three cities; and by the end of 1925 work was in full swing in all four cities.

Since the above dates the work has been energetically prosecuted in all the cities, and

The policy to recruit staff in so far as possible from the citizens of the country in which the work is being done is also followed out in the matter of purchases covering the necessary materials for the work.

The figures compiled at the end of 1926 indicate that 96.4 per cent of all materials used in the works has been purchased in Poland and were of Polish manufacture. The remaining 3.6 per cent consisted mainly of abattoir equipment and construction equipment such as special pumps and concrete mixers



INTERIOR OF THE MARKET HALL, PIOTRKÓW

the indications now are that it will be completed at least a year earlier than the date stipulated in the contract.

The administrative and technical staff consisted of two hundred and seventy persons and of these two hundred and fifty were recruited in Poland and the remainder are Americans of the permanent Ulen personnel holding such positions as administrator, general superintendent of construction, accountant, chief engineer and other executive posts. As many as 6,000 labourers have been employed at a time and the relations between the labourers and the Ulen organisation are of the most friendly character.

and other machinery not manufactured in Poland.

The originally estimated cost of approximately \$ 10,000,000 was about equally divided between the four cities. Due to the falling Złoty and the application of American construction methods, it appears that the work as originally planned will be built for about 75 per cent of the estimated cost. This saving was very gratifying to the officials and the sums thus saved are used for the construction of additional improvements such as schools, labourer's barracks, storm sewers, bath houses, administration buildings, gasworks, electric lighting plants, stream control and other projects

which will either increase the city's revenue or improve the living conditions of its inhabitants.

The improvements completed or under construction for the four cities participating in the first loan are summarised as follows:

LUBLIN (population 105.000):

Sanitary sewers 39.5 km. Disposal plant consisting of: grit chamber, pumping station, Imhoff tank, and sludge beds.

Watermains 44.5 km. Shallow wells 50 m. deep for water supply. High & low service pumping stations. Reinforced concrete reservoir 3.705 cub. m. capacity. Standpipe 1.950 cub. m. capacity.

Abattoir with a daily capacity of 100 cattle, 450 calves, 125 swine, and with cooling & refrigerating plant, also ice plant with a capacity of 500 kg. of ice per hour.

Electric plant with 2 steam driven turbine-generators of 1.450 KW capacity each.

RADOM (population 63.000):

Sanitary sewers 28.5 km.

Storm sewers 2.8 km.

Watermains 31.0 km. Water pumping station. Reinforced concrete reservoir 2.324 cub. m. capacity. Standpipe 1.556 cub. m. capacity. Shallow wells for water supply.

Abattoir with a daily capacity of 80 cattle, 220 calves and 50 swine and with cooling plant and ice plant with a capacity of 300 kg. of ice per hour, and also a cattle market.

Gas plant with 4.000 cub. m. daily capacity
Gas mains 18 km.

Concrete conduit for river 2.3 km.
River regulation 3.0 km.

Open market, workman's barracks, two apartment houses, administration building, school building, bath house and green house.

CZĘSTOCHOWA (population 83.000):

Sanitary sewers 46 km. Disposal plant consisting of grit chamber, pumping station, Imhoff tank and sludge beds.

Storm sewers 9.3 km.

Watermains 62.5 km. Water pumping station. Reinforced concrete reservoir 4.036 cub. m. capacity. Development of springs for water supply. Cement pipe plant with daily capacity of 50 tons.

Administration building.

PIOTRKÓW (population 45.000):

Sanitary sewers 25.8 km. Disposal plant consisting of grit chamber, pumping station, Imhoff tank. Concrete beds and sludge beds.

Storm sewers 3.9 km.

Watermains 32.5 km. Water pumping station. Reinforced concrete reservoir 1.054 cub. m. capacity. Standpipe 1.860 cub. m. capacity. Shallow wells, 50 m. deep for water supply.

Market hall with 169 shops and stalls and cooling plant and ice plant with a capacity of 300 kg. of ice per hour.

Large open market.

Workmen's barracks.

Late in the year 1926 another credit of \$ 2,750.000 was made available to other municipalities to be used as follows:

Dąbrowa	—	Water & sewer systems
Kielce	—	" " "
Sosnowiec	—	" " " and abattoir
Zgierz	—	Abattoir and bath house
Ostrów	—	Electric lighting, plant and system
Otwock	—	Bath house-casino

POLISH SPAS AND HEALTH-RESORTS

ALMOST EVERY known and used type of natural mineral water may be found in Poland, including medicinal, dietetic and table waters, but with the exception of arsenised or naturally heated alkali-glauber salt water. The only hot springs in Poland are at present those at Jaszczurówka near Zakopane, but boring operations are in hand at the State Spa at Ciechocinek, with the object of obtaining hot saline.

The most numerous Polish mineral springs are saline and cold sulphur springs. Saline, sulphur and alkaline waters are to be found at Ciechocinek (Warsaw Voievodship), at Druskieniki (Białystok Voievodship), at Inowrocław (Poznań Voievodship), at Iwonicz (Lwów Voievodship), at Rabka (Kraków Voievodship), at Rymanów (Lwów Voievodship), and at Truskawiec (Lwów Voievodship). The Morszyn waters (Stanisławów Voievodship), are the only saline-aperient mineral water springs in Poland.

Sulphuretted mineral water is to be found at Busko (Kielce Voievodship), at Krzeszowice (Kraków Voievodship), at Lubień Wielki (Lwów Voievodship), at Niemirów (Lwów Voievodship), at Solec (Kielce Voievodship), at Swoszowice (Kraków Voievodship), and at Szkoło (Lwów Voievodship).

Ferruginous salines have been exploited principally at Krynica (Kraków Voievodship), at Nałęczów (Lublin Voievodship), and at Żegiestów (Kraków Voievodship).

Alkaline salines exist at Szczawnica (Kraków Voievodship), and at the neighbouring Spa of Krościenko.

The above-named spas are all, with the exception of Krościenko, arranged both for

baths and for the drinking of the waters. They are equipped with all the necessary medicinal baths, with arrangements for mud-baths, with hydrotherapeutic installations and with sun-bathing facilities.

Exhaustive medical investigations have shown that the Szczawnica waters correspond to those of Salzbrunn and Bad-Ems; the Krościenko waters to those of Bilin and Fachingen; the Krynica waters to those of Contrexeville, Wildungen, Franzensbad, Kudova, Reinerz, Alt-Heide and Vichy; the Żegiestów waters to those of Franzensbad, Pyrmont, Schwalbach and Alt-Heide; the Nałęczów waters to those of Spa; the waters of Rymanów to those of Bad-Hal, Soden and Kissingen; the Druskieniki waters to those of Kissingen, Soden and Homburg; the Rabka waters to those of Salzschlirf, Elster and Bad-Hal; the Ciechocinek waters to those of Wiesbaden, Kreuznach, Homburg and Kissingen; the Busk and Solec waters to those of Aix-la-Chapelle, Baden and Harrogate; the Truskawiec waters to those of Piszczany and Trenczyn; the Morszyn waters to those of Mergentheim, Kissingen, Apenta, Hunyadi-Janos, Franz-Joseph and Carlsbad.

As to Polish health-resorts, close on a hundred places possessing first-class climatic conditions may be found. The most important are Zakopane, in the Tatra Mountains (Kraków Voievodship), situated at an altitude of 1,000 metres; Bystra in Silesia (740 metres), Kosów and Kuty (Stanisławów Voievodship)—400 metres; Ojców (Kraków Voievodship)—400 metres; Jaremcze and Worochta (Stanisławów Voievodship)—700 metres; Muszyna (Kraków Voievodship)—600 metres; Otwock near Warsaw, Jaworze in Silesia (380 metres); Ustroń and Wisła also in Silesia, and



ZAKOPANE



KRYNICA



SZCZAWNICA



TRUSKAWIEC



JAREMCZE



RYMANÓW



CIECHOCINEK



DRUSKIENIKI



SOLEC



BUSK



KRZESZOWICE



MORSZYN

Uzarniecka Góra (Kielce Voievodship) — 500 metres.

The following are the most important sea-side resorts: Orłowo-Kolibki, Gdynia, Hallerowo, Wielka-Wieś, Hel and Jastarnia.

Polish health-resorts have, in spite of very great economic difficulties accomplished all that lay in their power to improve their administrative conditions, to enhance their therapeutic value, and to raise their cultural level. Whilst the results of these efforts, which have entailed much hard work and large expense, are not in every respect obvious, yet continual progress has been made.

This development work includes the discovery of new springs, the better utilisation of those already being exploited, and the extension of bathing facilities, &c. A large number of analytical and research laboratories have been installed, and hydrotherapy and nature-curing have received attention. The proper development of sports has been encouraged, and roads, leading to the health resorts and actually within their limits, have been improved.

Certain health-resorts have undertaken work on the arrangement of cheap spring and winter seasons, and towards the organisation of winter seasons generally.

The total number of visitors to Polish health-resorts in 1927 amounted to 250,000. This represents an increase of 30 per cent over the figure for 1926, but by no means even partly exhausts the number of those who would desire to benefit from these resorts. The visitors to Polish health-resorts

have up to the present amounted to only 1 per cent of the total population, being thus several times lower than the corresponding figure for Western Europe. The number of persons benefiting from Polish health-resorts must increase considerably in the future, and the resorts themselves must therefore make the necessary arrangements for coping with this increase. For this reason, Polish health-resorts present a first-class investment for capital, since the increase in their frequentation provides an absolute guarantee for capital investments.

The construction of water and sewage systems, the building of roads, the modernisation of equipment, the extension of bathing facilities, and their equipment with the newest balneotechnical installations, the erection of electro-, physico- and mechano-therapeutic establishments, as also of hydro-therapeutic and X-ray departments, and finally the building of hotels, casinos and villas — will, for many years to come, present an excellent field for the investment of capital.

One of the more important unexploited sources of income in connection with Polish spas, is the export of mineral waters. All the Polish springs together export about a million bottles yearly; this figure, however, is far from what even the home market could consume, and is insignificant compared with the output of the springs themselves. The conduct of this branch of activity in a rational manner and with the backing of the necessary capital assures certain and very high profits for investors.

P O L I S H S T A T E C O A L M I N E S

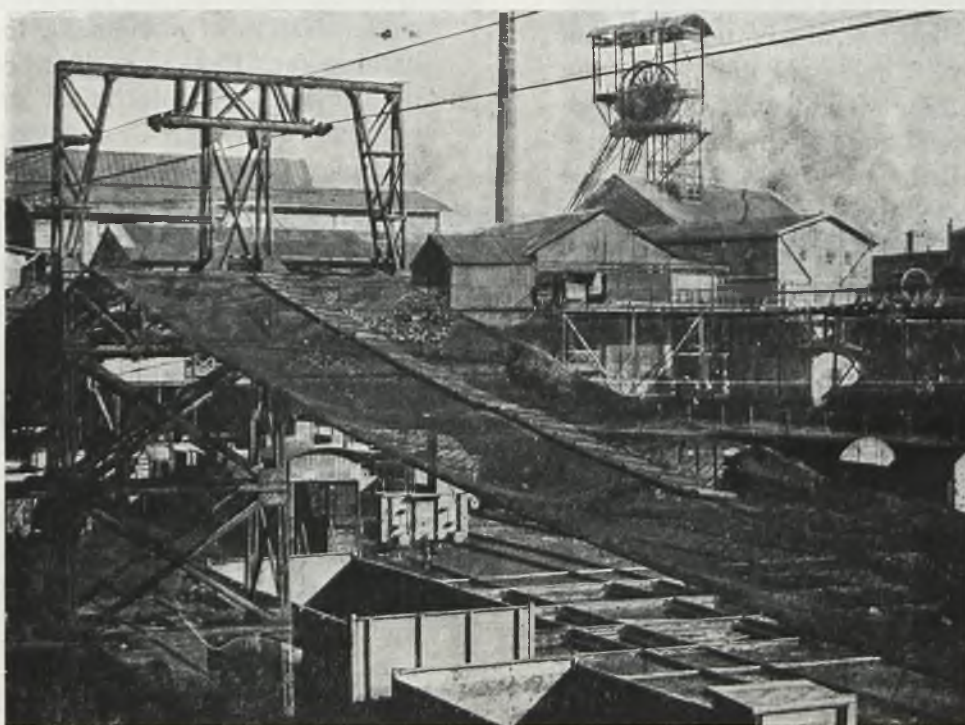
In Upper Silesia

Królewska Huta

WHEN TAKING over Upper Silesia, Poland also recovered the former Prussian fiscal mine property. The area of the coal mines thus becoming the property of the State

cent of the total Upper Silesian production. About 7.000 workmen are employed.

During the last years, since 1924, these Government mines in Upper Silesia have



COAL SORTING PLANT (PHOT. S. PLATER)

Treasury is 35.320 ha, and the coal reserves are calculated at about 9 billion tons. A portion of this area has been leased for a period of 36 years to the Polish State Coalmines Ltd., of Królewska Huta, in which company the Polish Government has 50 per cent of the shares, while the remainder is in the hands of private French capital.

Coal extraction is being carried out in three mines, at Królewska Huta, Bielszowice and Knurów. The output of the three mines is about 3 million tons per year, or 10 per

made large investments. In Knurów there has been built a by-products factory; "Foch" shafts have been constructed for the extraction of coking coal, on the most up-to-date lines. In the Król mine mechanical extraction is largely utilised, Sullivan diggers have been received and electrical transport installed. Large sums have also been spent on Gdynia, where a section of the port is being constructed for the exclusive loading of the Polish State Coalmines coal products.

THE HOHENLOHE WORKS

Joint Stock Company

Wełnowiec, Upp. S.

THE HOHENLOHE Works (Hohenlohe-Werke) Joint Stock Company was established on April 1, 1905, and includes a considerable portion of the former mining properties of Prince Hohenlohe-Oehringen in Polish Silesia.

The Hohenlohe Works are occupied in the mining of coal and of ores (zinc, lead and sulphur ores) and in the smelting and refining of the latter.

The establishments of this concern employ altogether about 15.000 employees.

