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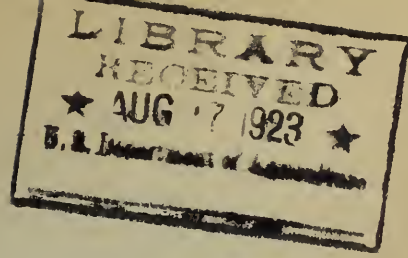
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CZECHOSLOVAKIA

By

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THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY

1925

1925

RESEARCH REPORT

1925

BY

1925

1. The first part of the report deals with the study of the reaction between the various components of the system under investigation. It is shown that the reaction proceeds in a series of steps, each of which is characterized by a certain rate constant. The values of these constants are determined from the experimental data and are found to be in good agreement with the theoretical predictions.

2. The second part of the report is devoted to a study of the effect of temperature on the rate of the reaction. It is shown that the rate increases with increasing temperature, and that the activation energy of the reaction is approximately 10,000 calories per mole.

3. The third part of the report is a study of the effect of concentration on the rate of the reaction. It is shown that the rate increases with increasing concentration, and that the reaction is first order with respect to the concentration of the reactants.

4. The fourth part of the report is a study of the effect of the presence of a catalyst on the rate of the reaction. It is shown that the rate increases with increasing concentration of the catalyst, and that the reaction is first order with respect to the concentration of the catalyst.

AGRICULTURAL SITUATION IN CZECHOSLOVAKIA

Brief of Report.

Czechoslovakia is industrial rather than agricultural. Wheat was imported before the war though an exportable surplus of rye and barley was produced. - - - - -	3
There has been a sharp decrease in land under plow and an increase in meadows, pastures and forage crops.- - - - -	7
Czechoslovakia's net wheat deficit before the war was about 13,000,000 bushels. The net rye surplus was between 3,000,000 and 4,000,000 bushels. - - - - -	10
The 1921 statistical balance showed a net deficit of wheat and rye amounting to 10,000,000 bushels, while imports were 2,000,000 bushels in excess of this theoretical deficit indicating increased consumption of wheat or building up stocks. --- - - - -	11
The 1922 statistical balance indicates a net deficit of wheat and rye amounting to 28,860,000 bushels. * - - - - -	12
In Bohemia, Moravia and Silesia the wheat area has been maintained to nearly pre-war level; while rye, barley, oats, potatoes and sugar beets have fallen off in recent years. - - - - -	13
The drop in cereal production is due largely to economic conditions - -	14
There has been a sharp increase in clover and other kinds of hay. - - -	15
Live stock numbers are about 11 per cent below pre-war as contrasted with a 20 per cent decrease in cereal acreage. - - - - -	16-17
Wheat and rye balances show tendency toward increased consumption of wheat. - - - - -	17-18
Czech figures show that on small holdings of from 5 - 12 acres the tendency is to emphasize seeding rye and oats for local consumption; while on farms of 250 acres and more the tendency is to seed wheat and barley: - "cash crops". - - - - -	21
On small holdings the tendency is to maintain larger numbers of cattle, pigs and chickens than on the large farms; while on farms of more than 50 acres the tendency is to maintain more sheep and goats - - - - -	22
The land reform involves only 8.3 per cent of the total plow-land and will not have a profound effect upon Czech agriculture except as regards sugar beets and industrial potatoes for alcohol manufacture; both of which are being produced in less quantities - - - - -	23

1. The first part of the document discusses the general principles of the law of contract, which are based on the idea of voluntary exchange between two or more parties.

2. The second part of the document deals with the formation of a contract, which requires the presence of certain elements, such as offer, acceptance, and consideration.

3. The third part of the document discusses the performance of a contract, which is the fulfillment of the obligations undertaken by the parties to the contract.

4. The fourth part of the document deals with the breach of a contract, which occurs when one of the parties fails to perform its obligations under the contract.

5. The fifth part of the document discusses the remedies available to a party who has suffered a breach of contract, such as damages and specific performance.

6. The sixth part of the document deals with the discharge of a contract, which occurs when the obligations of the parties are extinguished.

7. The seventh part of the document discusses the assignment of a contract, which is the transfer of the rights and obligations of a party to another party.

8. The eighth part of the document deals with the subrogation of a contract, which is the substitution of one party for another in the performance of a contract.

9. The ninth part of the document discusses the novation of a contract, which is the replacement of one party by another in a contract.

10. The tenth part of the document deals with the rescission of a contract, which is the cancellation of a contract and the restoration of the parties to their original positions.

11. The eleventh part of the document discusses the frustration of a contract, which occurs when an unforeseen event makes the performance of a contract impossible.

12. The twelfth part of the document deals with the discharge of a contract by agreement, which occurs when the parties to a contract agree to terminate the contract.

13. The thirteenth part of the document discusses the discharge of a contract by operation of law, which occurs when a contract is terminated by a court of law.

In Slovakia, agriculture is more a matter of "custom and habit" when contrasted with agriculture of the Czechs; which is based upon science and practice. - - - - -	25
There has been a slight decrease in areas under wheat, rye, barley and oats; and an increase in corn, but the rates at which the cereals were seeded both before and after the war have undergone little change. - - - - -	27
Sugar beets and potatoes have fallen off sharply. - - - - -	27
Farming in Slovakia is largely of the peasant type. - - - - -	28
Slovakia normally produces a surplus of wheat and rye. - - - - -	30
Live stock statistics are defective. - - - - -	32
Former Hungarian estates in Slovakia are being colonized by skilled Czech farmers, which should raise the character of the agriculture of this district. - - - - -	33
In Ruthenia there has been a sharp drop in areas under wheat and a sharp increase in rye seeding. - - - - -	34
Ruthenia is a wheat and rye deficit to the Republic of Czechoslovakia. - - - - -	37
Conclusions:	
The depressed state of agriculture in Czechoslovakia is temporary, depending upon unstable economic conditions. - - - - -	38
It is probable that wheat consumption will increase because of higher standard of living. - - - - -	39
Czechoslovakia's wheat deficit, in the near future, will doubtless be balanced by imports from the surplus producing states to the south rather than by drawing a considerable proportion of her flour from the United States as at present. - - - - -	39

AGRICULTURAL SITUATION IN CZECHOSLOVAKIA

The Republic as a whole. -

The Republic of Czechoslovakia is made up of five districts. Three of these districts, Bohemia, Moravia and Silesia, were formerly part of the Austrian Monarchy; and for clearness in this report the inhabitants of these three districts are called Czechs (see page 5). The two remaining districts were formerly part of the Kingdom of Hungary: (1) Slovakia, which for the most part is inhabited by the Slovaks, a race closely allied to the Czechs, and (2) Ruthenia, which is inhabited, to a large extent, by the Sub-Carpathian Russians. We shall call the inhabitants of this district Ruthenians.

The area of each of these subdivisions of the republic, with its population in 1921, and the density of the population per square mile is as follows:

	: Square : Miles	: Population	: Inhabitants : per Square Mile
Bohemia	: 20,057	: 6,684,932	: 332
Moravia	: 8,580	: 2,660,737	: 310
Silesia	: 1,987	: 670,837	: 338
Slovakia	: 25,617	: 2,993,479	: 117
Ruthenia	: 5,681	: 605,731	: 107
	: 61,922	: 13,595,716	: 220

The population of these districts in 1911 was 13,596,601, so that there has been but little total change. However, Bohemia has lost 117,031 inhabitants and the other districts have gained 116,146, showing a net loss of 885.

