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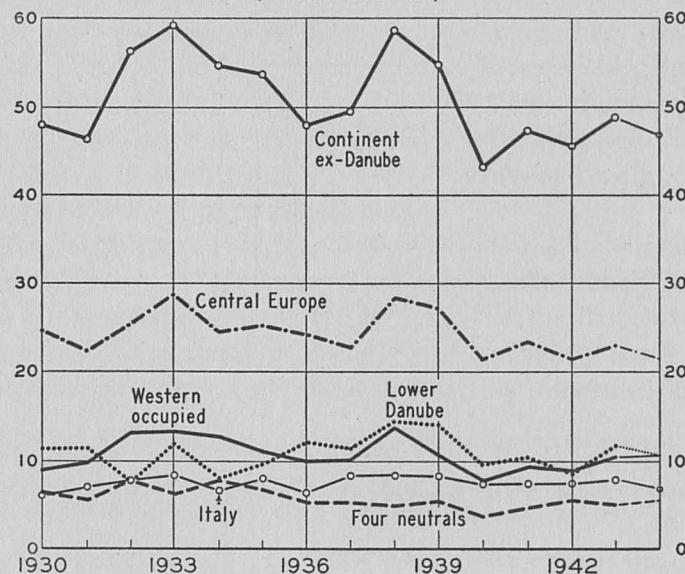
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VIII. CONTINENTAL EUROPE EX-USSR: IMPROVED BREAD-GRAIN POSITION

The principal feature of the bread-grain situation in Continental Europe ex-Russia in 1943-44 was a substantial increase in the supplies of both wheat and rye. The increase of the latter was especially important for Central Europe, where rye bread normally comprises a large portion of the total bread consumption.

The improved bread-grain position of 1943-44 was caused mainly by weather developments. During the growing season for the 1943 crop, the weather was much more favorable than during preceding war years. As a result, the wheat and rye harvests of 1943 in most of Continental Europe were better than in any of the three preceding years of the war, although both crops, particularly wheat, were still substantially below the prewar average (Chart 20).

CHART 20.—BREAD-GRAIN PRODUCTION IN CONTINENTAL EUROPE, EX-USSR, FROM 1930*
(Million metric tons)



* Data for recent years chiefly in table, p. 81. Data for 1939-44 include our approximations to the crops of countries for which neither official nor accepted private estimates are now available.

The fact that the wheat crop was below the prewar level may be explained by several factors. The shortages of labor and draft power, as well as of machinery and fertilizer, which had persisted during the

previous crop year, became even more acute; and some additional economic strains, such as transport difficulties and monetary inflation, increased in both Axis and occupied countries. Under such circumstances, the 1943 bread-grain acreage in several important countries of the Continent (particularly in France but also in some of the Danubian countries, Poland, and even Germany) could not be brought to the prewar level in spite of favorable sowing conditions and of light abandonment. The smaller bread-grain areas harvested in these important countries more than offset the successful acreage expansion of wheat in Italy, as well as that of both bread grains in several smaller countries, such as Belgium, the Netherlands, and Switzerland.

The improved bread-grain position of 1943-44 resulted in increased bread rations in most of the countries of the Continent and in a shorter extraction of flour in a few of them. This, however, should not be regarded as a net improvement of the food situation in Continental Europe ex-Russia during the fourth year of the war. The two crops that are the nearest substitute for bread grain in some European countries, corn in southeastern Europe and potatoes in Central Europe, were badly damaged by the summer and autumn drought of 1943. The drought affected the corn crop especially seriously in Hungary, Rumania, Bulgaria, and in the eastern portion of Yugoslavia, while in the more western regions and in Italy the damage was less important. Furthermore, in Italy the corn acreage was expanded, partially offsetting the reduction in yield.

Potatoes, on the other hand, suffered most in Central Europe—in Greater Germany, Czechoslovakia, and at least a part of Poland. The potato crops of southeastern Europe also were seriously damaged, but they are of only secondary importance in this area. In the western occupied countries the potato crops were damaged less, and that damage was at least partially compensated for by further expansion of the acreage (see Table 44).

The 1943 corn crop of Continental Europe ex-Russia was at least 10 per cent smaller than the moderate crop of 1942, and the potato crop was more than 15 per cent below the good crop of 1942. Of course, only a minor portion of these declines was reflected in the food consumption of these products. Most of the reduction was at the expense of their use for feed. But during the war, the food use of potatoes in Greater Germany has become so important in relation to feed use and the damage to the 1943 crop was so serious that the allocation of potatoes for human use was substantially reduced in 1943-44 as compared

with 1942-43. This reduction should have been and was compensated for by increased bread rations. Similarly, the food use of corn is so important in Rumania and Yugoslavia that the smaller 1943 crops must have increased the requirements for wheat and rye in these countries.