The chief branch of production is in the mining and in the sale of flaming coal. Apart from the following mines actually in operation, the Hohenlohe Company also owns coal-fields of considerable extent, not yet, however, exploited.

Coal is now being obtained from the following collieries: "Maks" (Michałkowice), "Wujek" (Katowice-Ligota), "Jerzy" (Mała Dąbrówka) and the Amalgamated Hohenlohe-"Fanny" mine (Wełnowiec).

These mines have not yet reached the full stage of their development but possess the most modern equipment. A briquette factory is run in conjunction with the "Wujek" mine, the yearly production amounting to about 100.000 tons.

The following establishments belong to the Hohenlohe Works:

Name:	Products:
The Hohenlohe Zinc Works at Wełnowiec	Crude refined spelter Crown Brand H.H. spelter (double refined) Soft foundry lead, and zinc dust

Name:	Products:
The Hohenlohe Zinc Rolling Mills, at Wełnowiec	Zinc sheets
The Scheller Foundry zinc blende roasting and sulphuric acid plant, at Mała Dąbrówka	Roasted zinc blende for the above named zinc works Sulphuric acid Oleum 12—20 per cent
The "Christian Kraft" zinc ore enrichment plant, at Szarlej	Zinc oxide

Besides these establishments, the Hohenlohe Company possesses the Nowa Helena, Brzozowice and Szarlej mining companies, producing zinc blends, calamine, lead ore and pyrites.

In addition, the Company owns numerous arable and forest estates and its own brick-kilns.

The products of the Hohenlohe Company are marketed through the following firms:

In Poland, by Messrs. "Fulmen" Co., Katowice;

In Czechoslovakia, by M. J. Petschek, Aussig;

In Austria, by Messrs. J. Petschek Co. Ltd., Vienna;

In Hungary, by Messrs. Herman Winter Co., Budapest;

In Italy, by Messrs. "Fulmen" Co., Katowice and by M. J. Petschek, Aussig.

Zinc sheet is sold in Poland by the Sales Bureau of the United Zinc Sheet Rolling Mills, Katowice, and abroad by the Zinkwalzwerksverband, Berlin. Sulphuric acid sales are conducted by the Sulphuric acid United Sales Co. Ltd., Katowice, whilst zinc, lead and the various bye-products are sold directly by the Hohenlohe Works.

THE "ROBUR" COLLIERIES SYNDICATE

Katowice, Upp. S.

THE LARGEST dealers in coal in Poland are the Robur Upper Silesian Collieries Syndicate of Katowice (Manager, A. Falter). The output of the collieries belonging to this syndicate amounts to nearly 40 per cent of the total production of Upper Silesia.

The following collieries are members of the Robur Syndicate:

1. — The Rybnik Coal Mining Co. of Katowice, with the Anna, Emma and Romer pits, the Emma coke works and the Emma and Romer coal briquette works.

2. — The Godulla Joint Stock Co. of Chebzie, with the Gotthard, Paul and Lithandra pits.

3. — The Eastern Upper Silesian Industrial Works of Ruda, owned by Count Mikołaj Ballestrem, with the Wawel, Wolfgang and Count Franciszek pits and the Wolfgang coke works.

4. — The Count Donnersmark Mines and Foundries of Świętochłowice, with the Śląsk, Niemcy, Donnersmark and Blücher pits.

5. — The Peace Foundry Joint Stock Co. of Katowice, with the Peace coal mine and coke works.

6. — The Waterloo Coal Mining Co. of Katowice, with the Eminence pit.

7. — The Charlotte Coal Mining Co. of Katowice, with the Charlotte pits.

8. — The Wirek Joint Stock Co. of Nowa Wieś, with the Hildebrand and Błogosławieństwo Boże pits.

All the above mentioned collieries belong to class I-A of the standards fixed by the Upper Silesian Coal Convention, whilst the coal produced by them is used both in Poland and abroad by all branches of industry, by gas-works, for household fuel, &c.

Besides domestic sales, the "Robur" exports its products to the Scandinavian and Baltic countries, to Austria, Hungary, Czechoslovakia, Italy, Russia, and it possesses numerous sales agencies in Poland.

The syndicate owns and controls the "Pol-skarob" — Polish-Scandinavian Transport Joint Stock Co., operating in Danzig and Gdynia; this firm handles the re-loading of coal at its own transshipment quays. The "Robur" Syndicate has recently purchased several large sea-going vessels and intends to maintain its own regular steamship lines between the ports of Gdynia and Danzig and the chief overseas markets.

THE WATERLOO MINING COMPANY EMINENCE PIT

Katowice, Upp. S.

THE WATERLOO Mining Co. (Eminence Pit), operating on old-established privileges, was founded in 1838. After a period of reconstruction, the Company has been exploiting since 1904 the Eminence, Załęże and Melchior-seegen anthracite pits.

The area of the concession amounts to about 2,500,000 sq. metres, whilst the remaining territory occupied comes to about 72 hectares.

Eminence Pit coal burns with a long flame and contains little impurities, namely — from 3.2 to 5.7 per cent of ash and only 0.6 to 0.9 per cent of sulphur. For these reasons, as

well as for its high calorific value (6,900 — 7,350 calories), this coal is in great demand for household as also for industrial uses.

In 1927, 368,000 tons of coal were produced. Of this amount, 68 per cent was consumed in Poland, and the remainder exported to Sweden, Denmark, Finland, Austria, Czechoslovakia, Switzerland and Rumania.

The Company employs 945 workmen and officials.

Sales are conducted by the Robur Upper Silesian Collieries Syndicate, Katowice, and by all its home and foreign branches.

THE POTASSIUM SALTS EXPLOITATION Co. LTD.

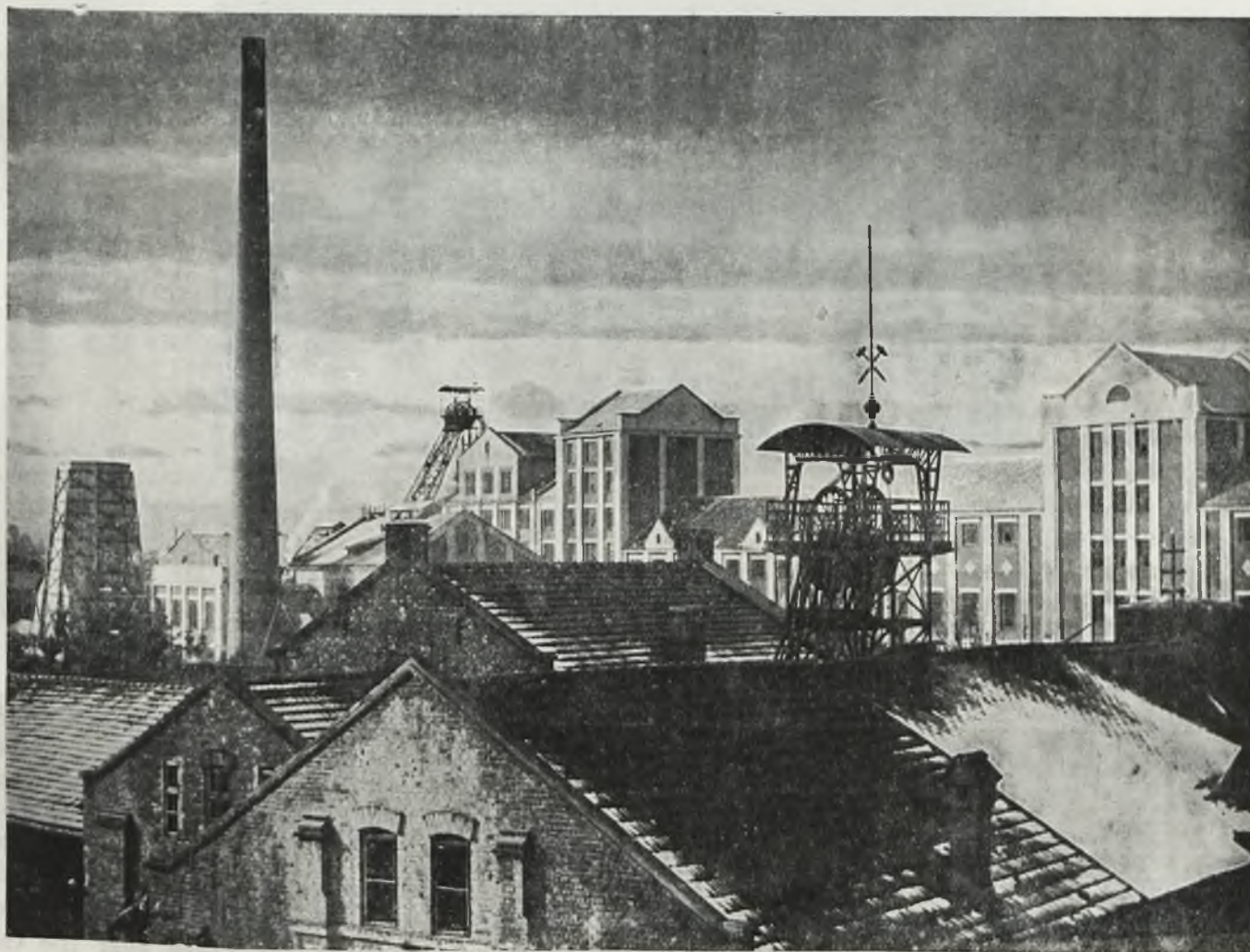
L w ó w

AMONG THE various kinds of natural wealth in Poland, one of the most precious is potassium salt, because this mineral is comparatively rare in the world. In Europe, potassium salt beds are well known in Germany and the French province Lorraine, and both these centres act in consort on the international market, exerting in this manner the influence of a monopoly.

Under such conditions the possibilities of exploitation of potassium salt mines in Poland should be interesting not only to Poland. And these possibilities are very considerable.

Potassium salt beds are found alongside rock-salt beds in South Western and Western Poland. Yet only in the first mentioned district are the beds properly prospected and exploited. In Western Poland, in the vicinity of Inowrocław, the potassium salt beds are the problem of the future; their quantity and quality promises to well repay those who will undertake the prospecting work and invest capital.

In the prospected region of the Carpathian foothills (Kałusz and Stebnik) attempts were made to mine the potassium salt at an early date. These attempts, however, constantly



NEW POTASSIUM SALT CONCENTRATING WORKS AT KAŁUSZ (PHOT. S. PLATER)

failed and from the outset were bound to be unsuccessful, for the former Austrian Government, which administered these lands, obviously acting under pressure from the German Government (which wished to protect its own

the most important product. The reserves of potassium salts in the whole belt from Kałusz to Stebnik, are estimated at 100 million tons of K_2O . Beyond this quantity there are undoubtedly much greater reserves,



INTERIOR OF A POTASSIUM SALT MINE AT STEBNIK
(PHOT. S. PLATER)

industry and its monopoly standing on the international market), constantly hampered all efforts towards operating the mine.

Therefore the development of this branch of industry began in fact only after the war, when the territory returned to the Poles.

At present two potassium salt mines are being exploited, at Kałusz and at Stebnik. Sylvin (KCl) and kainite ($KCl \cdot Mg \cdot SO_4 \cdot 3H_2O$) with small amounts of karnalite ($KCl \cdot Mg \cdot Cl_2 \cdot 6H_2O$). In this the Polish deposits differ radically from the German, where karnalite is

wholly uninvestigated, the existence of which is, however, definitely stated by geologists.

The potassium salt beds in South Western Poland are the property of Government. Both active mines, Kałusz and Stebnik, have been leased to "The Company for Exploitation of Potassium Salts Ltd.", in which the Government is interested to the extent of two-thirds of the capital. At present the Bank Gospodarstwa Krajowego has taken over the Government investment in this undertaking.

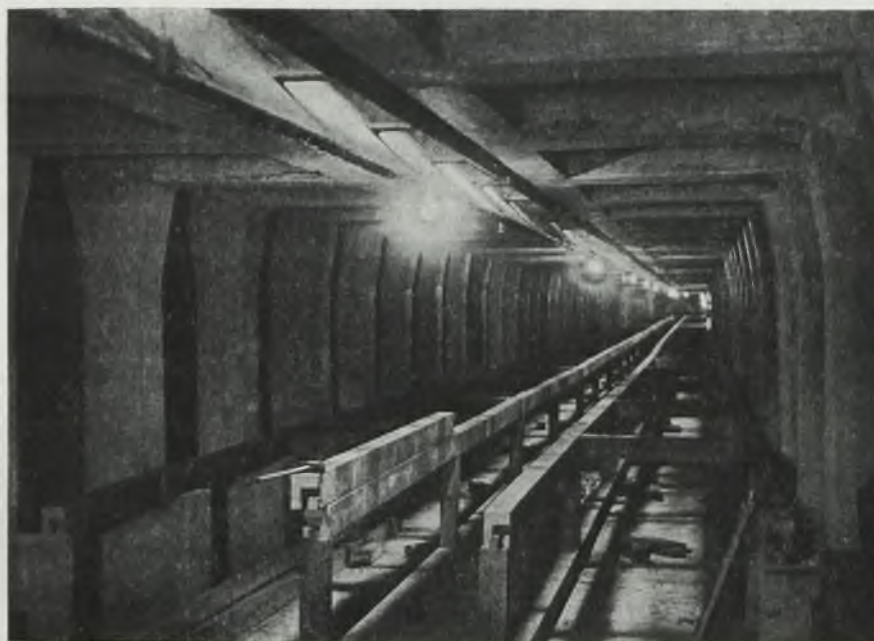
The development of potassium salts extraction on this territory is illustrated by the following table (in quintals):

	<i>Kałusz mine:</i>		<i>Stebnik mine:</i>
	<i>kainite</i>	<i>sylvin</i>	<i>kainite</i>
1921	93.169'85	148.162'40	—
1922	129.016'20	427.988'50	—
1923	69.775'50	406.792'95	79.941'43
1924	65.952'64	499.771'—	83.894'05
1925	29.135'80	1,056.754'10	428.121'33
1926	2.227'38	1,053.209'70	752.937'80
1927	307.585'37	1,077.576'70	892.686'82

The very considerable increase in the output of potassium salts at Kałusz in 1927, is explained by the construction of a large

home market. The increase in consumption by agriculturists of artificial fertilizers is one of the chief cares of the Polish Government. This consumption is very small in comparison with other European countries and it has not even reached the pre-war level. Since the intensification of agriculture in Poland is advancing rapidly, it is in this very smallness of artificial fertilizer consumption that lies the potential possibilities of its development.