Prague, the capital city, with a population of 617,000, lies on the parallel of latitude passing about two degrees north of Winnipeg, Canada. Prague is on a branch of the River Elbe giving cheap barge

transportation to and from Hamburg and the North Sea, while the River Danube, skirting the Republic's southern frontier, gives cheap water transportation to the grain fields of Southeastern Europe and the Black Sea.

The Western districts of Bohemia, Moravia and Silesia are hilly to mountainous with valleys of a fair degrees of fertility. Before the war these districts produced an exportable surplus of rye and barley (malt). Slovakia merges into the great Hungarian plain, and is, in large part, good agricultural country producing a surplus of wheat. Farther east Ruthenia lies in the foothills of the Carpathian mountains, and although this district is of less importance in raising grain, it has a very considerable revenue from live stock and forestry production.

In the western districts 5,200,000 inhabitants derive their income from commerce and industry, while 3,400,000 are engaged in agriculture. The soil is not sufficiently rich and the climate is too severe to make it possible for this number of farming people to produce enough foodstuffs to feed the total population. So this portion of the republic, which is not agriculturally self-supporting, will continue to import an important share of its annual food requirement.

In Slovakia more than 2,000,000 or 66 per cent of the people are farming peasants, and although this region does produce a surplus, the republic as a whole can be classed only as semi-agricultural,* although 41 per cent of the people till the soil.

In 1922 the productive territory, including forests, was 33,084,622 acres, or 95.5 per cent (see Table I). The unproductive territory was 1,596,333 acres, or 4.5 per cent.

*In Roumania, which is primarily an agricultural state, 79 per cent of the population are farming peasants.

Separating the population of Czechoslovakia into groups according to their mother tongue brings out the following interesting facts:

District	Number of People in Each 100 Speaking Their Mother Tongue					
	Czech	Slovak	Ruthenian	German	Polish	Others
Bohemia, Moravia & Silesia	62.0	--	--	34.6	2.5	0.9
Slovakia	0.2	51.0	4.6	6.3	0.8	37.1
Ruthenia	----	0.2	43.0	12.4	0.1	44.3

Utilization of the Land.

The manner in which the land of Czechoslovakia was utilized in 1920, 1921 and 1922 under the republic in comparison with the manner in which this same territory was utilized when it was part of the Austrian-Hungarian Monarchy is brought out in the following table:

Table I:- Utilization of Land

Item	Area.			
	Pre-war*	1920	1921	1922
	1,000 Acres	1,000 Acres	1,000 Acres	1,000 Acres
Cereals	9,624	7,978	7,783	7,868
Leguminous	301	415	473	480
Industrial plants	183	169	145	142
Tubers, roots, etc.	2,778	2,342	2,451	2,463
Vegetables	88	83	81	79
Forage plants	2,103	2,851	2,977	2,921
Other plants	---	15	14	15
Untilled (fallow land)	393	899	637	611
Plow land	15,470	14,752	14,561	14,579
Drop from pre-war		-718	-909	-891
Increase in fallow land		506	244	218
Drop in land under crop		1,224	1,153	1,109
Plow land	15,470	14,752	14,561	14,579
Natural prairies	3,200	3,416	3,432	3,425
Vegetable gardens	---	59	40	40
Fruit gardens	409	319	321	321
Vineyards	59	46	43	43
Pastures	2,784	2,851	2,995	2,983
Forests	11,431	11,518	11,502	11,500
Lakes, Marshes, etc.	151	193	195	194
Unproductive	1,257	1,559	1,601	1,596
Total statistical area	34,741	34,713	34,690	34,681
Difference compared with pre-war		28	51	60

* See next page for note.

*NOTE:- The pre-war averages for the former Austrian territory of Bohemia, Moravia and Silesia are taken from "Statistisches Jahrbuch des K. K. Ackerbau-Ministeriums für das Jahr 1912." The averages for the five chief cereals for the former Hungarian territory of Slovakia and Sub-Carpathian Russia are from "Magyar Statisztikai Evkonyv". The other averages are partially from the same source, from "La Hongrie apres le Traite de Trianon", from Zpravy Statniho Uradu Statistichickeho Republiky Ceskoslovenske" and other authorities. The figures for the years 1920, 1921 and 1922 are from the "Zpravy" published by the Office of Statistics of Czechoslovakia.

Before the war there were in Czechoslovakia 112.9 acres of plow land per 100 inhabitants. In 1922 there were 106.3 acres per 100 inhabitants.

The first striking feature of Table I is that there has been a drop in the amount of land normally plowed: 718,000 acres in 1920, 909,000 acres in 1921, and a drop of 891,000 acres in 1922.

Examining the first group of farm crops, we find that the heaviest drop was in cereal acreage followed by "Tubers, roots, etc." (including sugar beets and potatoes). Industrial plants have fallen off as have vegetables. There has been an increased planting of beans, peas, etc.; a great increase in forage plants and a large amount of land has lain fallow. Examining the second group, we see that the meadows, (prairies) have increased, as have the pasture lands, while considerable land has been allowed to go back to marsh. In addition to the eight per cent of the plow land not plowed, 359,000 acres more than average are classed "unproductive," in the year 1922.

The general tendency during the past few years has been toward a decreased acreage in all cereals except corn, as shown in the following tabulation:

TABLE II:-Area.

Item	Pre-war	1920	1921	1922
	1,000 Acres	1,000 Acres	1,000 Acres	1,000 Acres
Wheat	1,727	1,566	1,557	1,529
Rye	2,593	2,271	2,226	2,223
Barley	2,373	1,710	1,583	1,670
Oats	2,460	1,972	2,003	2,021
Corn	374	369	363	395
Total (5 chief cereals)	9,527	7,888	7,732	7,838
Drop from pre-war average		-1,639	-1,795	-1,689
Percentage of drop		17.2	18.8	17.7
Potatoes	1,900	1,494	1,574	1,607
Sugar beets	699	517	544	520

The yields of the five chief cereals have also undergone changes due to changes in areas seeded, lack of fertilizers and climatic conditions as shown in the following table:

TABLE III.-Production.

Item	Pre-war	1920	1921	1922
	1,000 Bushels	1,000 Bushels	1,000 Bushels	1,000 Bushels
Wheat	37,760	26,375	40,658	30,462
Rye	61,000	33,681	55,764	46,683
Barley	59,722	37,244	47,358	42,104
Oats	66,238	59,659	72,324	64,516
Corn	8,126	9,648	10,501	8,995
Total (5 chief cereals)	232,686	166,607	226,605	192,760
Potatoes	267,542	183,810	136,429	290,465
Sugar beets	short tons 7,783	Short tons 5,270	Short tons 4,811	Short tons 5,145

Thus we have for each 100 inhabitants:

	Pre-War*		1922**	
	Acres	Bushels	Acres	Bushels
Wheat	12.7	277.7	11.2	224.1
Rye	19.1	448.7	16.4	343.3
Barley	17.5	439.2	12.3	310.0
Oats	18.1	487.1	14.9	474.6
Corn	2.8	59.8	2.9	66.2
Total Cereals	70.2	1712.5	57.7	1418.2
Potatoes	14.0	1967.7	11.8	2136.4
Sugar Beets	5.1	<u>Short tons</u> 57.2	3.8	<u>Short tons</u> 37.8

* Pre-war population used here 13,596,601 is according to Czech estimates. However based on Austro-Hungarian figures the population is estimated to have been 13,874,109.