It should be added here that the 1943 barley crop was shorter than that of 1942 mainly because of reduced acreage in Greater Germany. Since barley has been extensively used in the production of bread flour on the Continent during recent war years, especially in 1942-43, a short barley crop could not help but raise requirements for the major bread grains without increasing the quantity of the bread produced. This is particularly true because the smaller barley crop of 1943 coincided with a poor potato crop, both of which are largely used in feeding hogs. Less barley must have been used for bread in Greater Germany in 1943-44 than in 1942-43, in spite of the fact that Germany abandoned plans to expand the number of hogs during 1943-44.

All this forces us to the conclusion that the food situation in Continental Europe ex-Russia could not have been significantly better during 1943-44 than it was in 1942-43, in spite of a substantial visible increase in bread rations (pp. 89-96).

SUPPLIES OF BREAD GRAIN IN 1943-44

The 1943 crop of the two bread grains in Continental Europe ex-Russia was so much more satisfactory than the deficient crop of 1942 that the total supplies of the two grains were about 8 per cent larger in 1943-44 than in the preceding crop year. This was true in spite of the fact that initial stocks of both wheat and rye were considerably smaller at the beginning of the 1943-44 crop year than they had been a year before.

By July 1943 the large stocks of bread grain accumulated on the Continent before the outbreak of war had been reduced to a relatively low level. Wheat stocks were especially small, perhaps smaller than in any year since 1925. Although official estimates of stocks are not available, they may be roughly approximated. In order to maintain bread rations, even at the low levels to which they were cut in the spring of 1943 (see table, p. 94), it was necessary to reduce Continental wheat carryovers by some 50 million bushels or about one-fourth between August 1942 and August 1943. Rye stocks also must have declined, but to a smaller extent, because the Continental rye crop is normally smaller than the wheat crop, and because the 1942 rye crop was more satisfactory than the wheat crop.

The accompanying table and Chart 20 (p. 78) give our rough approximations of the 1943 bread-grain crops of the principal regions of Continental Europe ex-Russia, with comparisons for other recent years. Similar data are given separately for wheat and rye in Tables 1, 2, and 43.

PRODUCTION OF BREAD GRAIN IN CONTINENTAL EUROPE EX-RUSSIA*

Year	Total	Danube ^a	Neutrals	Central Europe ^a	Western occupied Europe	Other
<i>Million metric tons</i>						
1934-38 average	64.0	11.1	6.0	25.0	11.5	10.4
1939.....	68.9	14.0	5.3	27.1	10.7	11.8
1940.....	52.6	9.5	3.7	21.3	7.7	10.4
1941.....	57.6	10.4	4.6	23.4	9.3	9.9
1942.....	54.1	8.6	5.5	21.4	8.8	9.8
1943.....	60.6	11.7	5.0	22.9	10.5	10.5
1944.....	57.5	10.8	5.5	21.6	10.6	9.0
<i>Percentages</i>						
1943 crop						
As % of 1942.....	112	136	91	107	119	106
As % of 1934-38.....	95	105	83	92	91	101

* Data from Tables 1, 2, and 43. For definition of areas, see p. 259.

^a Czechoslovakian territory ceded to Hungary is here included in Central Europe through 1938 and in the Danube thereafter. This ceded area provided some 260,000 tons of wheat and 130,000 tons of rye.

The total bread-grain production of Continental Europe ex-Russia in 1943 was 6.5 million metric tons, or 12 per cent, larger than in 1942. Wheat production increased more absolutely (by about 185 million bushels) and relatively (15 per cent) than did rye production. The percentage increase in the rye crop was only about half that for wheat, but in 1942 the rye crop had been relatively better than the wheat crop. The same table shows that, although bread-grain production was substantially larger in 1943 than in 1942, it was still some 5 per cent below the 1934-38 average. The wheat crop was down about 7 per cent from the prewar average, the rye crop only 2-3 per cent. The lesser decline for rye was to the advantage of Central Europe, where rye production is concentrated (Chart 21, p. 85).