The development of production by the Company for the Exploitation of Potassium Salts, has reached a critical point: the existing and tested mines are in full exploitation and the moment is approaching when new mines



NEW INSTALLATIONS IN THE POTASSIUM
SALTS INDUSTRY (PHOT. S. PLATER)

and entirely modern concentrating plant which has been operated during that year.

Thanks to this plant and a number of other investments, the Company has been able to increase the supply of potassium salts on the

will have to be prospected and constructed, which will require further investments. In view of the great importance of this industry to Poland the necessary investments have been definitely planned.

THE SILESIA UNITED ROYAL AND LAURA FOUNDRIES

Joint Stock Co.

Katowice, Upp. S.

THIS FIRM, having its main office in Katowice, is one of the largest industrial combines of Upper Silesia. The company comprises:

Anthracite coal mines: The Countess Laura mines near Królewska-Huta, the Laura

Coal sales are entrusted to the "Progress" syndicate of Katowice, whilst bye-products such as coal-tar, ammonia, benzole &c. are marketed by the "Carbochemia" Company of the same city.



GENERAL VIEW OF THE ROYAL FOUNDRY (PHOT. S. PLATER)

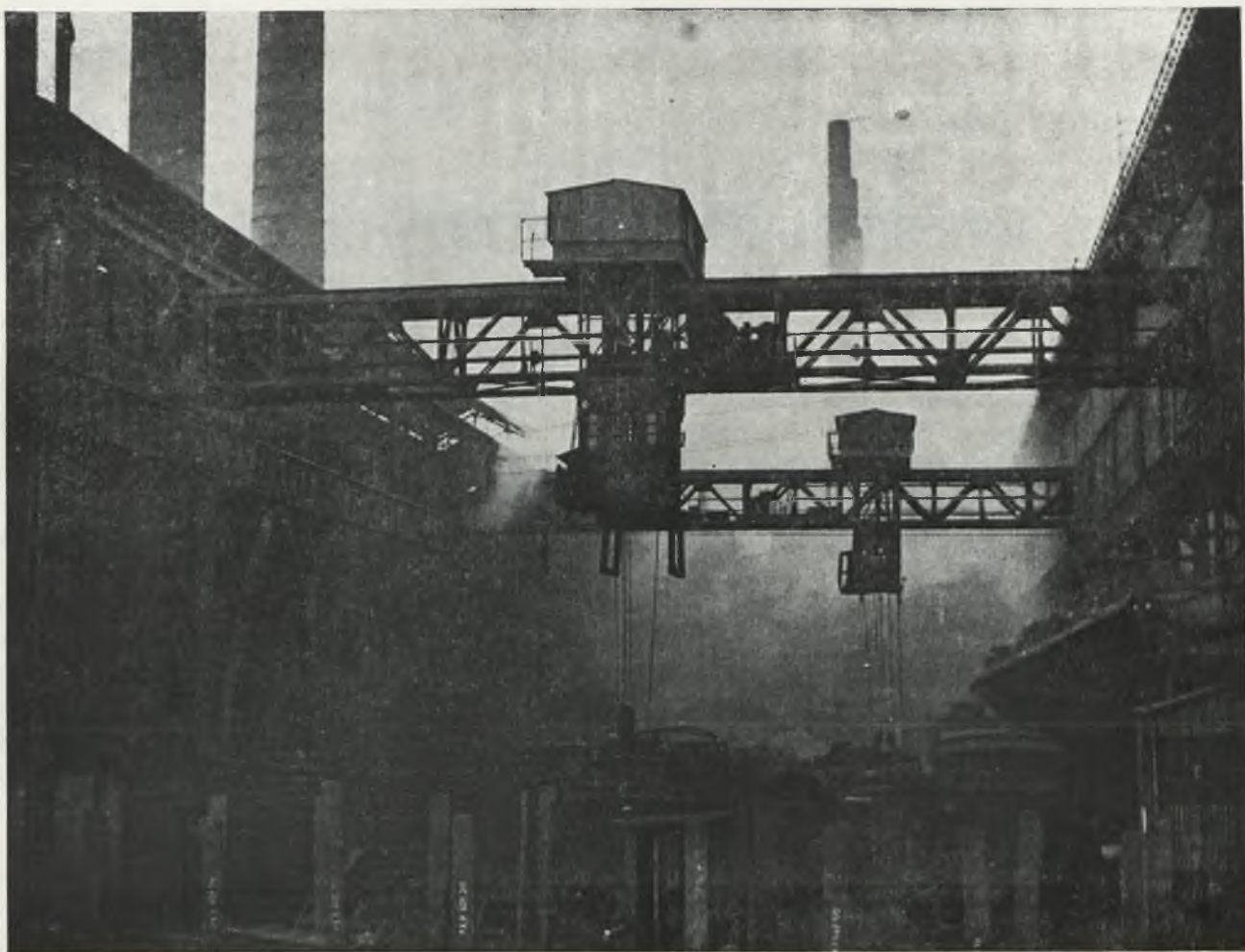
Foundry and Richter pits in Siemianowice, and the Dębieńsko pit near Czerwionki.

The Dębieńsko mine possesses a coke works, the greater part of output of which is used for a foundry belonging to the same concern.

The annual output of coal amounts to about 2,500.000 tons, and of coke — to about 100.000 tons.

The Royal and Laura Steel and Iron Foundries produce: pig and haematite iron, thomasite, martinsite, cast steel, bar and sheet iron, railway permanent way material, axles, tyres and waggon wheels, gas pipe and boiler tubes, &c.

The annual production of unworked steel amounts to about 330.000 tons.



ONE OF THE WORKSHOPS OF THE SILESIAN UNITED FOUNDRIES (PHOT. S. PLATER)

The Mechanical Workshops in Królewska Huta manufacture: railway freight waggons up to the maximum carrying capacity for normal and narrow-gauge lines; cisterns for the transport of tar, petroleum, alcohol, acids, &c., refrigerator waggons (about 3.000 waggons are produced yearly); wheel and axle sets, wrought and stamped waggon parts, springs and railway rails of every type; iron bridges for railway, road and military purposes; construction iron of all kinds for sheds and roofs.

The "Zgoda" Foundry, engaged in machine construction, producing boilers and steam engines, coal and ore conveyors, petroleum boring rigs, compressors, refrigerating plants, sawdust transport and combustion plants, desicating equipment for all purposes, hoists and travelling cranes of all kinds, presses and stamping machines (John patented system), &c.

The works employ about 16.000 workmen.

"FRIEDENSHÜTTE" LTD.

Nowy Bytom, Upp. S.

THE ABOVE establishment was founded in 1840 in Polish Upper Silesia. Gradually expanding, it took over many further branches of mining and foundry production, becoming one of the largest undertakings of Upper Silesia.

This establishment at present embraces:

- 1) the "Friedenshütte" iron foundry in Nowy Bytom,
- 2) the "Pokój" colliery in Nowy Bytom,
- 3) dolomite quarries and iron ore mines in Tarnowskie Góry.

The establishments employ about 7.500 hands.

The most important of these establishments is the iron foundry, which has the following branches of production:

- a) coke ovens, with an annual output of 270.000 tons of coke, 11.400 tons of coal-tar,

4.000 tons of ammonia and 4.000 tons of raw benzole,

- b) six blast furnaces with a daily output of 1.200 tons of pig iron; besides cast iron, hematite and Martinsite, the blast furnaces produce spiegel iron and ferromanganese,

- c) a Martin steel works, with 6 furnaces, producing up to 200.000 tons of crude steel yearly,

- d) rolling-mills for gauges, cranes, thick sheets and universal iron, a forge and hammering department, constructional workshops, steel and non-ferrous foundries, a spade factory, a saw factory (in course of construction) and an oxygen plant.

The "Friedenshütte" works have recently commenced further important extensions, and are constantly improving their technical methods of production.

"BAILDONSTAL" LTD.

Katowice, Upp. S.

THIS UNDERTAKING is a foundry established in 1830 by John Baildon, a Scotsman, and is one of the oldest establishments of its kind in Upper Silesia.

The equipment of the works includes: Siemens-Martin furnace, 3 electric furnaces, iron and steel rolling mills, wire and rod drawing workshops, steam hammers, pressing and forging sections, all kinds of iron and steel working machinery, steel casting

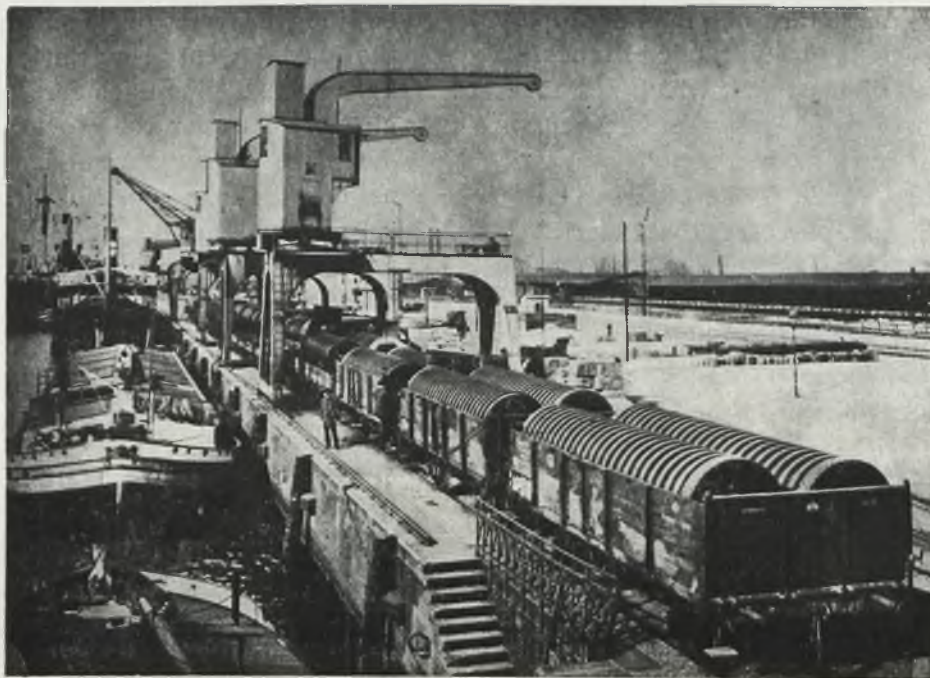
department, engineering and chain workshops, &c.

The production is based on up-to-date methods, there being modern fully equipped chemical, physical, metallurgical and metallographical laboratories for the control of operations in all their phases and processes.

The "Friedenshütte" foundry and the "Baildonstal" have one and the same Board of Management.

POLISH TUBE MANUFACTURERS' SALES BUREAU L T D.

K a t o w i c e, U p p. S.



LOADING OF POLISH-MANUFACTURED PIPES

THE POLISH Tube Manufacturers' Sales Bureau Ltd. is the sales organisation of the Tube Syndicate, embracing all the tube factories in Poland, namely:

The Silesian United Royal and Laura Foundries Ltd.

The Bismarck Foundry

The Sosnowiec Tube and Iron Company

The Huta Bankowa Foundry

The Bureau markets the entire tube production of the above foundries, both at home

and abroad, with the exception of certain special products of the Bismarck Foundry.

The object of the Tube Syndicate Bureau is the regulation of the home market by the fixing of a price policy and by the organising of wholesalers.

With regard to foreign markets, the Tube Syndicate has joined the International Tube Cartel, the members of which are: France, Germany, Czechoslovakia and Hungary. These countries co-operate in gaining new export markets for their products in competition with British and U. S. tube factories.

"F E R R U M" LTD.

Zawodzie - Katowice, Upp. S.

THE ESTABLISHMENTS of the "Ferrum" Ltd. occupy close on a 100 ha, and possess four departments comprising a steel foundry, a workshop producing axles and small iron articles, another in which apparatus are constructed, and finally a workshop the speciality of which is the manufacture of pipe-lines up to the largest dimensions for hydraulic turbines. The last-mentioned department, which is run in connection with a water-gas welding shop, is the only one of its kind in Poland.

The steel foundry, which is the oldest established in Upper Silesia, possesses three Martin furnaces, and produces steel castings of any required quality up to a weight of 10 tons. These castings are usually machine parts of all kinds, in particular gear wheels up to 5 metres in diameter, shaped tubes for turbine pipe sets, valve chambers, press cylinders and other cored castings, roller rings, large crucibles for galvanising, armour plates for tube tanks, rings for breakers, base-plates, base-plates for bridges &c.

The axle foundry produces axles for ordinary and military cars and waggons, screws, nuts, rivets and small iron parts for permanent way use.

The apparatus shop uses sheet iron, welded by the water-gas process in a special welding shop, for the manufacture of various apparatus for the cement, chemical industries, such as revolving furnaces, drums for drying purposes and the firing of pipes, ammonia boilers and other appliances and reservoirs of large size, able to withstand high pressures.

The main factory manufactures water-pipes for high and low pressure systems, in particular for hydro-electric stations. Such pipes are also manufactured by welding with water-gas, the annual production being up to 20.000 tons. The welding shop possesses a number of powerful welding machines, as well as hand welding appliances, and works on cast iron sheets of thicknesses from 6 to 60 m/m., the welding being of a quality in no way inferior to that of any foreign product. This department of the "Ferrum" factory, possessing as it does large high-temperature furnaces, numerous workshops and every kind of

mechanical appliance, a special experimental laboratory &c., produces goods on the excellence of which is based the high opinion enjoyed by the "Ferrum" Ltd., and which are well known on the world market. The international importance of the "Ferrum" Ltd. may be judged from the fact that it has within the last twenty or thirty years supplied hundreds of pipe-lines for hydraulic turbines virtually all over the world, often having to overcome German, American and Italian competition. These pipe-lines, of a diameter of one to two metres or more, conduct water for power purposes, often representing millions of horse-power, from heights of from a few hundred to a thousand metres to turbine stations in valleys, withstanding high pressures of up to a 100 atmospheres and more with complete safety.