** 1920 population 13,595,716.

It is not possible to discuss these changes indicated in the foregoing tables between pre-war conditions and those of the last three years for the entire territory of Czechoslovakia and, at the same time, to give a picture that would be true for the agriculture of the country as a whole. Therefore this discussion will be reserved until we take up the individual districts; but at this time we shall consider some of the general aspects of Czechoslovakia's agricultural situation.

The Wheat and Rye Situation.

Based upon estimates made by the Austrian government for Bohemia, Moravia and Silesia and upon estimates based upon certain Hungarian data, the following pre-war average wheat balances between production, consumption and import have been worked out:

Czechoslovakia's Pre-War Wheat Balance:

	Thousand acres.
Average seeded	1,727
	Thousand bushels.
" Production	37,760
" seed	<u>5,136</u>
Net production	32,624
Average consumption*	<u>45,496</u>
" deficit	12,872

* Population as given in Austro-Hungarian data.

Before the war approximately 13,000,000 net bushels of wheat were imported each year into the territory now comprising Czechoslovakia. The Czechs imported 13,300,000 bushels (see page 17); 700,000 bushels (see page 37) were imported by the Ruthenians; while the Slovaks produced a surplus of about 1,200,000 bushels (see page 30).

Czechoslovakia's Pre-War Rye Balance:

	Thousand acres.
Average seeded	2,593
	Thousand bushels.
" production	61,000
" seed	<u>8,264</u>
Net production	52,736
Average consumption*	<u>50,608</u>
Average surplus	2,128

*Population as given in Austro-Hungarian data.

Before the war approximately 3,700,000 bushels of rye were exported yearly from the territory now comprising Czechoslovakia making the net import of bread cereals about 9,129,000 bushels.

1921 Situation.

According to reports from the United States Consul, C. S. Winans, at Prague, Czechoslovakia imported (net) 10,600,000 bushels of wheat and wheat flour (calculated to a grain basis) between July 1, 1921 and June 30, 1922. Czechoslovakia also imported 2,058,000 bushels of rye in the form of grain and flour. Her total import of bread cereals was, thus, 12,658,000 bushels.

1921 Bread-Cereal Balance.

	<u>Wheat</u> Thousand acres	<u>Rye</u> Thousand acres
Area seeded	1,557	2,226
	Thousand bushels	Thousand bushels
Production	40,658	55,764
Seed	<u>4,631</u>	<u>7,091</u>
Net production	36,027	48,673
Estimated food requirement*	<u>44,654</u>	<u>49,720</u>
	(-) 8,627	(-) 1,047
Statistical requirement of bread cereals		(-) <u>8,627</u>
		(-) 9,674

*Population as given on page 1.

The 1921-22 import of bread cereals was more than 2,000,000 bushels above the statistically calculated requirement, indicating increased consumption, especially of wheat. This excess of wheat imported also includes stocks and hold-overs.

The 1922 Situation.

Based upon the rate of consumption used in computing the foregoing balance there is a shortage of 28,900,000 bushels of bread cereals for the crop season 1921-22 as compared with 10,000,000 bushels for the same period 1920-21.

1922 Bread-Cereal Balance

	<u>Wheat</u> Thousand acres.	<u>Rye</u> Thousand acres.
Area seeded	1,529	2,223
	Thousand bushels.	Thousand bushels.
Production	30,462	46,683
Seed	<u>4,549</u>	<u>7,086</u>
Net production	25,913	39,597
Estimated food requirement	<u>44,654</u>	<u>49,720</u>
	(-) 18,741	(-) 10,123
		<u>(-) 18,741</u>
Total statistical requirement of bread cereals:		(-) 28,864

This increased shortage is due chiefly to the great falling off in yield per acre for both wheat and rye (see tables page 8); although there was also a minor shrinkage in area. During this present season of 1922-23 there will be a reduced consumption of these bread cereals and a substitution of potatoes and lesser grains, especially for rye. There will probably be some increased importation of wheat, but not in proportion to the increased shortage.

Post-War Changes in Agriculture.

As already stated, Czechoslovakia is made up of two groups of provinces: (1) Those that were formerly under the Austrian Government: (1) Bohemia, Moravia and Silesia; these districts being occupied by the Czechs; (2) Those districts that were formerly under the Hungarian Government; Slovakia and Ruthenia. These latter districts are occupied by the Slovaks and a branch of the Russians, the Ruthenians.

The characters of these peoples differ greatly; the influence of the governments under which they have lived for centuries has been different; their agriculture and agricultural tendencies are not the same, and therefore to get a clear idea of the present situation, we must consider each district separately. We shall first take up the agriculture of the Czechs.

FORMER AUSTRIAN TERRITORY

(Bohemia, Moravia and Silesia)

The Country of the Czechs.

The influence of the war and post-war conditions on Czech agriculture are brought out in the following Table IV:

Table IV. Acreage and Yields in Bohemia, Moravia and Silesia

	Area in thousand acres									
	1903-12	1914	1915	1916	1917	1918	1919	1920	1921	1922
Wheat	862	895	909	901	897	898	843	804	866	846
Rye	2,043	2,003	2,033	1,960	1,925	1,922	1,850	1,725	1,700	1,699
Barley	1,427	1,288	1,155	1,078	1,059	947	899	917	849	878
Oats	1,812	1,875	1,737	1,609	1,512	1,429	1,375	1,399	1,446	1,449
Corn	27	--	--	--	--	--	--	38	41	42
Potatoes	1,256	--	--	--	--	--	--	966	1,005	1,019
Sugar Beets	534	--	--	--	--	--	--	429	451	431
	Production in thousand bushels									
Wheat	22,707	23,516	17,209	14,367	10,986	11,537	15,359	15,983	24,140	17,269
Rye	52,989	51,533	32,321	27,794	22,873	25,628	32,715	26,337	43,738	36,258
Barley	35,486	47,491	22,459	25,996	13,779	14,973	21,587	21,495	27,190	22,276
Oats	48,846	95,280	35,963	50,292	21,495	32,793	46,090	45,539	54,426	46,848
Corn	676	--	--	--	--	--	--	773	1,000	845
Potatoes	184,522	--	--	--	--	--	--	105,819	91,678	203,274
Sugar Beets	6,807*	--	--	--	--	--	--	4,425*	4,186*	4,307*
	Yield, Bushels per Acre.									
Wheat	26.3	26.3	19.0	15.9	12.2	12.8	18.2	18.5	27.9	20.4
Rye	25.9	25.7	15.9	14.2	11.9	13.3	17.7	15.3	25.7	21.3
Barley	24.9	36.9	19.4	24.1	13.0	15.8	24.0	23.4	32.0	25.4
Oats	27.0	50.8	20.7	31.3	14.2	22.9	33.5+	32.6	37.6	32.3
Corn	25.0	--	--	--	--	--	--	20.3	24.4	20.1
Potatoes	146.9	--	--	--	--	--	--	109.5	91.2	199.5
Sugar Beets	11.4*	--	--	--	--	--	--	10.3*	9.3*	10.0*

* Short tons.