About half of the total increase in the Continent's bread-grain production between 1942 and 1943 took place in the lower Danube, normally a surplus area. Since rye is of secondary importance in this region, nearly all of the increase consisted of wheat. We estimate that

the 1943 wheat production in the lower Danube was above the 1942 crop by more than 100 million bushels or about 40 per cent. This great increase resulted from enlargement of the sown acreage and from good yields per acre. Although the dry autumn weather was not particularly favorable for winter crops in the Danube area, the long mild autumn made it possible to extend seeding longer than usual, and thus to increase the area sown. The winter also was mild, and the damage to winter crops small. Timely rains in the late spring not only preserved the winter crops sown under droughty conditions, but also resulted in good yields of wheat, much better than those of the previous year. It appears probable, however, that, although the area sown to wheat for 1943 was larger than in the preceding year, it was still below the prewar level, especially in Rumania and Yugoslavia, where the war had more direct adverse effects on agricultural production. Consequently, the 1943 wheat crop of the lower Danube, on a comparable territory, was evidently only slightly above the high average for 1934-38.

The fact that such a large portion of the total increase in the Continental bread-grain crop of 1943 took place in the grain-exporting region of the Danube must have had an unfavorable effect on supplies in the grain-deficit area of the Continent, since only a portion of the Danubian surpluses could be moved under war conditions. Net exports of bread grain (including flour) from the lower Danube for the five prewar years 1934-39 annually averaged about 1.6 million tons and consisted almost entirely of wheat (1.5 million tons or 55 million bushels). Under normal conditions, a Danubian wheat crop the size of the 1943 crop would result in exports of this order, but there are numerous indications that less than half of this quantity was actually shipped to the deficit areas of the Continent. Producers were reluctant to relinquish their surpluses when confronted by a rapidly deteriorating monetary situation; and tight transport conditions precluded shipment of the available surpluses before the end of the crop year.

The main surpluses of wheat from the 1943 crop were probably in Rumania, Hungary, and in that portion of Yugoslavia north of the Danube (Banat and Backa). Other parts of Yugoslavia, particularly Croatia, experienced a deficit in bread grains, while the collected Bulgarian surpluses were probably utilized mainly to supply some of the newly annexed regions (normally deficit in bread grain) and to maintain the German army located in the Balkans. Early in the crop year, lively negotiations between Rumania and Hungary, as wheat exporters, and various Continental importing countries such as Belgium, Switzer-

land, Finland, and Greece, as well as Germany, created expectations that exports of wheat would be substantial during 1943-44. Wheat exports from Hungary and Rumania were actually resumed (after having been practically discontinued during the preceding crop year), but they increased much more slowly than expected.

The German-Rumanian trade agreement, not completed until February after protracted and difficult negotiations, set rather small quotas for bread-grain deliveries by Rumania—200,000 tons of wheat and 70,000 tons of rye.¹ The Swiss-Rumanian agreement, completed earlier and calling for substantial exports of wheat to Switzerland, had not been put into effect before the German-Rumanian agreement was completed. In the latter agreement Germany guaranteed monthly transit of 20,000 tons of merchandise from Rumania to Switzerland.² Because of transport difficulties, exports of bread grain from Rumania to Belgium and Finland were apparently accomplished by delivery of near-by German grain (presumably rye) to these countries against offsetting shipments of Rumanian wheat to Germany.³ Rumanian exports of wheat to Greece and Turkey were small (according to press reports 10,000 tons and 6,000 tons respectively) and could be transferred mainly by small vessels.

According to Hungarian trade statistics, wheat exports from Hungary were resumed during the autumn of 1943, the principal destinations being Germany, Italy, Switzerland, and Finland. However, in spite of the fact that Hungary harvested at least an average wheat crop in 1943, her exports of wheat were reported to be far below the peacetime average and her grain exports smaller than usual in relation to total exports.⁴

All this indicates that Rumanian and Hungarian exports of wheat were probably much smaller than the size of their crops might suggest. Germany undoubtedly made strong efforts to move as much food as possible from the Danube late in the spring, when the rapid advance of the Russian army placed the Danubian countries in immediate danger.⁵

¹ These figures were revealed in *Südost Economist* (Budapest), Mar. 31, 1944, p. 113, and although not official may be regarded as reliable. It may be of interest to remark that the quotas established for delivery of pulses (peas, beans, and lentils) were in total as large as the total for the two bread grains.

² *Ibid.*; and *Deutsche Allgemeine Zeitung* (Berlin), Jan. 17, 1944, p. 5.