Many pipe-lines of this type have been supplied to Scandinavia (the well known Rjukanfos establishment in Norway), to Italy (eight lines have been installed during the past six years, among others at Ponale, above Lake Garda, and for the Evancon establishment, now in process of installation), to North and South America (during the past two years, three large installations for the San Joaquin, the Feather River and the Edison establishments), and to the Far East, in particular to Japan (Kinugawa, Fusenko in Korea, now in course of installation).

The "Ferrum" Ltd., has a well organised system of offices and export agencies at the following points: Warsaw, Berlin, Barcelona, Copenhagen, London, Milan, Oslo, Paris, Vienna, Zürich, Tokyo and Mexico City.

The factory further manufactures water-gas welded iron pipes with diameters of from 600 to 3.000 m/m., and thickness of walls of from 6 to 60 m/m., for sewage, water, steam and gas systems, the sections being joined either by flanges or by sliding connections. Gasometers, tanks for liquids, all kinds of high pressure air and gas caissons are produced, as also battleship masts, derricks, compressed air bottles for torpedo-boats, marine buoys, centrifugal drums, cellulose boilers, melting-pots, welded boilers, &c.

"GRÓDEK"

The Pomeranian Electrical Power Station

Toruń, Pom.

THE GRÓDEK Electrical Power Station, one of the largest and most up-to-date concerns of its kind in Poland, has recently commenced another undertaking — the electrification of the port of Gdynia.

The Polish Ministry of Public Works, on September 14, 1927, authorised the "Gródek" Electric Power Station to build a hydro-electrical plant in Żur (Pomerania), and a 60.000 Volt high tension line from Gródek and Żur to Gdynia, a distance of 135 kilometres, with the object of the complete electrification of the port of Gdynia. In connection with this, the Ministry of Industry and Commerce signed an agreement on September 17, 1927, with the "Gródek" Joint Stock Company, by which the latter undertook to furnish the entire supply of electrical power needed for the port of Gdynia.

The "Gródek" Pomeranian Electrical Power Station, which has been entrusted with such an important task, is an all-Polish concern, built by Polish engineers using Polish made materials with the exception of the largest machines which were imported.

The "Gródek" Joint Stock Company was instrumental in conducting the electrification of a large part of Pomerania before receiving the commission of electrifying the port of Gdynia. This company has up to the present constructed its own hydro-electrical plant, a 240 km. long high tension cable system of 60.000 Volts, and transformer stations in Toruń and Grudziądz.

The Gdynia contract will be carried out according to the following programme:

1. — The building of a 10.000 — 12.000 HP. hydro-electric power plant in Żur will be commenced in May 1928.

2. — A 60.000 Volt high tension cable system will be constructed joining the hydro-electrical station in Gródek with the Żur plant, thence to the port of Gdynia. This

work will be completed by March this year.

3. — A transformer and distributing station in Gdynia, having for its purpose the lowering of the voltage from 60.000 to 15.000 Volts, will be built and should be finished before May of the current year.

4. — A 15.000 Volt cable system will be constructed connecting up the various buildings, cranes, &c. within the port limits.

5. — The building of small distributing stations in the port for currents of 15.000 and 380 or 220 Volts.

The most important part of the work connected with the electrification of Gdynia is the building of the transformer station hall; this hall will be of imposing size, and will be 57 metres long by 28 metres wide. The dimensions of this building are such as would correspond to a tension of 100.000 Volts, whilst the capacity will amount to 12.000 KWA.

A site has been left in the immediate vicinity of this transforming station, of an area of about 60.000 sq. m., on which in the future the construction of a reserve steam electrical power plant of 40.000 KW. is projected.

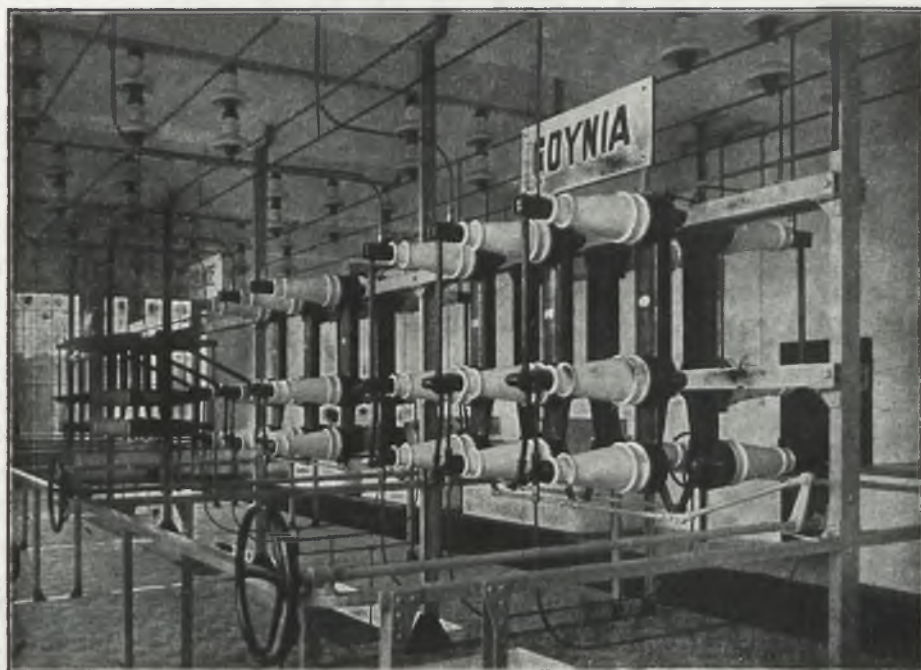
The electrical current will be changed to 15.000 Volts in the transformer station, whence it will be carried by cables to smaller transformer stations, which will be situated near the large cranes, port warehouses, &c.

These smaller stations will reduce the current to 380 Volts for motive power and to 220 Volts for illuminating purposes. The current which is to be used for the electrification of the port of Gdynia will be of the three-phase type which is in general use in all ports with modern equipment, this being the only type of current which permits of the transference of electrical energy to large machines using several hundred HP. and situated at some distance from the source of

energy, without a considerable fall in tension. Old established ports still utilise direct current, which permits the use of ordinary serial motors, but renders quite impossible

the transmission of current over long distances.

The electrical power will be distributed from the transformer stations through low tension



60.000 VOLT DISTRIBUTION STATION

cables to the various points of the port (cranes, transporters, dumpers, &c.) and to the street lighting system, railway lines,

offices, &c. situated within the port area. Not only is the commercial port to be electrified but also the adjacent naval port.

ELECTRO COMPANY LTD.

Łaziska Górne, Upp. S.

FOR SOME TIME PAST, growing interest has been evidenced by foreign capital in Polish industries, *inter alia* in the electrification of the country. Some months before the "Société Générale d'Exploitations Electriques de Łódź" (a Belgian company with a capital of about ₹ 31,000.000) was formed, Swiss financiers had made large investments in Polish electrical enterprises. The "Elektra S. A. pour l'Electricité Appliquée" (founded September 1927, with a capital of ₹ 43,000.000) is extending its electric power plant in Łaziska Górne, with the object of raising its output to 88.000 KW.

The capital needed for this, amounting to ₹ 21,000.000, has been assured by the well-known banking house of Messrs. C. I. Brupbacher & Co. of Zürich. The well-known firm of Messrs. "Motor-Columbus" S. A. d'Entreprises Electriques of Baden, Switzerland, is also participating in this transaction.

The enlarged electric power plant in Łaziska Górne is intended, in the first place, to supply 150,000.000 KWh per annum to the State Chemical Factory in Chorzów. The new installation will be furnished by Messrs. Brown-Boveri Ltd. Baden, Switzerland*) (two turbo-generator sets of 40.000 Kw each), and by Sulzer Frères Ltd. of Winterthur, Switzerland (five high-pressure boilers).

This electric power plant, upon its completion, will be one of the most important in Europe, inasmuch as the plant will produce about 380,000.000 KWh per annum.

Not only will the electric power plant be extended, but also the thermo-electric factory run in connection with it, and producing apart from carbide and ferro-silicon, other alloys of iron hitherto imported.

*) By their newly built factory in Poland.

THE OBERSCHLESISCHES KRAFTWERK

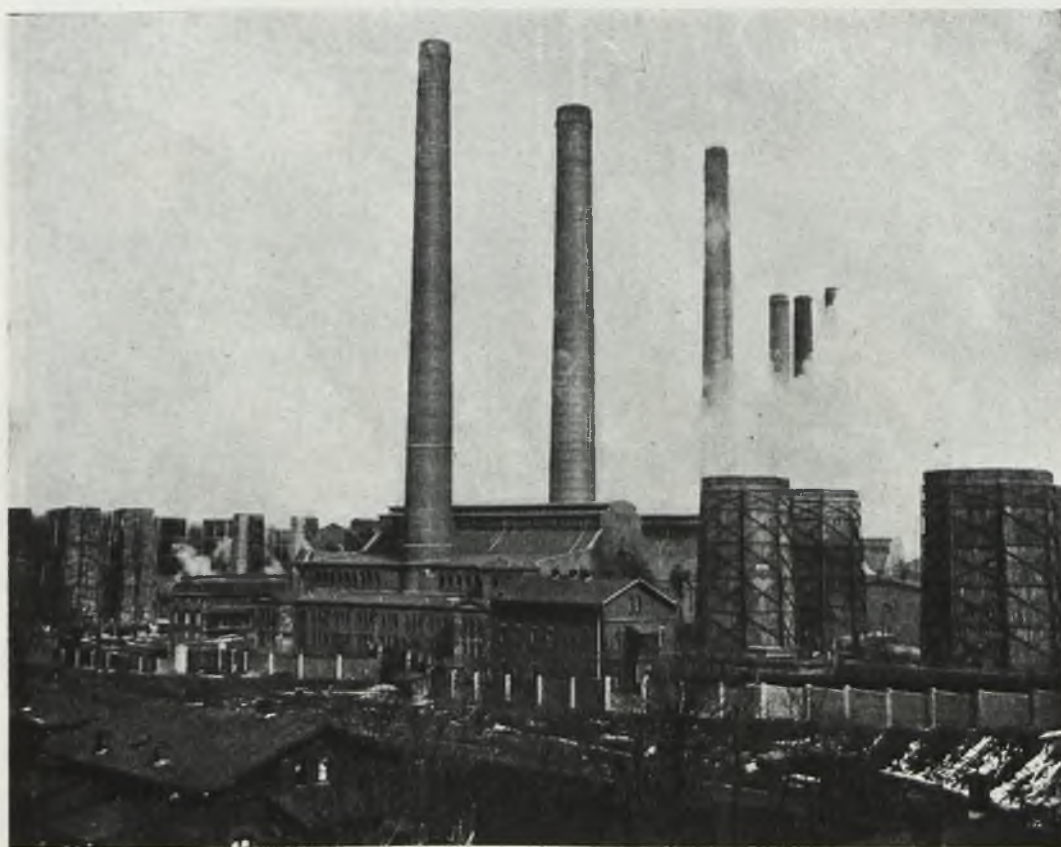
Joint Stock Co.

Katowice, Upp. S.

THE DISTRICT electric power station in Chorzów, Polish Upper Silesia, is the property of the Oberschlesisches Kraftwerk of Katowice. This station was built in 1898, its original capacity amounting to 850 KW. It now possesses an installation with a capacity of 81.000 KW., the largest steam turbine being

ing stations to 40.000/60.000 Volts] or 3.000/1.000/550/250/120 Volts.

The current is distributed, by a network of cables whose total length amounts to 350 kilometres, to industrial establishments of all sizes including heavy industry, to electric tramway systems, and to urban and



THE ELECTRIC POWER STATION IN CHORZÓW

18.000 KW. The turbines are supplied with steam from 36 high-pressure boilers, whose total heating surface amounts to 20.081 sq. metres, the furnaces being fed mechanically with coal-dust.

The electric power station produces an alternating current of 6.000 Volts, which is transformed at the main or at sub-transform-

rural councils in almost every part of Polish Upper Silesia. Apart from this, a system of overhead cables with a voltage of from forty to sixty thousand connects this electric power station with other smaller ones.

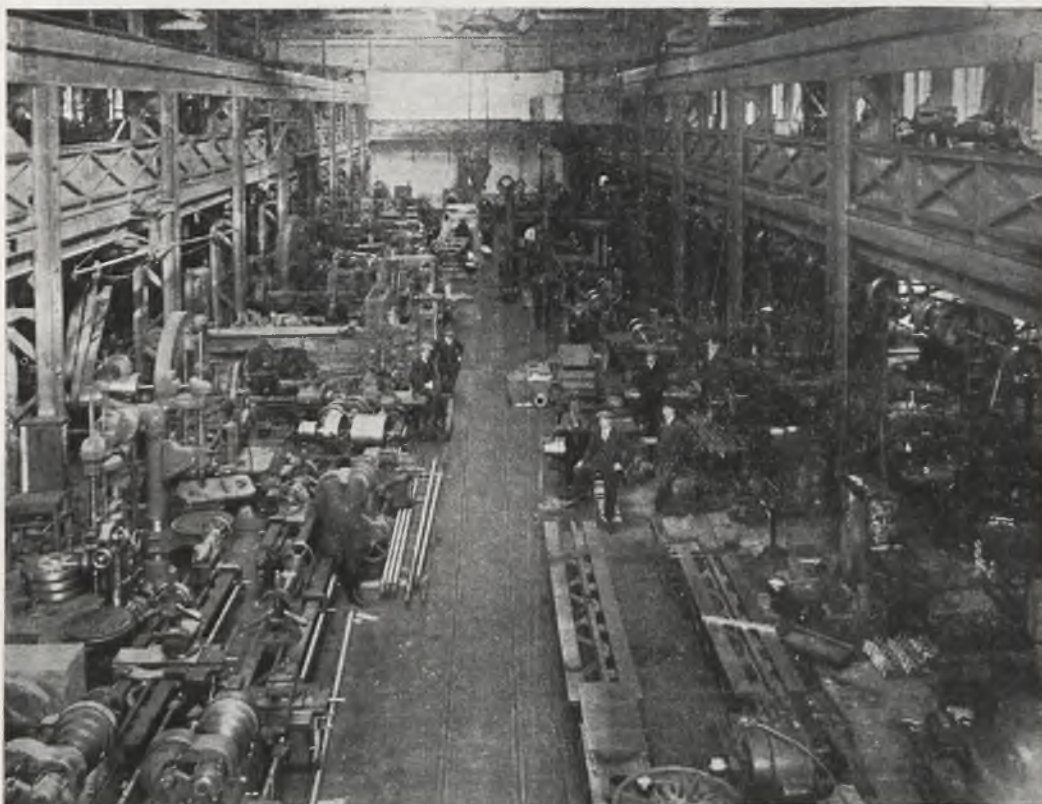
The output of this station in 1927 amounted to 423,000.000 KWh.