In the first place, the area seeded to wheat during the war period exceeded the average pre-war area. This was due to the better relative price fixed for wheat and also to the forcefulness of the War Office which encouraged the maintenance of wheat production, keeping up the food supply of the cities,

the upper classes and the army. Before the war the Czechs imported yearly a round 200,000 long tons of flour (mostly wheat) from Hungary (Slovakia). They were accustomed to export some rye to what is now Poland so that as labor became scarce toward the end of the war period, rye was seeded in decreased amounts. Since the war, rye has continued to fall off although wheat has maintained its pre-war level and increased in relative importance as a crop. The barley grown by the Czechs was for the most part a high grade brewing variety. Large amounts of malt and unmalted grain were exported annually and much malt was used for the domestic manufacture of beer. The post-war increase in the cost of domestic beer has cut down local consumption very greatly, and this coupled with the high exchange rate of the Czech crown, which has hindered the export of grain and malt, has caused the areas under barley to decrease rapidly.

It is interesting to note that, after the War Office began to requisition wheat and rye from the Czech peasant, the production of wheat per acre fell from 26.3 bushels to 12.2 bushels in 1917. The yields per acre have been weak ever since and are only just beginning to recover now that free trade in grain has again been established. Had the yields in rye been as low as reported during the war period, a considerable portion of the Czech nation would have died of starvation. This conservatism of the Czech farmer in estimating his yields makes it a little difficult to judge of Czechoslovakian statistics even now.

DROP IN CEREAL PRODUCTION DUE TO ECONOMIC CONDITIONS.

During the war the manufacturer of beer was restricted and the export of barley limited, while the local consumption of oats was greatly reduced as the country was depleted of its horses. Following these initiating causes the wage of labor has greatly increased, making production costly. In the meantime the value of the Czechoslovakian crown has risen, making its purchasing power greater abroad, so that American and South-

western European products have come onto the Czech market in competition with home grown products to the detriment of the Czech farmers, imported wheat having dropped during the summer of 1922 from about 7 to 4 crowns per kilogram. These factors have forced the farmer to decrease cereal production in favor of more remunerative kinds of agriculture. One of these kinds of agriculture is breeding live stock, which means increased area under forage crops.

It has been seen in a foregoing table that there is a marked tendency to increase the acreage under forage crops as well as meadows and pastures. The increase in the area under clover in Bohemia, Moravia and Silesia is most striking. During the war the export of clover seed was developed to a very great degree and this has been continued up to date. The increase in the area under clover is shown below:

Area (in acres) seeded to clover for fodder and for seed.			
1904-13.....	1,215,692	1918.....	1,326,438
1914.....	1,423,074	1919.....	1,646,193
1915.....	1,594,655	1920.....	1,848,629
1916.....	1,771,964	1921.....	1,774,450
1917.....	1,583,545	1922.....	1,736,196

The production of clover hay increased from 1,835,000 short tons as the average for the period 1904-13 to 3,235,000 tons in 1920; the natural meadows yielding 4,747,000 tons of other kinds of hay that same year.

The drop in cereal production with the increase in forage production signifies an increase in live stock as noted above; but it is impossible to determine just how great this increase is. A live stock census of all Czechoslovakia has been published that is purported to have been made on December 31, 1920, which is admittedly faulty. Only the figures for Bohemia, Moravia and Silesia are the result of an actual enumeration. Those

for Slovakia and Ruthenia have been calculated from the Hungarian Census of 1911. It is reported by government officials visiting remote districts of the republic that some of the peasants have two and three times as many head of stock today as they had before the war. However, the peasants are very cautious in revealing how many animals they have, having learned a costly lesson during the war from the requisitioning officers of the Austro-Hungarian army who drew largely on the land of the Czechs for their animals for food and draft. The following comparison between the number of animals in Czech territory in 1910 and 1920 does not reveal the real situation, which is much better than indicated.

Number of Live Stock in Bohemia, Moravia & Silesia.

	Horses	Cattle	Swine	Sheep	Goats
Dec. 31, 1910	423,167	3,288,291	1,790,545	182,863	649,615
April 1918	---	2,511,869	543,393	147,111	752,519
Dec. 31, 1920	385,806	3,043,091	1,437,050	217,357	---
Gain in 1920 over 1918	---	531,222	893,657	70,246	
Percentage of gain	---	21.1	164.5	47.8	

It was generally reported in 1922 that the Czech peasants had more live stock per farm than before the war and that there is still a strong tendency to increase their number. During the two years and eight months between April 1918 and December 1920, there was a yearly average increase of 7.92 per cent for cattle, 61.88 per cent for swine and 17.9 per cent for sheep. The rapidity with which the Czechs actually regain their pre-war normal number of live animals and the total number that they will maintain in the future depends largely upon the amount of forage they are able to produce. If the rate of increase over consumption indicated above was maintained during the past

two years the number of animals in Czechoslovakia would be greater today than before the war; but there are no data to demonstrate whether this is true or not.

The country requires 5,000,000 swine to satisfy its requirements of lard, fats and flesh, and the number on hand will be increased as rapidly as the problems surrounding feed supply can be solved. It is the definite aim of the Czechs to export cattle or animal products to Western Europe. In any case it is indicative of the general trend toward increased animal husbandry that there has been a falling off in live stock of only 10.6 per cent against a drop of 18.8 per cent in cereal acreage in 1920, compared with pre-war average, 1903-12 while in 1922 the cereal drop reached 20.4 per cent.

WHEAT AND RYE BALANCE -- PRE-WAR, (1909-13)

The average pre-war wheat and rye balance of the Czechs according to "Das osterreichische Ernährungsproblem" Wien 1921 was:

Pre-war Wheat and Rye Balance (1909-13)

	Acres Seeded	Bushels Production	Bushels Seed	Net Yield	Food Requirement*	Bushels, surplus or deficit
Wheat	861,556	22,707,233	2,562,238	20,144,995	33,490,934	(-) 13,345,939
Rye	2,043,211	52,984,057	6,510,467	46,473,590	42,588,880	(+) 3,885,010
Net deficit of bread cereals						(-) 9,460,929

*Per capita consumption: wheat 198 lbs., rye 235 lbs. Population (1910)

10,148,768 see page 60 "Das osterreichische Ernährungsproblem"

Slovakia produced a wheat surplus of about a million bushels, most of which was shipped to the Czechs. Thus before the war from twelve to thirteen million bushels of wheat were imported annually into Bohemia, Moravia and Silesia from territories other than those lying within the present boundaries of the Czechoslovakian republic.

Before the war the Czechs exported some rye to Poland and Bucovina.

POST-WAR WHEAT AND RYE BALANCE.

If we employ the 1921 population and the above per-capita food norm of the Czechs, the relations of production to consumption in Bohemia, Moravia and Silesia in 1921 were approximately:

1921 Wheat and Rye Balance

	Acres seeded	Bushels yield	Bushels seed	Net yield	Food Requirement	Bushels Deficit
Wheat	866,051	24,154,671	2,575,605	21,579,066	32,988,800	(-)11,409,734
Rye*	1,699,808	43,352,046	5,416,254	37,935,792	41,950,044	(-) 4,014,252
Total deficit.....						(-)15,423,986

*Includes maslin.

A portion of this 11,000,000 bushels wheat deficit could have been covered by shipments of wheat from Slovakia where there was a surplus of three to four million bushels.

Between July 1, 1921 and June 30, 1922 Czechoslovakia actually imported wheat and wheat flour amounting to 10,600,000 bushels of which 600,000 would cover Ruthenia's deficit, while the remainder went to the Czechs.