³ *Nachrichten für Aussenhandel* (Berlin), Sept. 22, 1943, definitely indicated this method with regard to shipments to Finland. *Krakauer Zeitung*, Mar. 21, 1944, reports a Belgian-Rumanian agreement according to which Rumania was to deliver 100,000 tons of grain to Belgium.

⁴ *Kölnische Zeitung*, June 1, 1944.

⁵ *Corn Trade News*, Mar. 29, 1944, p. 122, reported such efforts.

Nevertheless, German imports of bread grain from this area during 1943–44 could not have been much larger than the minimum import requirements of such western occupied countries as Belgium and Norway, as well as those of Finland—requirements which Germany was forced to cover from some source. Press reports indicate that there was a considerable surplus of wheat in the Danubian area during the second half of the 1943–44 crop year. In Rumania the government required larger farms to store grain, and flour mills and bakeries to maintain substantial reserves of wheat or flour.⁶

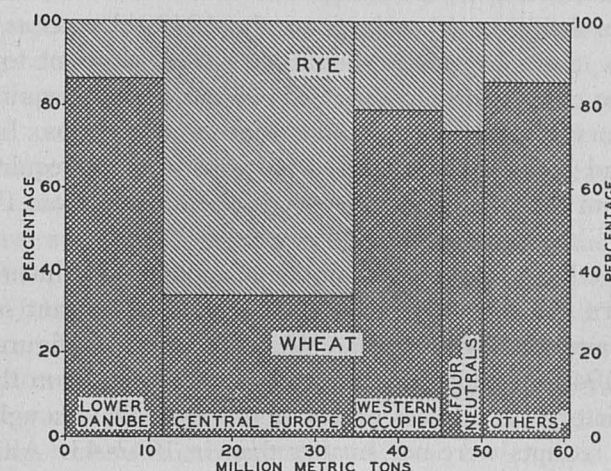
It thus appears that the grain-deficit areas of the European Continent could not have profited much from the larger 1943 wheat crop of the lower Danube. The larger portion of the increase in supplies served to raise the bread rations of the Danubian countries (p. 93) and to increase the wheat carryover in this area at the end of 1943–44. However, the tabulation on page 81 shows that the 1943 bread-grain production in the normally grain-deficit areas of the Continent was also substantially larger than in the preceding year. The only exception was the Iberian Peninsula, where the Spanish and Portuguese crops suffered substantial damage from spring drought and excessive heat and were consequently smaller than in 1942. This reduced the total 1943 production of bread grain of the European neutrals by half a million tons or nearly 10 per cent below that of the previous year. This decrease was not compensated for by a net increase in imports from overseas. It is true that Spain and Portugal were able to continue to import overseas wheat in 1943–44, at least on the level of 1942–43. Portugal imported even more wheat than in the previous year, but her bread-grain situation worsened, and she introduced bread rationing in April 1944—the last Continental country to do so (p. 94). In Switzerland the reduced 1943–44 imports of overseas wheat were compensated for by imports of Hungarian and Rumanian wheat and by good potato crops. Swiss production of bread grain in 1943 was smaller than in 1942, in spite of a 10 per cent expansion of the sown area.

Bread-grain production in the Axis countries and in the European occupied countries was substantially larger in 1943 than it was in 1942. In Central Europe wheat production showed much greater improvement in 1943 than did rye production, mainly because a relatively larger wheat area was harvested in 1943. This increase in acreage is explained by the slight abandonment of autumn-sown crops in 1943, whereas in 1942 an unprecedentedly large part of the area sown to winter crops

⁶ *Kölnische Zeitung*, Aug. 1, 1944, p. 5.

had to be abandoned and could not be resown to spring wheat. But, although the 1943 wheat crop in Central Europe was substantially larger than that of 1942, it was still more than 10 per cent below the 1934–38 average. On the other hand, the 1943 rye crop, which is twice as important in Central Europe as the wheat crop (Chart 21), was perhaps

CHART 21.—COMPARISON OF WHEAT AND RYE CROPS IN SPECIFIED DIVISIONS OF CONTINENTAL EUROPE EX-USSR, 1943*



* Based on data in Tables 1, 2, and 43.