THE POLISH MECHANICS' COMPANY OF AMERICA, LTD.

Warsaw

THE POLISH Mechanics' Company of America was founded in 1919 by Polish emigrants, who, appreciating the importance of industries in the consolidation of the independent existence

purchase of all the shares of the latter firm, so that the entire estate of both companies is solely owned by the Mechanics' Association. Inc.



INTERIOR OF A MECHANICAL WORKSHOP IN THE POREBA PLANT

of Poland, had decided to organise in Poland a number of enterprises, chiefly belonging to the metallurgical industry.

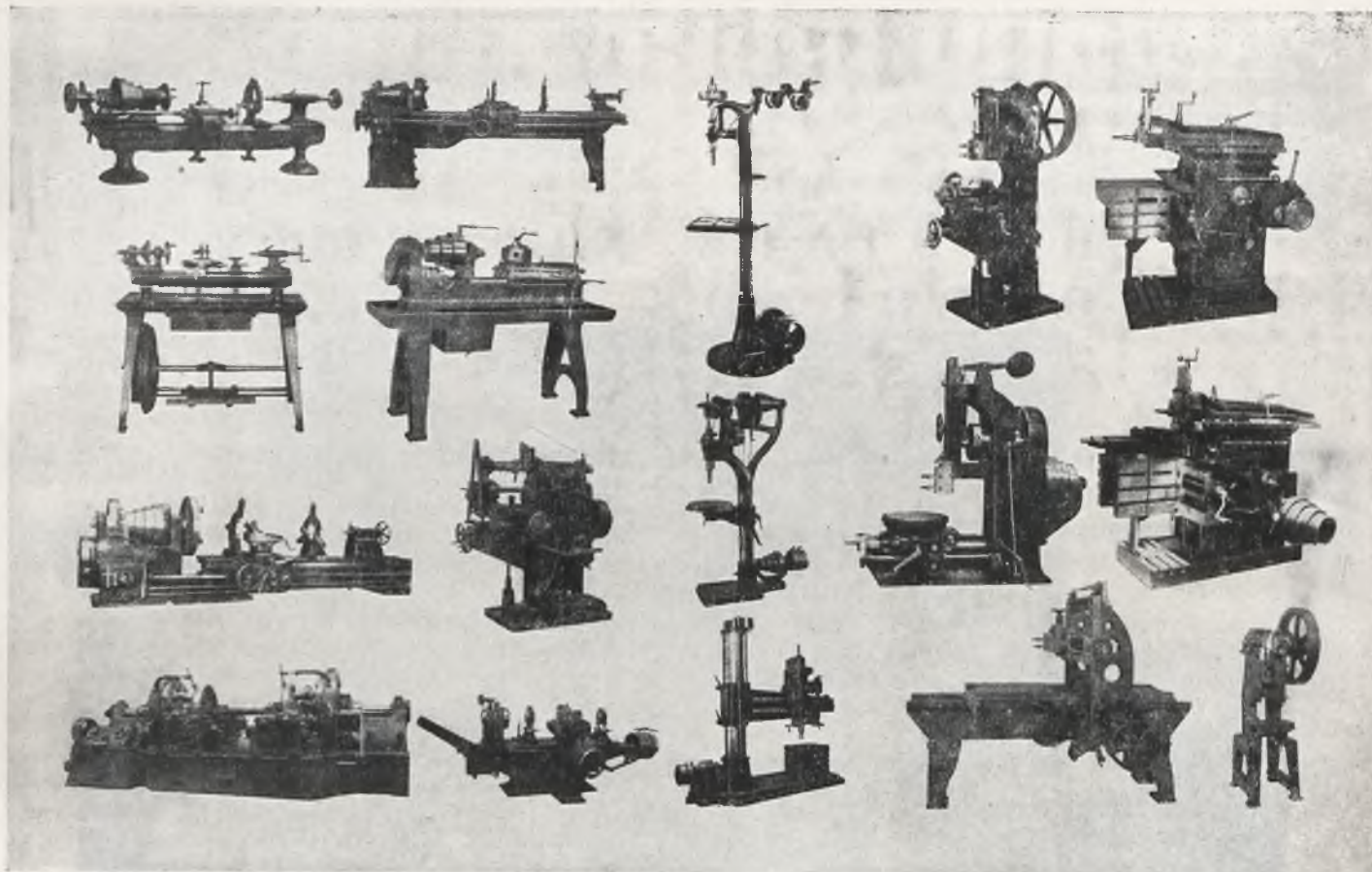
The capital of \$ 1,400.000 was subscribed by 15.000 shareholders, and this money was used for the purchase of a number of industrial establishments in Poland, which were finally consolidated into two fundamental works in Pruszków and in Poręba.

In 1923, this company was incorporated in Poland under the name of "Stowarzyszenie Mechaników Polskich z Ameryki S. A." in Warsaw, all the shares of which without exception belonging to the "Mechanics' Association Inc." of Delaware, U. S. A.

The Polish Mechanics' Company of America has now fused with the Poręba Company, by

in accordance with its original object, the Mechanics' Association has directed its attention chiefly to the construction of iron and wood-working machinery tools, the plants at Pruszków and Poręba being at present the largest producers of these machines in Poland, and the annual production attaining a value of ₺ 3,000.000. Many types of these machines are being manufactured for private firms, as also for military and railway workshops, the Mechanics' Company being pioneers of this class of production in Poland. The manufacture of machine tools has since 1922 been conducted efficiently and at a profit, the products being able easily to withstand foreign competition.

The Company has as a second speciality,



TYPICAL MACHINERY MANUFACTURED BY THE MECHANICS' CO.

the manufacture of cast-iron products, and possesses one of the largest works of this kind in Poland, at Poręba near Zawiercie. The output of this works has steadily increased to the present monthly figure of 1,200,000 kilograms of castings. Apart from castings for its own use, the Poręba works supply the Silesian iron and steel industry with moulds, in very large quantities. Further, about 400 tons of vertically cast water pipes are supplied monthly to the American firm, Messrs. Ulen & Co. The manufacture of castings for heating installations, such as radiators, ribbed tubes, &c., was introduced a year ago. Enamelled cast iron vessels and sanitary appliances and fittings are also a staple product of the Poręba works; the manufacture of nails and wire was introduced two years ago.

We may add that the Poręba plant consumes coal from its own mines.

The Mechanics' Company is now an important industrial enterprise in Poland, employing about 1,900 workmen, whilst the annual output is valued at about ₹ 10,000,000.

Board of Directors:

Sigismund Nowicki, Senator — Chairman
 Anthony Anusz, Deputy to the Sejm — Deputy Chairman
 George Iwanowski, M. E. — Director
 John Piotrowski, M. E. — Director
 Ladislas Hackiewicz M. E. — Director

Auditing Committee:

Prof. Dr. Kasimir Bartel
 Stanislas Gaszyński, Senator
 Stanislas Lipiński
 Cesare Łagiewski
 Alexander Dębski, M. E.

THE STATE NITROGEN COMPOUNDS FACTORY

C h o r z ó w

UP TO THE year 1922 there were in Poland no chemical works designed for the production of nitrogen compounds on a large scale, and it was only with the incorporation of Upper

vast knowledge, succeeded in saving for the country this valuable national asset.

The rapid development of these works under the Polish administration is illustrated



STATE CHEMICAL WORKS AT CHORZÓW

Silesia, that the Polish Government took over the extensive works at Chorzów.

The taking over of this factory, its setting in order and operation, as well as its subsequent guidance to the flourishing state in which it now is, will for ever constitute a brilliant chapter in the history of the Polish chemical industry, especially when it is taken into account that there were tremendous difficulties to be overcome, for the German retiring administration left the factory without engineers, overseers and even many of the workmen. Invaluable work was performed by the first general manager of the factory, Professor Ignacy Mościcki, the present President of the Republic of Poland who, thanks to his energy and

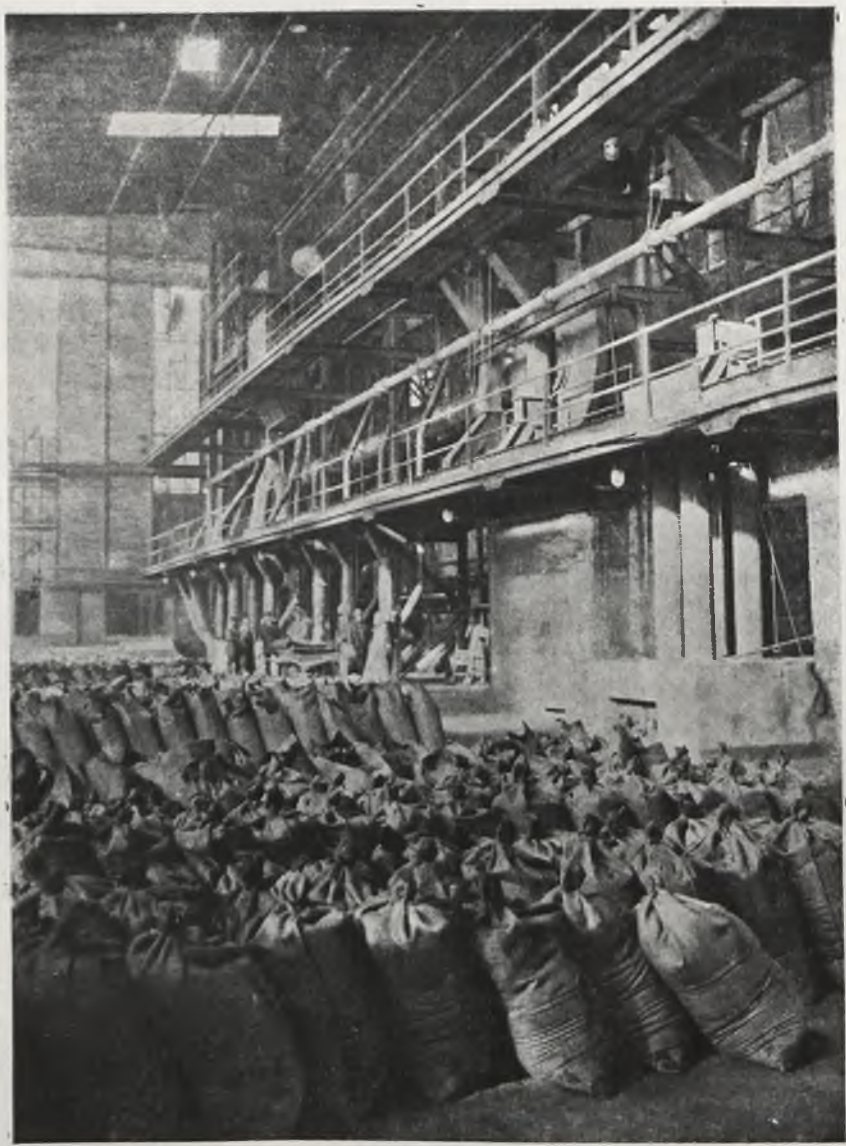
by the following figures of the production of calcium cyanamide (in tons):

	1921	1924	1925	1926	1927
(German Administration)	74.300	51.000	84.700	117.000	142.000

Special attention has been devoted to the construction of new workshops in which ammonia is obtained by the decomposition of cyanamide, which former is in turn transformed into nitric acid and ammonium nitrate. The last mentioned product, also known under the name of ammonium saltpetre, is used as a nitrogeous fertilizer, which being just as good as Chilian saltpetre, is produced on an increasingly large scale. For this reason the

output rose from 1.000 tons in 1925 to 12.400 tons in 1926, and 14.000 tons in 1927. The extension of this factory had a favourable influence on the Polish foreign trade balance, for it contributed towards the decrease of the imports of Chilian saltpetre.

in the workshops, there was a great deal of trouble with the sales of calcium cyanamide, a new and little known product. Much energy had to be spent before the farmers, who as a rule are rather conservative, were persuaded of the advantages resulting from the utilis-



NITRATE FERTILIZERS
PRODUCED BY THE CHORZÓW FACTORY
(PHOT. S. PLATER)

The good results obtained did not deter the scientific staff from making further laboratory and factory experiments, with the view to discovering the most economic methods of production. Thanks to this work Polish engineers succeeded in improving the processes of manufacture; thus, for instance, the productive capacity of 1 carbide unit was increased from 56.5 tons in 1923 to 70.6 tons in 1926. Side by side with the difficulties encountered

ation of this fertilizer. That this work was very fruitful is illustrated by the following sales figures for the past three years (in tons):

1924	1925	1926	1927
32.740	75.493	97.389	109.000

Seeing the increased demand for this fertilizer, the Chorzów Factory has spared no effort in order to increase the output, and in

1926 it succeeded in raising it to 125 per cent of the maximum obtained by the former German administration.

The demand for nitrogeneous fertilizers, and particularly for calcium cyanamide on the part of the agricultural community has risen at such a rapid pace in the spring season of 1925/26, when 4.000 to 5.000 tons were lacking to cover the entire demand, that in the corresponding season of 1926/7, despite increased output and the restriction to a minimum of

foreign sales, the production was over 20.000 tons less than the requirements. The increase in the demand for fertilizers has grown from year to year, and as new areas of the country began to use nitrogeneous fertilizers, there arose the necessity for further expansion of the works. This was duly understood by the Government, which decided to increase the production of these compounds by the erection of an additional factory, in Tarnów.