This indicates that the Czechs imported considerably more wheat (about two to three million bushels) than their normal consumption rate would require.

During this same period only 2,058,000 bushels of rye were imported and about two million bushels were available in Slovakia, while the statistical requirement rye deficit was about 4,000,000 bushels.

It would seem that not only are the Czechs eating more but that they

are to a certain extent substituting wheat for rye in their diet.

1922 Situation.

The following approximations indicate the present Czech breadstuffs situation.

WHEAT AND RYE BALANCE

	Acres seeded	Bushels Yield	Bushels seed	Net Yield	Food Requirement**	Bushels Deficit
Wheat	846,191	17,279,379	2,516,543	14,762,836	32,988,800	(-)18,225,964
Rye*	1,698,808	36,252,127	5,417,001	30,835,126	41,950,044	(-)11,114,918
						(-)29,340,882

* Includes maslin

** Same as previous table.

This total statistical deficit would indicate that the imports by Czechs during 1922-23 would be about twice what they were from July 1, 1921 to June 30, 1922.

TENDENCIES IN CZECH AGRICULTURE.

The following table compares the manner in which the territories of Bohemia, Moravia and Silesia were utilized in 1922 under the Czechoslovakian Republic and the manner in which the same territory was utilized when part of the Austrian Monarchy during the period 1903-12.

UTILIZATION OF CZECH LAND

Item	Area	
	Pre-war (1903-12) 1000 acres	1922 1000 acres
Plow land:		
Cereals	6,160	4,926
Leguminous plants	214	325
Industrial plants	150	88
Tubers, roots, etc.	1,944	1,709
Vegetables	65	49
Forage crops	1,442	2,176
Other crops	--	11
Fallow	145	161
Total	10,120	9,445
Drop from pre-war		675
Increase in fallow land		16
Drop in land under crops		691
Plow land	10,120	9,445
Natural prairies	1,748	1,898
Gardens	256	231
Vineyards	28	14
Pastures	1,041	1,005
Forests	5,709	5,845
Lakes, marshes, etc.	107	153
Unproductive	627	875
Total statistical ares	19,636	19,466
Difference		170
		19,636

There are increases in unplowed till land, in natural prairies and forests; but the most marked increase is in forage crops (see page 15). There has been a great falling off in cereals as already noted as well as decreases in roots and tubers.

Aside from the factors in the general economic situation that influence these changes in Czech agriculture for the most part, there are certain in-

fluences exerted by changes in the size of the farm unit that should be noted. These influences will not greatly modify Czech agriculture; but the facts are given here for the light that they throw upon the general question of land reform as affecting all of Central Europe.

I. Large versus Small Farms in Cereal Production.

The differences between the farming on large and small holdings have been worked out for Czech conditions under the direction of Dr. Vladimer Brdlik. A single comparison will serve to show the general trend of field-crop operations as influenced by the size of the farm.

Comparison of the percent of cereals seeded in various parts of Bohemia, Moravia and Silesia on farms of various sizes.

Size of farm in acres	5 to 12	12 to 50	50 to 250	above 250
	Per cent	per cent	per cent	per cent
Wheat	14	18	20	27
Rye	41	35	31	23
Barley	14	16	22	28
Oats	31	31	27	22
	100	100	100	100

The larger the farm the greater is the percentage of wheat and barley, the two "CASH CROPS", seeded. The smaller the farm the more rye, the PEASANT'S FOOD, and the more oats, feed for his stock, are seeded.

In Bohemia, Moravia and Silesia there were:

176,942	farms	of	from	5	to	12	acres
103,592	"	"	"	12	to	50	"
56,341	"	"	"	50	to	250	"
3,002	"	"	more	than	250	"	"

The pre-war, 1904-13 average, number of acres and the relative area in percentages of the four cereals seeded were:

	<u>Acres</u>	<u>Per cent</u>
Wheat	861,556	14.0
Rye	2,043,211	33.3
Barley	1,426,990	23.2
Oats	1,811,695	29.5
	6,143,452	100.0

Wheat on the average was similar to the seeding on farms from 5 to 12 acres; rye seeding averaged similar to that on farms of from 12 to 50 acres; barley seeding averaged that on farms of from 50 to 250 acres; while oats seeding approximated that on farms between 12 to 250 acres. The total average agriculture was that of farms below 50 acres. That is to say the type of Czech agriculture is that of small peasant farming.

II. Large versus Small Farms in Animal Production.

The number of animals on the smaller holdings is greater per acre of agricultural land than on the larger farms, as brought out in the following table:

The Comparative Money Value of the Live Stock Held on the Large Farms and on the Small Holdings.				
Average per Acre of Agricultural Land				
Size of holdings (in acres)	5 to 12	12 to 50	50 to 250	over 250
	Kroner	Kroner	Kroner	Kroner
Horned cattle	323	211	171	123
Pigs	44	29	14	2
Sheep and goats	2.7	2.2	3.4	2.9
Fowls	11.0	6.6	3.0	0.3

The small farmer's family has always a horse or an ox, a cow, a calf or two, two or three pigs, a sheep or two and some chickens. Consequently there is a greater number of live stock per acre on the small farms and splitting up of the large estates always tends to increase within a country, the number of live animals per acre of plowland.

THE LAND REFORM.

In table III, in "La Reforme Agraire en Tchechoslovaque" the areas of the properties seized in the entire republic are given as follows:

TOTAL AREA OF LAND IN CZECHOSLOVAKIA AND LAND EXPROPRIATED.

Item	Total area in Republic	Area expropriated.	
		Total	Per cent of total
	Acres	Acres	Per cent
Land under cultivation:			
Plow land	14,751,485	2,463,600	16.7
Meadows	3,418,354	494,200	14.5
Gardens	379,219	55,300	14.6
Vineyards	46,200	3,700	8.0
Total	18,595,258	3,016,800	16.2
Pastures	2,851,448	448,500	15.7
Forests	11,517,660	5,989,000	52.0
Lakes, marshes, etc.	192,733	100,300	52.0
Unproductive	1,558,791	143,100	9.18
Total	34,715,890	9,697,700	27.9

According to the following information furnished by Dr. Vladimer Brdlik of the Zemedelskeho Odboru Ceskevysoke Skoly Technicke, the total areas of the agricultural lands expropriated are somewhat higher than the above:

	Agricultural lands (acres)		Percent.
	Total of Large Estates	Amount Expropriated from large Estates	
Czech lands	2,107,269 acres	1,829,405 acres	87
Slovak lands	2,090,861 "	1,391,297 "	67
	4,198,130 "	3,220,702 "	

43 per cent or - -

786,569 acres of Czech large estates were rented to small operators.
1,042,836 acres operated by the owners.
 1,829,405

26 per cent or - -

361,737 acres of large estates in Slovakia rented to small operators.
1,029,559 acres were operated by the owners.
 1,391,296

The total agricultural land in Bohemia, Moravia and Silesia is approximated at 12,580,874 acres of which 10,751,469 acres were owned and operated by the small farmers and an additional 736,569 acres of large estate lands were rented and operated by them. Only 277,864 acres of large estates are to remain in the possession of the former large owners, while 1,042,836 acres are to be transferred to new operators. This change involves only 8.3 per cent of the total plow-land and will not have a profound influence upon changes in the type of Czech agriculture, except as regards sugar beets and industrial potatoes (alcohol manufacture).