only some 6 per cent below the 1934–38 level, although it showed an increase of only 4–5 per cent over the 1942 crop. The rye production in the territory of the Old Reich, if we may believe the production figures revealed by Herbert Backe, Germany's Food Secretary,⁷ was still closer to the prewar level—within 2–3 per cent of the 1934–38 average. In total the bread-grain production of Central Europe in 1943 was larger than in the preceding year by about 1.5 million tons or some 7 per cent. But it was still more than that percentage below the 1934–38 average. Practically all the increase took place in Greater Germany itself, since the 1942 wheat and rye crops in Poland were generally satisfactory, and bread-grain production there declined rather than improved in 1943. In Czechoslovakia not much change took place in 1943 over 1942. Germany obtained substantial quantities of bread grain in 1942–43 from both of these Central European countries, and

⁷ "Die Leistungen des deutschen Bauern," *Völkischer Beobachter* (Berlin), Oct. 4, 1943, pp. 1, 2; see also Helen C. Farnsworth and Meriam A. Clough, "World Wheat Survey and Outlook, January 1944," *Wheat Studies*, January 1944, XX, 121.

continued to receive such imports in 1943-44, apparently on a comparable level.

The larger supplies of bread grain in Greater Germany from the increased 1943 domestic crop and from imports secured in Central Europe were supplemented by somewhat larger imports from outside this area. Although receipts of bread grain from the Danubian countries were smaller than would be expected from the size of their crops, they were undoubtedly of the order of half a million tons;⁸ at this level, they were probably twice as large as the 1942-43 receipts from the same source. Such a quantity should have been sufficient to cover the total German contribution to the 1943-44 bread-grain requirements of Belgium, Norway, and Finland and to leave some surplus. In contrast, Germany had had to cover a large portion of these requirements in 1942-43 from other Continental sources, presumably from Poland and France.⁹

German takings of bread grain from outside Continental Europe ex-Russia are still more conjectural. The only significant source was the invaded area of Soviet Russia. We do not hazard a figure for these receipts in 1943-44, since the information available from the press is too contradictory. It appears probable, however, that though not very large, these receipts were not smaller than in 1942-43. Although the Germans had previously been forced to abandon the rich agricultural areas of the North Caucasus and Don River, at the time of the 1943 harvest they still held practically the whole Ukraine and a portion of the central Black Soil region (see Chart 23, p. 105). Moreover, in these areas crop production was better restored in 1943 than it had been in 1942 (p. 106).

In the western occupied countries, the production of both wheat and rye increased in 1943 substantially more than in Central Europe. The increase in wheat production is mainly explained by a substantial increase in the French crop, even though this crop was harvested on an

⁸ The British government estimated possible Nazi imports from the Danubian countries at about this figure (*New York Times*, Mar. 24, 1944, p. 3).

⁹ On the basis of news in the press, Belgian, Norwegian, and Finnish receipts of bread grain during the 1942-43 crop year may be roughly approximated at about half a million tons, while in 1943-44 a somewhat smaller quantity was required. See *Krakauer Zeitung*, Dec. 16, 1943; *Deutsche Zeitung in Norwegen* (Oslo [?]), Dec. 9, 1943; *Völkischer Beobachter*, Apr. 3, 1944. The information on German requisitioning of wheat in France is not clear. The better French crop of 1943 suggests that 1943-44 requisitions exceeded those in 1942-43, in spite of the fact that in the earlier year France still succeeded in obtaining substantial quantities of wheat from French North Africa, before the Allied occupation in November 1942. There can be no question that German requisitions of French wheat exceeded the needs of the German army of occupation in France and the bread-grain requirements of French prisoners and workers in Germany.

area far below the prewar level because of the continued shortages of labor and equipment in French agriculture. The increase in rye production was caused mainly by acreage expansion in Denmark, the Netherlands, and Belgium. The rye acreage in Denmark increased at the expense of the wheat acreage, which farmers were reluctant to maintain after the heavy winterkilling of wheat experienced in the preceding year. In the Netherlands the rye acreage expanded more than the area under wheat; and, as in Belgium, the net increase resulted from efforts to reduce the heavy prewar deficits of bread grains. As a result of these developments, rye production in the western occupied countries in 1943 was not only substantially larger than in 1942 but also above the prewar average. But contrary to the situation in Central Europe, rye was still only a secondary source of bread in this area; and the improved wheat crop of 1943 was still more than 10 per cent below the 1934-38 average (see Tables 2 and 43). Consequently, the 1943 bread-grain production of the western occupied countries, although larger than that of 1942 by more than 1.5 million tons, was still about 1 million tons, or nearly 10 per cent, below the 1934-38 average. The supply situation, however, was markedly better than in any of the three preceding war years, and this found expression in increased bread rations and some improvement in the quality of bread in certain of these countries (pp. 92, 95).