THE "LIGNOZA" LTD.

Katowice, Upp. S.

THE LIGNOZA Joint Stock Co. is the owner of explosives factories in Krywałd, Stary Bieruń and Pniowiec in Upper Silesia. These factories were leased by the "Lignoza" Ltd., from the Lignoza A. G. of Berlin in 1923, and in 1924 were bought outright.

The Lignoza Co. extended and modernised these factories after their purchase, and to-day they are in no way inferior to the most up-to-date factories of this type in Western Europe.

The whole stock capital of the enterprise is held by the Polish mining industry. The registered offices of the Company are in Katowice.

The "Lignoza" Co. produces all kinds of explosives and fuses for mining and industrial use, and to a great extent for the army. The Lignoza Co.'s products are supplied to nearly all the mines of Upper Silesia, to many in the Dąbrowa and the Kraków coal basins and to numerous stone quarries. Large quantities of explosives are also supplied for military purposes.

The largest explosives works in Poland are the Krywałd works, established in 1876, comprising three factories producing respectively: black powder, chlorate and ammono-nitrate explosives.

The Stary Bieruń works, established in 1871, produce at present nitroglycerine, dynamite,

gelatinous and semi-gelatinous explosives, and is the only factory producing these kinds of explosives in Poland. In conjunction with these works a fuse and percussion cap factory was established in 1925 and an electric detonator factory in 1927.

The fuse factory is the only one in Poland, and produces fuses of all kinds. The fuses are tested and examined automatically by the aid of special optical and accoustic appliances. Since 1926, the fuses have been subjected to X-ray examination, this being the only means of locating with absolute certainty all inaccuracies and faults which may have entered into the products of this important and responsible branch of manufacture.

The Pniowiec black powder factory, built in 1893, is the largest on the Continent; this factory also produces ammono-nitrate explosives.

All these factories, belonging to the "Lignoza" Ltd., are equipped with the most up-to-date technical appliances. The various rooms and workshops in the newly-built sections of these factories are very spacious, and every modern improvement and convenience has been installed in order to ensure the safety and the comfort of the workers.

The "Lignoza" Company's factories are able, not only to meet the entire demands of the home market, but also to export considerable quantities of their products.

THE K. SCHEIBLER AND L. GROHMAN AMALGAMATED INDUSTRIAL WORKS

Joint Stock Co.

Łódź

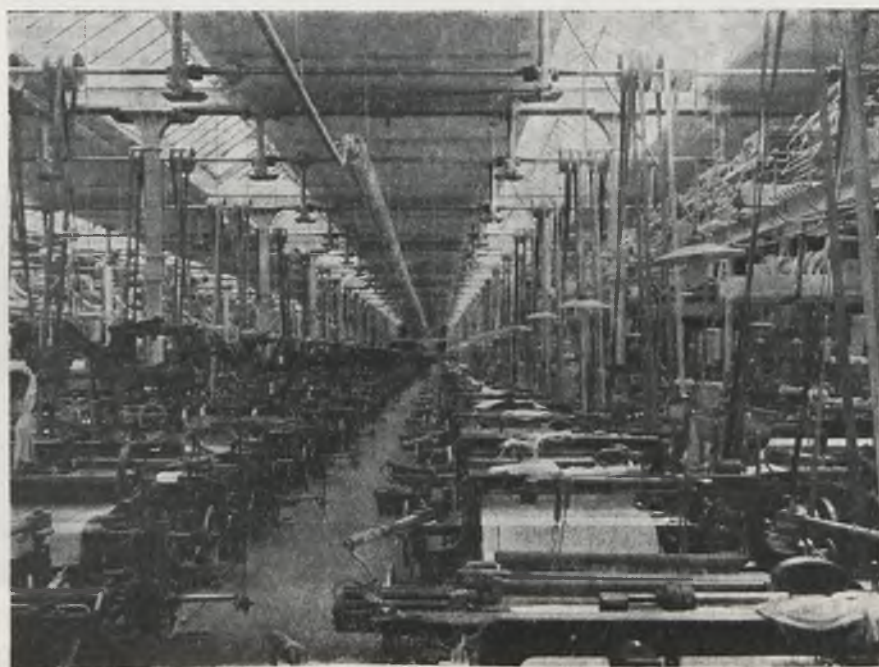
THIS COMPANY was formed in 1921 by an amalgamation of two of the oldest industrial concerns in Poland: Messrs. K. Scheibler Ltd., and Messrs. L. Grohman Ltd.

The L. Grohman factory was founded by Bogusław Grohman in 1827, it then comprising a spinning mill operating 2.000 spindles and a weaving shed containing 100 hand looms.

The Scheibler Works were founded in 1854 by Karol Scheibler, who was the first to introduce power looms into Poland. The original factory possessed 100 power looms and a spin-

forced to shut down, and it was not till 1919 that they gradually recommenced work. The Scheibler and Grohman Companies were under a joint administration from November 1, 1919, and this led to their amalgamation, in January 1921, as a new firm transacting business as: The K. Scheibler and L. Grohman Amalgamated Industrial Works, Joint Stock Company.

To-day the above named works include 3 weaving factories containing 6.100 mechanical looms, 6 spinning mills of 270.000 spindles, and auxilliary departments, such as: bleaching,



MESSRS. "SCHEIBLER & GROHMAN" COTTON MILLS IN ŁÓDŹ

ing mill of 18.000 spindles. By 1870, 40.000 spindles and 400 looms were in operation. Scheibler was thus the pioneer of power weaving in Poland.

Both factories developed steadily, continually improving their equipment, and in 1881 the Scheibler Works were converted into a limited liability company with a capital of 9,000.000 Roubles, whilst the Grohman Works became a limited liability company in 1899 with a capital of 3,000.000 Roubles, raised in 1911 to 5,000.000 Roubles.

During the Great War, both factories were

dyeing, shaving, finishing, printing, engraving, as mechanical workshops, three gas-works, an electric power plant generating 4.000 HP., 12 kilometres of railway sidings, narrow-gauge railways, a fire brigade, workmen's and official's dwelling houses, hospitals, schools &c.

The Scheibler and Grohman Amalgamated Industrial Works employ at present over 10.000 hands, producing all kinds of cotton yarn, and raw, bleached, dyed, printed and colour woven cotton fabrics for home and foreign consumption.

J. K. POZNAŃSKI

Cotton Manufacturing Co. Ltd.

Ł ó d ź

ONE OF THE largest cotton mills in Poland is the J. K. Poznański Co. in Łódź, established in 1872 and transformed into a Public Company in 1879. The plant covers an area of 415.000 sq. m. and deals with all the processes of cotton manufacture from the raw material to the finished article. The floor area of the buildings is 1,400.000 sq. m.

Indian cotton is used. All the cotton is transported by rail from Bremen or Trieste direct to the Company's large storehouses. There the cotton passes the customs and is stored until needed by the spinning mill. The pre-war mill—5 stories high, has 150.000 spindles spinning yarns from No. 60 to No. 40 (these spindles, although pre-war, are up-to-date



MAIN ENTRANCE TO THE J. K. POZNAŃSKI'S
COTTON MILLS

The pre-war capital was 10,000.000 gold Roubles fully paid up. According to the Polish laws, this capital was transformed into gold Złoty (gold Francs) at a value estimated by a Government Commission. The estimated value in 1925 and 1926 of the grounds, buildings and machinery was gold Frs. 39,519.849 (\$ 7,621.957·17), but the capital decided upon by the general meeting of shareholders is now: capital—gold Frs. 25,000,000 (\$ 4,821.600·77), reserve funds—gold Frs. 1,450.000 (\$ 279,652·84).

In the above mentioned factory up to 3.000 bales per month of American, Egyptian and

and all the necessary special parts have been bought and installed since the war), 25.000 spindles for fine yarns from Egyptian cotton from No. 50 to No. 120, 10.000 spindles for the production of vigogne-yarn. Close to the spinning mill in a connecting building is a reeling and twisting plant with 30.000 spindles (22.000 newly constructed in 1925).

During the war the factory was practically ruined by the German occupation authorities which commandeered not only the raw cotton and finished goods but also dismantled the machinery, taking away the most valuable parts

of it up to a value of roughly \$ 4,500.000. This value is much smaller than the real replacement value, because the damages done consist of requisitions, confiscations and forced sales, and machinery has very much increased in price since the war, therefore the replacement of the necessary parts has been very expensive. Under these circumstances it is a great achievement that in a very short time after peace the factory was entirely re-built and put into action, for which purpose a large quantity of machinery was bought in England,

under pressure. This will be the first installation of its kind in Poland.

Transportation over the Company's premises is done by rail, and the rolling stock comprises steam engines and waggons, belonging to the factory, also petrol motors with waggons. The factory also owns enormous houses with flats for workmen (over 1.500 flats), a school building, a hospital with 150 beds (perfectly modern), a dining room for workmen, a theatre and fire brigade, possessing all the necessary tools and instruments including 2 steam pumps.



HEAD OFFICE OF THE COMPANY

and to-day the factory is technically absolutely up-to-date.

Further on, there is a weaving mill with 5.000 looms of different widths and systems, one shed holding 2.000 looms. Then come 2 large buildings in which are the preparation departments for the spinning and weaving mills. Still further, there is a bleaching, printing and finishing establishment, which possesses 12 printing machines, 100 carding machines, 8 bleaching boilers and machinery for making artificial ice.

The power plant is electrical and steam, i. e., a turbo-generator of 2.400 KW and steam engines of a total of 6.000 HP. At present the complete electrification of the factory is being carried out, by installing additional new turbo-generators, one of 3.600 KW and another of 2.400 KW. The 36 old boilers are replaced by new high-pressure ones (24 atm.) which are heated with coal dust

In every building there are sprinklers and fire alarms. 8.000 workmen are employed by the Company.

The Company sells single and double yarn from No. 6 to No. 120, all kinds of cotton goods, white and coloured, dyed and printed shirtings, madopolam, nainsook, batiste, popeline, bed-sheetings, towels, flannels, rugs and all kinds of material needed for linings and suitings. A specialty of the Company are the materials made of vigogne for which it has received gold medals at different exhibitions. These goods are exported in great quantities to Russia, Rumania, Bulgaria, Turkey, the Baltic countries, China, South America and the British Colonies.

The production of the Company is 2 to 3 million metres of goods and 400.000 kg. of yarn per month. The turnover of the Company is 6 to 8 million U. S. A. Dollars per annum.

THE POLISH PAPER MANUFACTURERS' ASSOCIATION

Warsaw

THE POLISH paper industry has for many years been modernising its technical equipment with the object of increasing to the greatest possible extent the domestic production of paper. The paper industry further, by the enlargement of already existing factories and by the construction of new ones, is approaching its object of making home production equal to the consumption, and in this way, at least as far as the fundamental kinds are concerned, to free Poland from the necessity of importing from abroad.

The following table illustrates the growth of the production of Polish paper mills, and of the consumption of paper in Poland (in tons):

	<i>Production</i>	<i>Export</i>	<i>Import</i>	<i>Consumption</i>
1926	88.370	5.080	12.120	95.410
1927	118.640	4.600	29.260	143.300

The following are the most important items of the 1927 paper imports (in tons):

cardboard	11.290
rotary newsprint	2.620
flat press newsprint	660
mechanical wood-pulp paper	7.590
non-ligneous paper	3.530
Total:	25.690

The export of paper from Poland is small, comprising only two special products, i. e., cigarette paper and certain kinds of cardboard.

The figures for 1927 show that the production of paper for this year has risen in comparison with that of 1926 by 34 per cent; that the import of paper from abroad has risen by 140 per cent, and that the consumption of paper has risen by 50 per cent. If, however, it will be taken into consideration that the figure given as 143.300 tons includes also

factory and wholesale warehouse stocks, mostly consisting of imported paper, the increase in the consumption of paper is somewhat lower than the 1927 figure would appear to indicate, and is probably about 30 per cent higher than that of the preceding year.

As so sudden an increase in consumption can only have been due to unusual circumstances, we may assume the normal increase to be from 15 to 20 per cent per annum, which would lead to the doubling of the present consumption within five or six years.

We would here point out that investments already made will, by the end of the current year, increase the home production by 33.600 tons, an amount greater than that imported during the past year.

At present 80 per cent of the demands of the home market are met by Polish paper mills, the remaining 20 per cent being imported from Czechoslovakia, Austria and Germany.

Of the 25 Polish paper mills, possessing 48 paper making machines, 17 of the largest mills with 38 machines, are members of the Polish Paper Manufacturers' Association.

In 1927, the associated paper mills employed over 7.000 hands, the remaining mills employing 1.000.

The Polish Paper Manufacturers' Association was formed in 1918, with the objects: a) of dealing with various matters and problems affecting the paper industry; b) of representing the industry in negotiations with the Government and with public institutions; c) of drawing up statistics of the production, import, export and consumption of paper, &c., as also of the fundamental technical appliances, and; d) of taking all the necessary legal steps for the protection and development of the Polish paper industry.

THE POLISH STATE SPIRITS MONOPOLY

Warsaw

THE STATE Spirits Monopoly of the Polish Republic was introduced by the Act of July 31, 1924, which came into force on January 1, 1925. The Act (amended recently by a decree of the President of the Republic dated March 26, 1927) gives the State the sole right of purchasing and selling alcohol used within the boundaries of the Republic, as well as of the manufacture and sale of "vodka", i. e., pure ethyl alcohol diluted with water but with no further additions whatsoever.

The production of alcohol and the manufacture of table spirits other than vodka as well as their export, remain in private hands.

A Spirits Council has been formed in connection with the Ministry of Finance which acts as an advisory and consulting body in questions affecting the alcohol industry. Half of the members of this Council are experts in the production or handling of alcohol or vodka, and are appointed by the Ministries of Finance, of Industry, and of Agriculture, whilst the remainder are representatives of the producers, distillers or merchants, appointed by their respective trade organisations.