That the present changes in Czech agriculture are not the result of the land reform is seen by comparing the areas seeded in 1922 with Dr. Brdlik's table on page 12.

ACRES SEEDED FOR CROP OF 1922.

Wheat	846,191 acres	17.4%
Rye	1,698,808 acres	34.9%
Barley	877,630 acres	18.0%
Oats	$\frac{1,448,522}{4,871,151}$ acres	$\frac{29.7\%}{100.0\%}$

The ratio of oats seeding has remained constant; barley has decreased toward smaller farming and wheat and rye have risen towards large estate farming. There is no direct correlation between the rates of cereal seeding and the breaking up of the large estates in Bohemia, Moravia and Silesia. These changes are due to economic influences such as high cost and scarcity of labor, high cost of fertilizers, high cost of beer, lessening the demand for malting barley, etc. These distributing influences are temporary and when they are removed with the return of normal economic conditions the effects of the land reform will become apparent.

Dr. Brdlik estimates that, if all other factors remained unchanged, the land reform would:

Decrease WHEAT production	0.6%
increase RYE "	2.9%
decrease BARLEY "	3.5%
increase OATS. "	3.4%
resulting in a total increase cereal " of	0.6%
Alcohol production would drop	64.4%
Sugar " " "	13.0%
Potato " " "	0.8%

A drop of 0.6 percent in wheat would mean a loss of 3,600 tons; which is negligible, being much less than the seasonal differences in production.

The land reform, of itself, will have but little direct effect upon cereal production in Bohemia, Moravia and Silesia.

FORMER HUNGARIAN TERRITORY.

Slovakia.

When we cross the frontier of Moravia into Slovakia we begin to leave the agriculture of the West that is grounded upon science with practice and come into the land of farming by "custom and habit", the land where great political and economic changes make but little impression on peasant traditions.

To the west of this line of demarcation in Bohemia, Moravia and Silesia, that is, in the region of scientific agriculture, the manner in which the Czechs reacted to post-war conditions is brought out in the following table. Note the columns of percentages.

Areas in Acres Seeded by the Czechs.

	Average 1903-12		1922	
	Acres	Percent	Acres	Percent
Wheat	861,556	14.0	845,191	17.2
Rye	2,043,211	33.1	1,698,808	34.6
Bread cereals	2,904,767	47.1	2,544,999	51.8
Barley	1,426,990	23.1	877,630	17.8
Oats	1,811,695	29.4	1,448,522	29.5
Corn	26,909	0.4	41,735	0.9
Total cereals:	6,170,361	100.0	4,912,886	100.0
Drop below pre-war normal			1,257,475	
Percentage of drop:			20.4	

In 1922 the Czechs were seeding 51.8 per cent of their cereal area to bread grains (wheat and rye) as compared to 47.1 per cent in 1903-12, an increase of 4.7 per cent, while barley decreased 5.3 per cent. This is due to the relatively higher price that wheat and rye commanded above the price for barley. As the area under cereals dropped 1,257,475 acres due to shortage in man power, animal power and high cost of fertilizers, the Czechs exercised a selective judgment as to which cereals to retain, favoring wheat and rye and eliminating barley.

In Slovak territory on the other hand a round 494,000 acres went out of cultivation after 1919, but from the following table it will be seen that no marked indication exists that a selective judgment was exercised by the Slovaks as to which cereals to eliminate, such as we find in the cases of wheat and barley in the foregoing table. In Slovakia the areas dropped from cultivation were governed by the laws of chance and, since the chances

governing the seeding of each crop were about equal, the ratios at which the cereals were seeded in 1922 remained about what they were before the war. Note the similarity of percentages.

Areas in Acres Seeded by the Slovaks.

	<u>Average</u> <u>1911-15</u> <u>Percent</u>	<u>1920</u> <u>Percent</u>	<u>1921</u> <u>Percent</u>	<u>1922</u> <u>Percent</u>
	<u>area</u>	<u>area</u>	<u>area</u>	<u>area</u>
Wheat	761,204 25.7	645,732 24.4	634,303 25.0	625,805 24.0
Rye	<u>510,444</u> <u>17.2</u>	<u>501,744</u> <u>19.0</u>	<u>479,379</u> <u>18.9</u>	<u>477,652</u> <u>18.3</u>
Bread cereals	1,271,648 42.9	1,147,476 43.4	1,113,682 43.9	1,103,457 42.3
Barley	931,261 31.4	781,587 29.6	722,876 28.5	780,166 29.9
Oats	551,797 18.6	502,273 19.0	477,580 18.9	492,480 18.9
Corn	<u>211,609</u> <u>7.1</u>	<u>212,857</u> <u>8.0</u>	<u>220,398</u> <u>8.7</u>	<u>232,571</u> <u>8.9</u>
Total cereals -	2,966,315 100.0	2,644,223 100.0	2,534,536 100.0	2,608,674 100.0
Potatoes	571,918	451,995	492,890	503,362
Sugar Beets	165,223	88,524	90,661	88,469

There is a slight decrease in the rate of seeding of both wheat and barley and slight increases in rye, oats and corn. It will be noted, also, that there are variations of several tenths of percents in the rate at which the same crop is seeded from season to season. Potatoes have fallen off somewhat and there has been a heavy drop in sugar beets. Although estate agriculture never played a decisive role in Slovakia, since the large estates were often rented out in small plots rather than being operated as a whole, still a very slight effect of the dropping out of the estates is noticeable in the cases of wheat and rye as indicated by the following comparison:-

The yields obtained from the areas under the principle crops both before the war and during the three crop seasons 1920, 1921 and 1922 are given in the following table:

Slovakian Production.

	1911-15	1920	1921	1922
	1,000	1,000	1,000	1,000
	Bushels	Bushels	Bushels	Bushels
Wheat	13,757	9,833	15,536	12,111
Rye	7,455	6,913	11,311	9,552
Barley	23,842	15,568	19,944	19,582
Oats	15,407	12,406	15,325	15,362
Corn	<u>5,519</u>	<u>6,051</u>	<u>6,657</u>	<u>5,848</u>
Five Chief Cereals	65,980	50,771	68,773.	62,455
Potatoes	76,292	68,285	38,374	76,180
Sugar Beets	1,693*	843*	623*	837*

*Short Tons.

LARGE ESTATE AGRICULTURE VERSUS SMALL FARMING IN SLOVAKIA.

We are able to make a comparison between large and small estate operations in the former Hungarian districts that now constitute Slovakia through the courtesy of the Central Statistical Bureau in Budapest that prepared the material from which the following table was taken:

Areas (in acres) seeded in Slovakia in 1914.

	Large Estates		Peasant Holdings		Both Large and Small	
	Area	Percent	Area	Percent	Area	Percent
Wheat	275,072	35.5	538,349	24.0	813,421	27.0
Rye	114,358	<u>14.7</u>	401,906	<u>17.9</u>	516,264	<u>17.1</u>
Bread Cereals		50.2		41.9		44.1
Barley	227,003	29.3	686,429	30.6	913,437	30.2
Oats	99,932	12.9	464,353	20.7	564,285	18.7
Corn	<u>58,624</u>	<u>7.6</u>	<u>152,130</u>	<u>6.8</u>	<u>210,754</u>	<u>7.0</u>
Totals	774,994	100.0	2,243,167	100.0	3,018,161	100.0

It will be noted that the total and the relative manner in which the five chief cereals were seeded on both the large and small estates in the year 1914 are nearly identical with the total and relative seeding for the average of the period 1911-14 in the foregoing table. On the estates more than one-third of the cereal area was seeded to the "cash-crop", wheat. When the territory now constituting Slovakia became a portion of the Czechoslovakian Republic a considerable number of the large land owners, mostly Hungarian nobles, are reported to have abandoned their estates and to have fled to Budapest. This threw nearly 494,000 acres out of cultivation. All but 49,000 acres of this idle land was formerly under cereals; which greatly reduced the slight influence of estate agriculture upon Slovakian totals and reduced the farming of this district slightly but still perceptibly nearer to the level of peasant farming. That is to say, the difference between the percentage rate of seeding by the peasants in 1914 and the rate of seeding by all classes in 1922 is less than the difference in the percentage rate of seeding by all classes in 1914 and in 1922.

The Slovak peasants continued to seed their cereal areas in 1922 in about the same ratio that they seeded them in 1914 in spite of the very considerable demand for wheat existing in the western districts of the republic.

HYPOTHETICAL WHEAT AND RYE BALANCE

In the case of the Czechs we have Austrian figures for the actual amounts of wheat and rye required by the inhabitants of Bohemia, Moravia and Silesia. The Hungarian Government employed a per capita consumption figure for the entire Kingdom of 293.2 pounds of wheat and 79.4 pounds of rye per year; but the application of this figure to the present territories of Slovakia and Ruthenia does not give results that conform to the facts; that is, that before the war part of the Czech wheat deficit was covered

by importation from Slovakia. In order to get a rough estimate of Slovakian wheat movement, the same wheat consumption norm is employed in the following balance that was used in making the Czech balance: that is 198 pounds of wheat instead of the norm for all Hungary given above. These people in Slovakia eat some rye, considerable barley and not a little corn. It is estimated that their average rye consumption is indicated by their average rye production, or about 132 pounds per capita per year as it is improbable that this district exported wheat and imported rye. Their adjustment to economic variables was scarcely fine enough for that. The following approximate wheat and rye balance is given as indicating the probable average relations between production and consumption before the war.

Average (1911-15) Wheat and Rye Balance.

	Acres Seeded	Bushels Yield	Bushels Seed	Net Production	Food Requirement**	Bushels Surplus
Wheat	761,204	13,756,964	2,263,793	11,493,171	10,294,713	(+)1,198,458
Rye	510,444*	9,073,819	1,626,475	7,447,344	7,353,366	(+) 93,978

*Includes maslin.

**Population, from Hungarian statistics, 3,119,610. This figure is used because the other data employed here are from Hungarian statistics. The population figure (1910) published by the Czechs is 2,926,824. The wheat consumption norm per capita per year employed here is 198 pounds, Rye-132 pounds.

Before the war, a portion of Slovakia's normal wheat surplus (probably most of it) was shipped to the Czechs. The rye surplus is negligible.

Slovakia's Wheat and Rye Balance (1922)

	Acres Seeded	Bushels Yield	Bushels Seed	Net Production	Food Requirement**	Bushels Surplus
Wheat	625,805	12,110,551	1,861,491	10,249,060	9,878,481	(+)370,579
Rye	477,652*	9,552,268	1,521,985	8,030,283	7,056,058	(+)974,225

*Includes maslin.

**Population of 1921 - 2,993,479. Norms as in previous table.

Little of this wheat will move during the 1922-23 campaign though some rye will probably be shipped west to make up the Czech shortage.

Speaking generally, we may expect that the Slovakian wheat and rye situation will be little affected by the segregation of this territory from the old Hungarian Monarchy, or by the ordinary changes attending the establishment of the Czecho-Slovakian republic. There is one factor (the colonization of Slovak lands by Czechs) that may modify production somewhat, (see page 33).

GENERAL TENDENCIES OF POST-WAR SLOVAK FARMING.

The following table compares the manner in which the territory of Slovakia was utilized in 1922 under the Czechoslovakian Republic and the manner in which the same territory was utilized when part of the Kingdom of Hungary during the period 1911-15.

UTILIZATION OF LAND IN SLOVAKIA

Item	Area	
	Pre-war (1911-15)	1922
	acres	acres
Plow land:		
Cereals	3,087,678	2,623,787
Leguminous	80,495	144,166
Industrial plants	26,319	46,628
Tubers and roots	753,161	666,592
Vegetables	20,813	27,890
Forage plants	632,536	694,050
Other plants		2,879
Fallow land	214,201	386,390
Total	<u>4,815,203</u>	<u>4,592,382</u>
Drop from Pre-War		222,821
Increase in fallow land		172,189
Drop in land under crops		395,010
Plow land	4,815,203	4,592,382
Natural prairies	1,056,528	1,091,969
Gardens	122,102	106,987
Vineyards	23,022	21,750
Pastures	1,383,800	1,502,872
Forests	4,160,848	4,124,593
Lakes, marshes, etc.	35,367	32,140
Unproductive	519,847	619,366
Statistical Total Area	<u>12,116,717</u>	<u>12,092,059</u>
Difference		24,658
		<u>12,116,717</u>

There are increases in unplowed till-land, in meadows, in pastures and in idle unproductive land, which are to be expected if estates have been abandoned without the land being taken up by the peasants; but these changes are not great. In this district relatively large quantities of sugar-beets and potatoes were grown on the estates; and the areas at present under these crops have been reduced below pre-war: potatoes about 12 per cent, sugar beets about 46 per cent (see page 27). There is an increase in the area under forage plants indicating that in Slovakia there has been a tendency to bring live stock production up to pre-war normal more rapidly than cereal production. But there is no post-war census of live stock for Slovakia.

Employing the data given in the Hungarian Census of 1911 and estimating the number of live animals on a basis of the area of the portion of each divided county ceded by Hungary to Slovakia, the following approximation of the live stock within Slovakian territory in 1911 is obtained:

Number of Live Stock in Slovakia.

	<u>1911</u>	<u>1920</u>
Horses	181,555	The figures published by Czechoslovakia as the 1920 enumeration of live stock in Slovakia are identically the same as those that we calculated to be the number in 1911.
Cattle	1,095,919	
Swine	564,036	
Sheep	660,407	
Total	2,501,917	

There is, as noted, a wheat and rye surplus produced in Slovakia.

It is probable that the Czech demand for wheat and the local demand for rye will in years to come keep the ratios at which the cereals are seeded about the same as they have been in the past on farms operated by Slovak peasants. That is to say, there are probably no forthcoming factors affecting production strong enough to influence the agricultural habits of the Slovak population and in the future they will continue to farm in the same way that they have done in the past.

However, there is a policy now being pursued by the Czech government that may slightly improve the general productivity of these Slovak countries. That is the colonization plan.

FORMER HUNGARIAN ESTATES IN SLOVAKIA
BEING COLONIZED WITH CZECHS.

It is reported that agencies are locating Czechs in America who have a practical knowledge of agriculture, who have made a success in this country and who have amassed sufficient capital to swing a modernly equipped farming proposition. These Americanized Czechs are being made attractive offers of land in Slovakia and thousands are reported to be returning to Czecho-Slovakia to throw in their fortunes with the Republic.

It is hoped that their example will stimulate the Slovaks to higher endeavors. In any case each such Czech farmer will help increase Slovak production in just so far as he is a better farmer than the natives and the movement must work toward a general improvement in Czecho-Slovakian Agriculture.