The Board of Management of the State Spirit Monopoly, formed for the purpose of administering this privilege of the Treasury, is subordinated to the Ministry of Finance, but possesses a separate legal entity. The Board works on the basis of a separate yearly preliminary budget of revenue, of which only the excess of revenue or expenditure enters into the State Budget.

The Board has at its main office and subordinate establishments a staff comprising 895 officials and employees, 51 lower grade employees, and about 2,000 workmen and artisans.

The Spirits Monopoly owns 14 vodka factories, 3 distilleries, 90 wholesale stores, and 48 retail shops. The Monopoly carries out all chemical analyses of its own products, as well

as of other excisable alcoholic products at its own central chemical laboratories in Warsaw, and at five other points in the provinces; a staff of 21 professional chemists is employed, which constantly sees to it that the products of the Monopoly are as little as possible detrimental to the health of the consumer.

These laboratories analyse, in the first place, rectified spirits supplied by private manufacturers, who are paid only for such of their products which pass the test for purity. The activities of the laboratories of the Spirits Monopoly have yielded excellent results in this direction.

A further function of the laboratories is to conduct preliminary analyses of all the basic raw products, such as spirit, water, &c., as well as of auxiliary materials used by the Monopoly for the preparation of table spirits.

Finally, all table spirits and liqueurs, not made or sold by the Monopoly, of which there are several thousand varieties on the market, now undergo detailed analysis at the Central Chemical Laboratory of the State Spirits Monopoly; in those cases where the results of the analysis are unsatisfactory, the sale of the spirit affected is prohibited.

This care of the Board of Management of the Polish Spirits Monopoly in the direction of assuring consumers products of first-class quality is supplementary to the control of the production of raw spirits in distilleries.

A regulation has been issued, with the object of introducing the standardisation of control over the whole country, whereby all distilleries are obliged to fit automatic Siemens spiritometers. Those distilleries which previously used control devices of other makes have been supplied by and at the cost of the Monopoly with the regulation type of apparatus, the spiritometer remaining the property of the Spirits Monopoly.

Moreover, the distilleries are subjected to free compulsory technical supervision, and are in all cases assured free scientific assistance.

The production of spirits remains, as has been already mentioned, in the hands of private manufacturers. The great majority of Polish distilleries are of agricultural type, using potatoes. During the campaign of 1926/27, 1,246 agricultural and 36 industrial distilleries were running. The former distilleries used 4,589.232 quintals of potatoes and 119.237 quintals of barley and other cereals.

The high degree of development of agricultural distilling in Poland is due to the great importance of the spirit industry for agriculture. Most of the soil of Poland is of a sandy nature, suitable, apart from rye, for the cultivation of potatoes the immediate consumption of the excess production of which is not possible. This excess may therefore be rationally exploited for the production of spirit.

Further, the production of alcohol from potatoes permits poor soil to be maintained, at a higher standard of culture. The by-product obtained in the manufacture of potato spirit, known as "distiller's wash" provides excellent fodder for cattle, a greater number of which thus may be bred on such estates where the supply of other kinds of fodder is insufficient. As a result, the amount of animal manure, so necessary for light soils, is greatly increased.

Thus the Board of Management of the Polish Spirits Monopoly, in the interests of agriculture as well as for fiscal reasons, tends to exert its influence towards increase in the production of spirit.

On the other hand, an increased production seeking new markets would, going along the line of least resistance, tend to increase the consumption of alcoholic beverages, thereby encouraging alcoholism. No country could to-day view this with indifference.

The chief problem that the Board of Management of the Polish Spirits Monopoly has to deal with to-day is that of the reconciliation of these two conflicting postulates — that of maintaining the production of alcohol at a requisite level whilst at the same time restricting its consumption as a beverage. This problem the Board is endeavouring to solve by the transference of alcohol consumption chiefly to spirit used for technical, industrial and illuminating purposes. For this reason, spirit destined for such purposes is not only much lower in price than that used for beve-

rages, but is further entirely free of excise duty.

The Board of Management of the Monopoly has, as its most important object in view, the realisation of a plan introducing a spirit-gasoline mixture to serve as motor fuel. Thanks to the initiative and co-operation of the Board, the preparation of an essential part of this mixture — absolute alcohol — was commenced towards the end of last year, this not having been previously produced in Poland. A mixture consisting of 70 per cent gasoline and 30 per cent absolute alcohol will appear on the market within the next few months. As the use of this fuel, superior to pure gasoline, develops, it will be possible in the future to restrict the sale of alcohol for beverages (one of the methods will be price increases), without, however, adversely affecting spirit production.

The sale of State Monopoly spirit per head of population in litres of 100 per cent alcohol was as follows:

	<i>Total</i>	<i>For beverages</i>	<i>For industrial purposes</i>	<i>Denaturated alcohol</i>
1925	1'86	1'53	0'11	0'22
1926	2'13	1'66	0'14	0'33
1927	1'89	1'51	0'17	0'21

The State Spirits Monopoly gave the following net profits as revenue to the State during the past three years (in £):

		<i>Per cent of the total revenue of the State</i>
1925	173,000.000	10'0%
1926	248,600.000	13'3%
1927	336,797.000	13'2%

The Board of Management of the Spirits Monopoly pays out 1 per cent of its net profits for the combating of alcoholism.

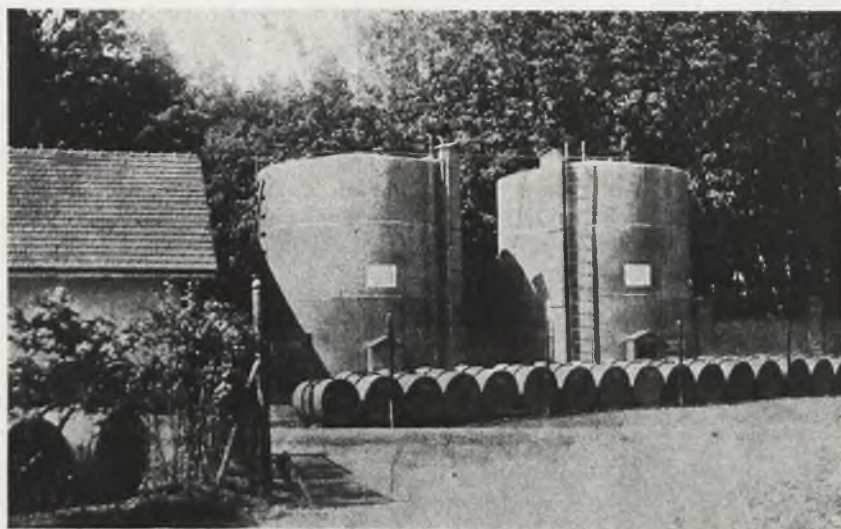
Many reasons prompted the Government to introduce a spirits monopoly in Poland. In the first place, fiscal reasons, the diverging to the Treasury of the enormous profits which formerly had been accumulated by private enterprises. Further economic reasons, calling for the support and protection of agricultural alcohol production, so important an item in Polish national economics. The care of the health of the community was also taken into consideration.

Nothing but an absolute State Monopoly of spirits production and sales can successfully protect the consumer against badly rectified

alcohol and its products, so supremely injurious to health. Further, only the State as a monopoly can successfully and efficiently take systematic action towards the limitation of the consumption of alcoholic beverages without detriment to the production of spirits by developing technical and industrial markets.

alcohol. Further, urban and rural councils may, by a simple majority in a general ballot, absolutely prohibit the sale of all alcoholic beverages within the limits of their territory.

The number of retail shops or bars selling alcoholic beverages is limited to one establishment per 2.500 of population. The sale of



CISTERNS IN ONE OF THE COUNTRY
SPIRIT DISTILLERIES

As may be seen from this review, all the above-mentioned postulates have been fully taken into consideration by the Board of Management of the Polish State Spirits Monopoly.

This, however, does not exhaust all that the State is doing to protect the health of consumers of alcoholic beverages. A special Act (passed April 23, 1920) enforces in the whole of the Republic certain restrictions in the sale and consumption of alcoholic beverages containing 2.5 per cent or more of

spirits to persons under 21 years of age and to pupils of lower or secondary schools without regard to age, is forbidden. Alcoholic beverages cannot be sold on credit, nor against the security of any articles, and spirits cannot be given as payment for services rendered. Moreover, the sale of spirits is also prohibited in railway buffets, on trains, on vessels, within the grounds of factories and in workingmen's or peasant's clubs. The sale of spirits on Sundays and public holidays is strictly forbidden.

THE STATE TOBACCO MONOPOLY

W a r s a w

THE POLISH TOBACCO Monopoly possesses a comparatively long history. Before Poland had lost her independence in the eighteenth century, the Sejm passed a law in 1775 which introduced the imposition of a tax upon snuff merchants. In 1777, the exclusive right of dealing in snuff and tobacco was conferred upon the State, which leased out the privilege to a private concern.

After the partition of Poland into three parts, the Polish Tobacco Monopoly went through many vicissitudes in the three different political and economic systems. In the Russian section, about 1815, the revenue from the monopoly brought in Zł 1,700.000, but in 1860 it was abolished by changing the excise system. In the Prussian section, there was no tobacco monopoly, the tax being levied directly from the manufacturers. In the Austrian section, though there existed a tobacco monopoly, it was entirely destroyed by the Great War so that there remained only one ruined factory.

In post-war Poland, after the introduction of the Tobacco Monopoly by the Polish Parliament, the private tobacco factories were bought out and the majority of them wound up. At present there are 18 factories working in various parts of the country.

The State Tobacco Monopoly steadily increased its output and revenue in spite of the great difficulties with which it had at first to contend, due to the destruction during the war of nearly all the Polish tobacco plantations, and to the shortage of tobacco all over Europe as a result of a similar state of affairs in the plantations of Russia, Turkey and the Balkans.

In 1919, 470.992 kg. of tobacco were used; in 1924, after the introduction of the monopoly — 7,497.267 kg. were used, and in 1927 the amount rose to 18,000.000 kg. at which figure it is maintained at present.

The annual revenue, after the conversion

into Złoty, rose from Zł 133,767.923 in 1924 to Zł 353,000.000 in 1925.

The present policy of the State Tobacco Monopoly is to liquidate the small factories and develop the large ones, with modern equipment. In this way, manufacturing expenses are considerably reduced, while at the same time technical improvements and rationalisation of labour is gradually introduced.

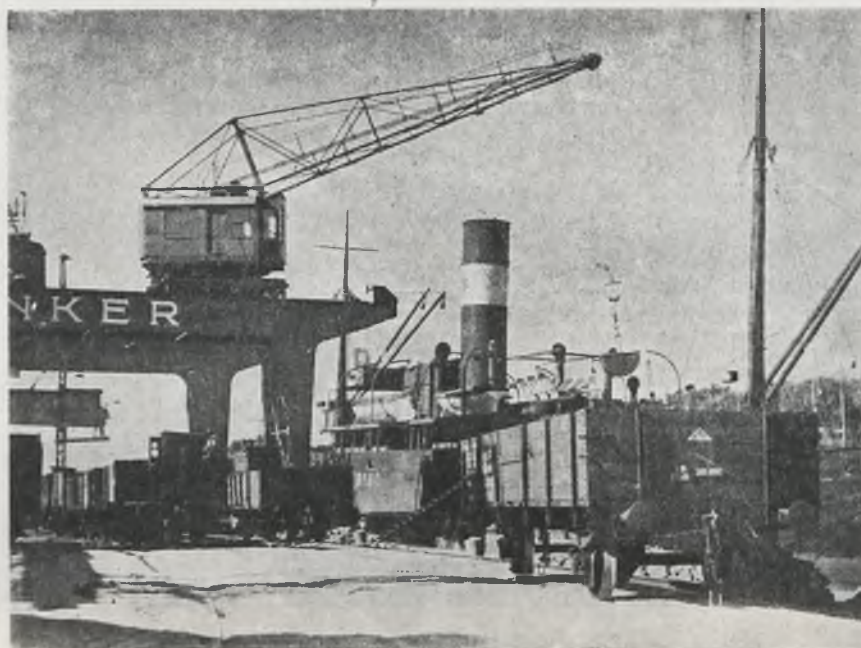
The consumption of tobacco products is steadily and rapidly increasing; in 1922, the total consumption amounted to 10,220.000 kg. while last year it amounted to 18,694.691 kg. Together with the general development of the State Tobacco Monopoly, the cultivation of tobacco in Poland is rapidly advancing. The plantations which formerly existed in Poland had been altogether neglected by the Russian Government, and were no longer in existence. The cultivation of tobacco took place on a small scale in the German section, and on a larger scale in former Austrian Poland, particularly in its South-Eastern portion. As a result of the war, the tobacco plantations were destroyed, but owing to the energetic action of the Polish Government as well as of the authorities of the State Tobacco Monopoly the problem of tobacco plantations in Poland was solved successfully. In 1927, these plantations produced 4,500.000 kg. of tobacco leaves and the whole of the crop was purchased by the Monopoly.

The Polish Tobacco Monopoly is conducting research work into the cultivation of several varieties of South Balkan and American tobacco plants at its experimental station at Piadyki, in Southern Poland, and also has fields at the experimental stations of the Agricultural Colleges. The results obtained so far indicate that these varieties may be cultivated in a number of localities in Poland, which possess good soil and the requisite climatic conditions.

THE PORT OF DANZIG

IN THE Polish-Danzig Convention of 1920, based on the Versailles Treaty, the Offices of management and chief executive of the Port of Danzig were vested in "The Board of the Port and Waterways of Danzig" which is to be the Port Authority. The Board is composed of an equal number of members of the Republic

or more than fourfold. The freight traffic, rising from an average of 2,269.603 tons for the years 1911 — 1913, to 1,891.619 tons in 1927, increased threefold. The port of Danzig is at present the largest timber exporting port in Europe, and the largest port on the Baltic for coal and mineral oil export.



LOADING OF COAL IN THE DANZIG PORT

of Poland and of the Free City of Danzig, under the leadership of a neutral President.

Simultaneously with the change of organisation of the management of the Port, there began a period of unusual development, both from the point of view of traffic and of engineering. The Port of Danzig, which before the war served a portion of the territory of the German Reich and could not equal competitively the neighbouring ports of Königsberg and Stettin, did, upon its inclusion into the customs territory of Poland, take upon itself the rôle of Chief Port to an enormous "hinterland", separated from Danzig before the war by political boundaries.