SUB-CARPATHIAN RUSSIA
(Ruthenia)

In addition to cereal production the principal branches of agriculture in Sub-Carpathian Russia are sugar beet culture in the low lands, potato growing for alcohol in the foot hills and cattle grazing and forage production in the uplands of the Carpathian mountains. The district is also semi-industrial with mining, lumbering and some manufacture as the chief industries. The following table gives the contrast of the crop of 1922 with the areas seeded for the average crop years 1911-15:

Areas Seeded in Ruthenia (acres)

	1911-15		1920		1921		1922	
	Area	Percent	Area	Percent	Area	Percent	Area	Percent
Wheat	104,150	26.7	55,790	18.5	56,952	19.3	57,419	18.2
Rye	39,971	10.3	44,372	14.8	46,524	15.7	46,235	14.6
Bread Cereals	144,121	37.0	100,162	33.3	103,476	35.0	103,654	32.8
Barley	14,833	3.8	11,871	4.0	11,208	3.8	11,942	3.8
Oats	95,736	24.6	70,339	23.4	79,356	26.8	79,934	25.3
Corn	134,825	34.6	117,914	39.3	101,546	34.4	120,474	38.1
Total	389,515	100.0	300,286	100.0	295,586	100.0	316,004	100.0
Drop below pre-war average -							73,511	
Percentage of drop							18.9	
Potatoes	72,526		76,218		74,350		84,360	
Sugar beets	462		128		331		111	

As in other districts there has been a drop in the total area under cereals, though this decrease in the area seeded is not great. There is a marked drop in wheat, the food of the cities and a sharp rise in rye, the food of the peasants. Total bread cereals have fallen 4.2 per cent and corn has risen 3.5 per cent. These changes though relatively great are without special significance to the agriculture of Czechoslovakia as a whole.

The yields obtained from the areas under the principal crops both before the war and during the crop seasons - 1920, 1921 and 1922 are given in the following table:

Ruthenian Production				
	1911-15	1920	1921	1922
	1,000 Bushels	1,000 Bushels	1,000 Bushels	1,000 Bushels
Wheat	1,296	559	982	1,082
Rye	556	431	715	873
Barley	394	181	227	246
Oats	1,985	1,714	2,573	2,306
Corn	<u>1,931</u>	<u>2,824</u>	<u>2,844</u>	<u>2,302</u>
Five Chief Cereals:	6,162	5,709	7,341	6,809
Potatoes	6,727	9,706	6,377	11,011
Sugar	3.0*	1.0*	1.8*	0.8*

*Short tons.

A comparison between the manners of utilizing the land under the republic (1922) and under the former Hungarian Kingdom (1914) is brought out in the following table:

UTILIZATION OF LAND IN RUTHENIA

Item	Area.	
	Pre-War. Acres.	1922. Acres.
Plow land:		
Cereals	376,516	317,907
Leguminous plants	6,640	10,440
Industrial plants	6,415	7,952
Tubers and roots	80,409	87,056
Vegetables	2,669	1,814
Forage crops	28,276	50,890
Other crops	- - -	1,095
Fallow	34,174	64,011
Total	<u>535,099</u>	<u>541,165</u>
Increase over pre-war		6,066
Increase in fallow land		<u>29,837</u>
Drop in land under crops		<u>23,771</u>
Plow land	535,099	541,165
Natural prairies	395,755	435,380
Gardens	30,727	23,445
Vineyards	8,446	7,003
Pastures	358,883	475,697
Forests	1,561,704	1,530,016
Lakes, marshes, etc.	8,221	8,733
Unproductive	89,870	101,766
Statistical Total Area	2,988,705	3,123,205
Difference	<u>134,500</u>	
	<u>3,123,205</u>	

In Ruthenia, as in other districts of Czechoslovakia, there has been an increase in forage plants, meadows and pastures and in land classed as unproductive and there is an increase in the total of the statistically reported area.

It is reported that there have been great increases in live stock in this part of the republic but actual statistics demonstrating the fact are lacking. Most of the data relative to this territory are fragmentary and unsatisfactory. Estimating the live animals of Ruthenia in the same manner as given on page 32 for the Slovakian estimate we have the following:

Number of Live Animals in Ruthenia.

	1911	1920
Horses	23,326	The figures published by Czechoslovakia as the 1920 enumeration of live stock are identically the same as those that we calculated to be the numbers in 1911.
Cattle	273,755	
Swine	51,601	
Sheep	<u>107,762</u>	
	456,444	

Ruthenian Pre-War Wheat and Rye Balance. Certain of the peoples living in the far eastern end of Czechoslovakia in the Carpathian Mountains consume considerable quantities of corn meal mush in place of wheat or rye. The average per capita cereal diet of all the Ruthenians is approximated to be:

Wheat	176 pounds annually
Rye	66 pounds annually
Corn	110 pounds annually

Balancing pre-war production against consumption we have:

	Average (1911-15)		Wheat and Rye Balance			
	Acres Seeded	Bushels Production	Bushels Seed	Net Production	Food Requirement**	Bushels Deficit
Wheat	104,150	1,296,342	309,739	986,603	1,688,385	(-)701,782
Rye*	39,971	556,181	127,362	428,819	650,810	(-)221,991

*Includes maslin.

**Population from Hungarian statistics 574,385. The Czechs publish a 1910 population of 598,345; but the figure calculated from Hungarian data is employed because the other data are from the same source - - the Hungarian Ministry of Agriculture.

Before the war these small deficits were balanced by shipments from the near-by surplus districts of what is now the republic of Hungary.

Ruthenia's 1922 Wheat and Rye Balance.

	Acres Seeded	Bushels Production	Bushels Seed	Net Production	Food Requirement**	Bushels Deficit
Wheat	57,508	1,081,602	171,025	910,577	1,776,811	(-)866,234
Rye*	46,235	872,652	147,323	725,329	713,897	(+) 11,432

*Includes maslin

**Population of 1921--605,731. Consumption norms the same as in the previous table.

The small surplus of rye is negligible, but indicates that the increased acreage was a step in the direction of obtaining a rye production sufficient to meet the bread requirements of the lower classes. The wheat deficit was probably balanced by shipments from the Republic of Hungary.

There is little probability of any marked change taking place in the cereal situation in Ruthenia. This district will continue to require from 500,000 to 800,000 bushels of wheat yearly to cover its deficit.

Conclusions.

The depressed agricultural situation in Czechoslovakia is temporary, due, in the first instance to the unstable economic conditions with which the struggling republic has had to contend. To a lesser degree it has been affected by the land reform especially in Slovakia and Ruthenia. With the improvement of these economic conditions and the settlement of the land question the agriculture of the country is bound to return toward normal except as noted. There will probably be:

1. A decrease in beet sugar production;
2. An increase in live stock production;
3. A minor decrease in cereal production.

It is probable that, due to the adoption of a higher standard of living, Czechoslovakia will import more wheat than formerly, but this increased importation will be supplied from the surplus producing states to the south: Hungary and Yugoslavia just as before the partition of the Austro-Hungarian monarchy. These southern states will also probably supply most of the pork and pork products that Czechoslovakia will require so that the United States will soon relinquish this market. It is even possible that Czechoslovakia will in the not distant future compete with American producers for the bacon and lard markets of Poland and Eastern Germany.