The movement of ships is increasing rapidly; from 5.996, with an aggregate of 1,963.805 net reg. tons in 1913, to 13.892 ships, with an aggregate of 1,963.805 net reg. tons in 1927,

The rising importance of the port of Danzig in international trade is testified to by the increasing number of flags flown by the ships which call at the port, which was 11 in 1912 and 27 in 1927. More than 70 regular steamship routes connect Danzig with the more important ports of Europe, North and South America, the Near and the Far East.

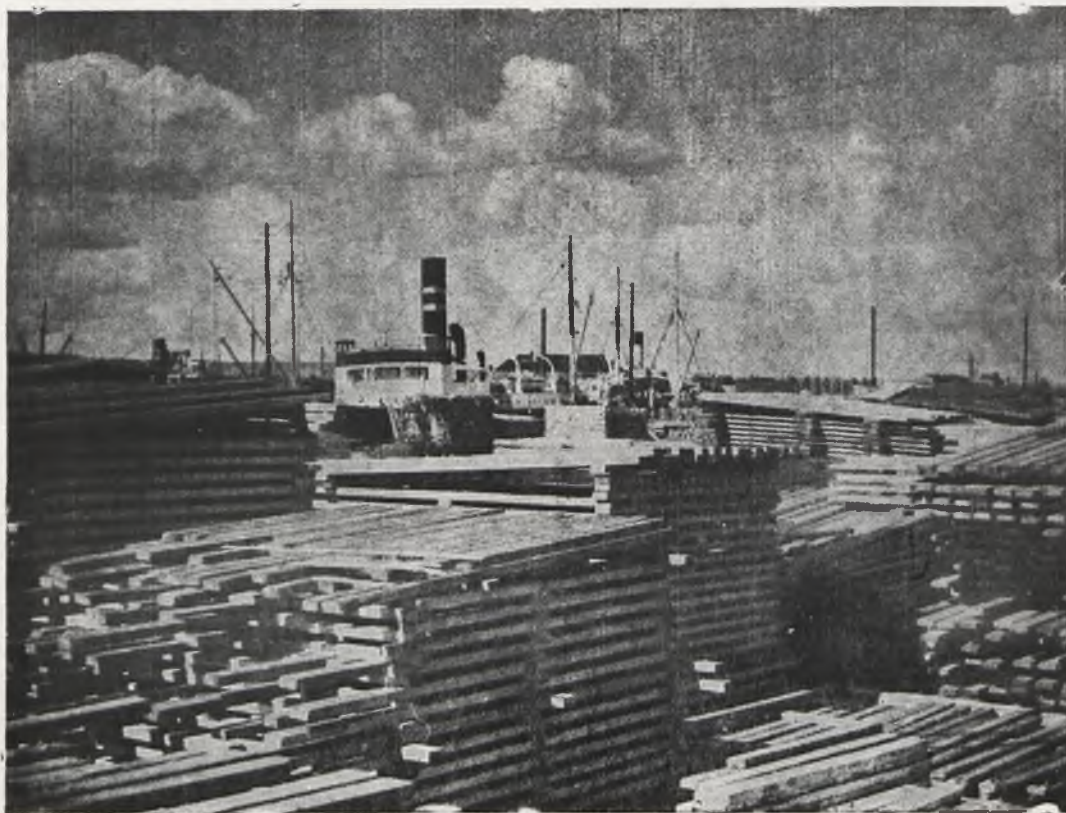
The Port of Danzig as regards port traffic at present holds the position of the third largest port on the Baltic (after Stockholm and Copenhagen), and in comparison with the large German ports gives place only to Hamburg and Bremen, having far outrun its former competitors Königsberg and Stettin.

Danzig, thanks to its ideal geographical location, is not only the natural import and export port for Poland and the Free City of Danzig, but also the most convenient, and in

some ways cheapest port of transit for the greater portion of Czechoslovakia, German Upper Silesia and parts of Rumania, Russia and Northern Hungary, to all of which countries transit traffic through Danzig is favourably increasing (in 1927 about 120.000 tons to Czechoslovakia, and 100.000 tons to the German Reich).

sugar loading devices, of a capacity of about 160.000 tons, oil reservoirs for about 90.000 tons, and special appliances for loading and storing cotton. Four large shipyards are fitted for building or repairing ships, and are equipped with floating cranes up to 100 tons burden, and stationary cranes up to 250 tons.

There is now under construction a new



LOADING OF EXPORT TIMBER AT DANZIG

Equally, from the standpoint of equipment, the Port of Danzig has great possibilities for development: Port Authority owns and can dispose of 29 kilometres of sea front, 1,900.000 sq. metres of land storeyards, and 2,500.000 sq. m. of water yards (for timber).

To the Port Authority also belongs all railway equipment within the Port, which is under the management of the Polish State Railways, together with 40.000 sq. metres of warehouses (including one large reinforced concrete transit warehouse of 6.500 sq. metre area).

The loading appliances consist of 52 (10-ton) electric cranes of which 32 are the property of the Port Authority.

The Port of Danzig also has a number of private storehouses with automatic grain and

basin for the loading of coal, ores and phosphates, fitted out with the most up-to-date equipment: 3 coal hoists (similar in arrangement to the ports of Hull and Talbot) capable of loading 300.000 tons per month, and 3 (15-ton) portal cranes for ores and phosphates, capable of dealing with 100.000 tons per month. This basin will be opened for use at the beginning of 1928. The loading capacity of the Port of Danzig, which to-day is calculated at about 9,000.000 tons per year, will thus increase in the next year to over 12,000.000 tons.

The steady increase of traffic in the Port, and therefore of the proceeds therefrom, made it possible to contract, in 1927, a long-term loan of \$ 4,500.000 at 6½ per cent with an American-Dutch banking trust.

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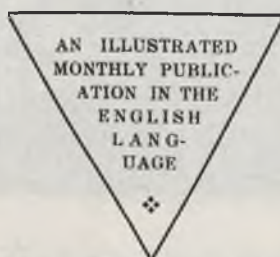
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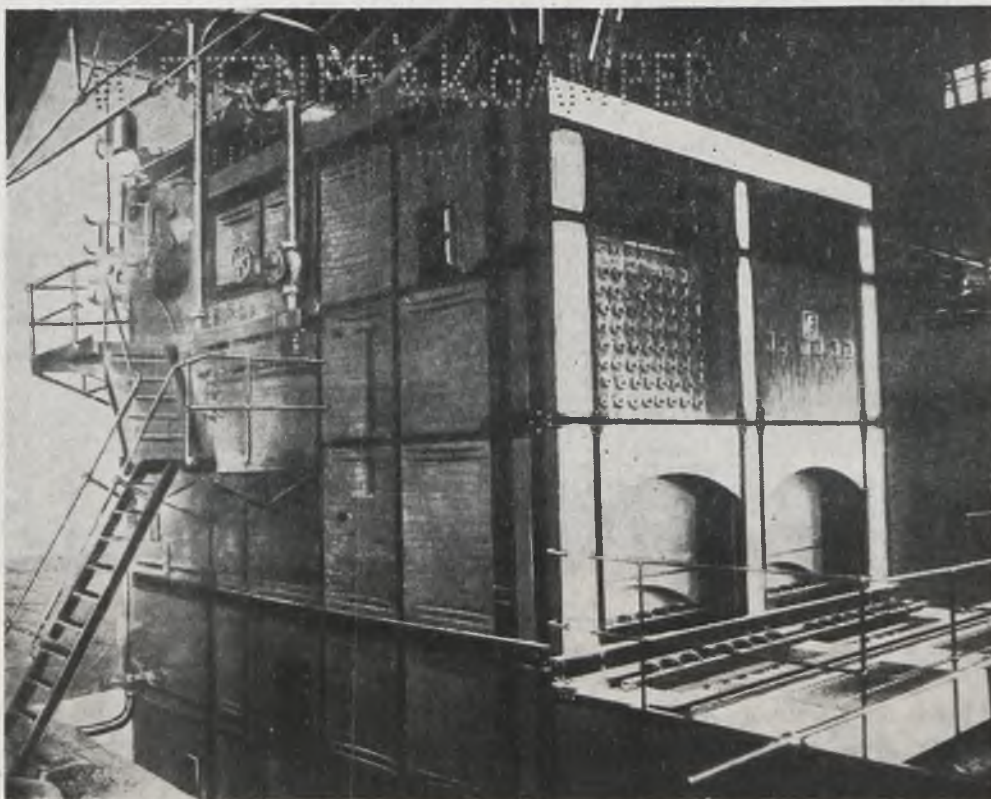
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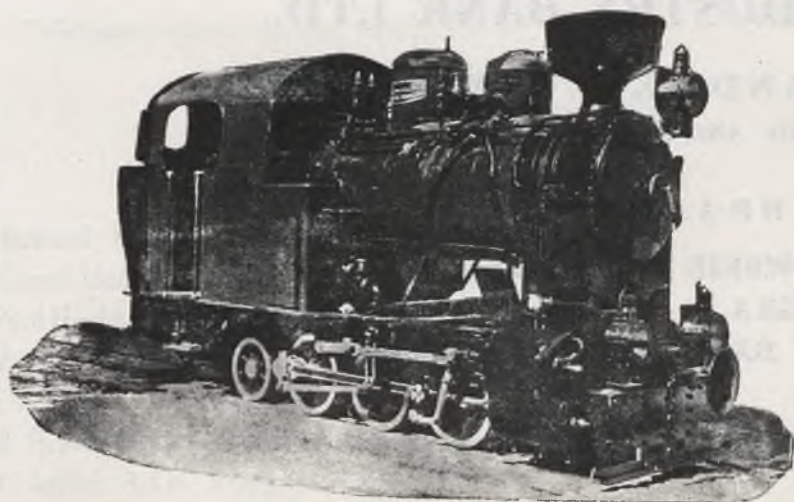
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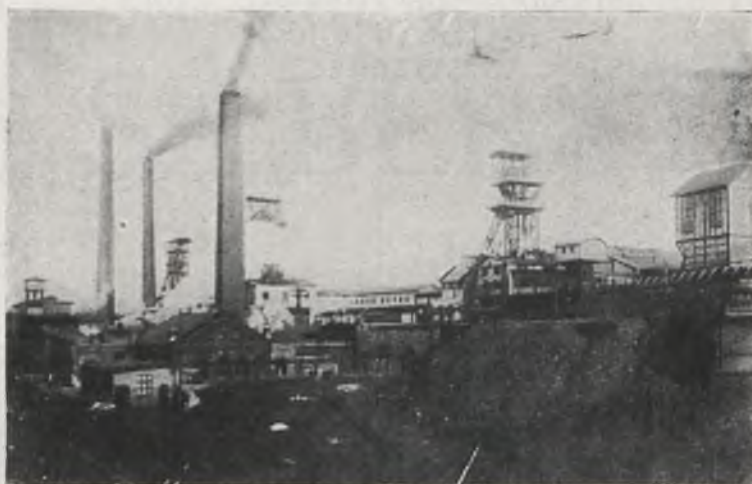
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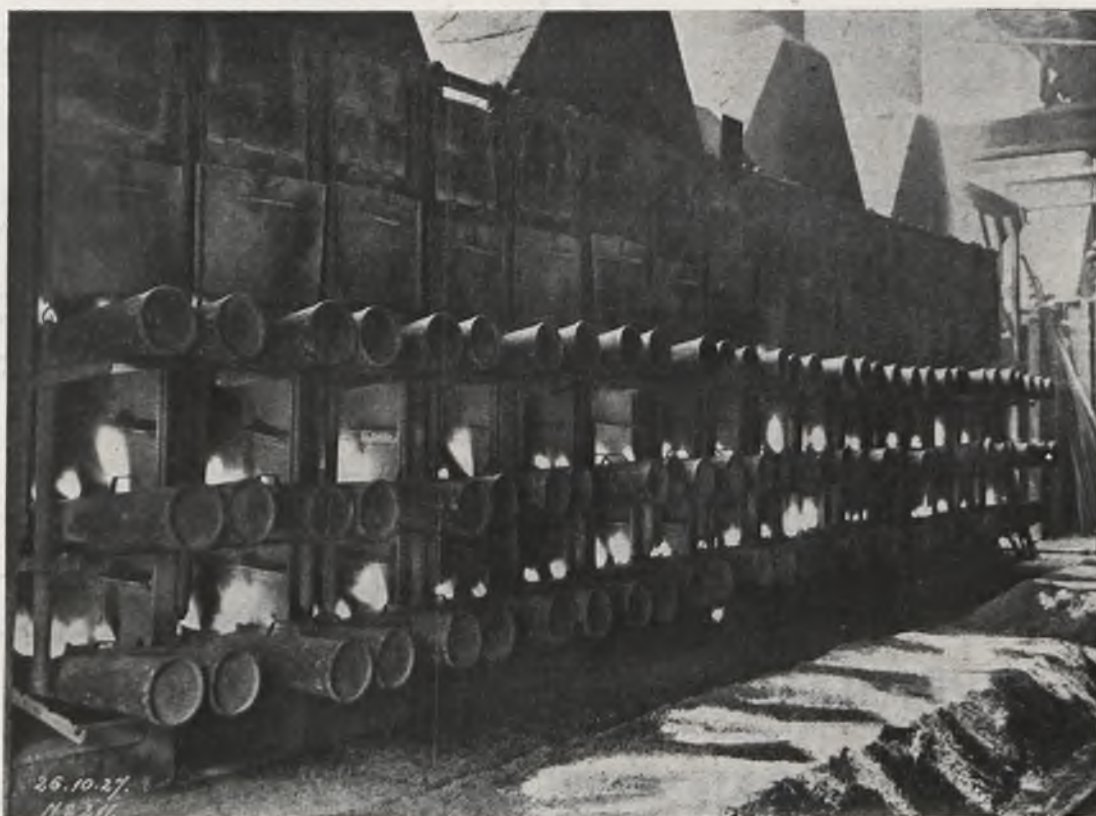
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