The group of "other" countries in our table on page 81 is a heterogeneous group. Bread-grain production therein is dominated mainly by the large wheat crop of Italy, but the group includes also Greece, Finland, and the Baltic states. Before the war Italy and the Baltic states were approaching self-sufficiency in bread grain, whereas Greece and Finland, particularly the former, depended heavily on overseas imports.

Italy harvested a large wheat crop in 1943 before the Allied invasion—a crop privately estimated at 280 million bushels, as compared with the 1942 crop of 268 million bushels. The last figure was also the average for 1934-38. The increase of outturn over the 1942 level must be explained mainly by expansion of the wheat area through plowing up some pasture land. The yield per acre in 1943 was about the same as in 1942, and slightly below the 1934-38 average. But in southern Italy drought reduced the 1944 yields and, with the vast destruction caused by the war, greatly increased the deficit in Italy under Allied occupation. The deficit persisted in spite of the fact that the Allies brought in a substantial quantity of wheat for the civilian population—

a quantity that may have reached or exceeded 25 million bushels.¹⁰ The 1943-44 supplies of domestic wheat in northern Italy should have been better than in the preceding year, but apparently receipts of wheat from the Danube countries were discontinued. There were rumors, denied by the Germans, that they were shipping out Italian wheat. There are more definite indications that Italy delivered to Germany a substantial quantity of rice in 1943-44 in spite of the loss of her southern provinces. Notwithstanding the good wheat crop, the authorities in northern Italy apparently had more difficulties than ever in collecting grain from producers. This perhaps explains why the bread rations to all consumers could not be raised until late in the spring of 1944 (p. 96).

Greek supplies of bread grain continued to be short in 1943-44, as they were during the previous year, although some improvement probably took place. The 1943 bread-grain crop of Greece should not have been smaller than the crop of the preceding year, and it may have been somewhat larger because of more favorable weather. Receipts of relief wheat also were somewhat larger. In April last, monthly shipments of relief wheat to Greece were raised from 15,000 to 24,000 metric tons. This should have brought total wheat receipts during 1943-44 about one-fifth above those of the previous year, unless a shortage of tonnage prevented the shipment of the allotted wheat. Canada which had been shipping 15,000 tons of wheat before April, continued to supply this amount, while the additional shipments were obtained from Argentina. In the earlier stage, the neutral relief commission assisted mainly the urban population, but in 1943-44 it succeeded in expanding the scheme to rural areas on the mainland and to the islands.¹¹

Information on the bread-grain situation in Finland and in the Baltic states is very scanty. There are indications, however, that Finland's bread-grain area for the 1943 harvest was extended at least 10 per cent, and that her supplies of domestic bread grain were somewhat larger in 1943-44 than during the preceding year. This reduced requirements for imported bread grain, which she received directly from

¹⁰ "Italy's Economy: The Situation Now," *Foreign Commerce Weekly*, Nov. 18, 1944, p. 4. This article by the Office of War Information revealed that from July 1, 1943 through Sept. 10, 1944 there were shipped to Italy from the United States 231,400 ship tons of wheat and 284,400 ship tons of flour or, in terms of wheat, about 23-24 million bushels. On the basis of this information it may be estimated that southern Italy received about 20 million bushels of wheat from that source during the 1943-44 crop year. In addition, she may have received some 5 million bushels of Australian wheat and nearly 3 million of Canadian (see Table 14).

¹¹ A history of the relief to Greece from its beginning to the spring of 1944 is given in an article by F. D. Kohler, Assistant Chief of the Division of Near Eastern Affairs ("The Relief of Occupied Greece," *Department of State Bulletin*, U.S. State Dept., Sept. 17, 1944, pp. 300-05).

Germany or through German intermediation from Hungary and Rumania.¹² Some expansion of the 1943 bread-grain crop probably occurred also in the Baltic states, but since the rainy weather there, as in Finland, was apparently unfavorable, the total quantity of bread grain harvested in 1943 may have been about the same as the year before.¹³ Another unknown factor is the quantity of grain requisitioned by the Germans to supply the army.

The blackout on foreign trade statistics makes it impossible to get precise information concerning the total quantity of bread grain obtained during the 1943-44 crop year by Continental Europe ex-Russia from outside. However, if we disregard the conjectural German receipts of bread grain from the invaded territory of the USSR, it is possible to say quite definitely that outside receipts of bread grain in 1943-44 were somewhat larger than similar receipts in 1942-43.

Imports of overseas wheat by neutral countries in 1943-44 were about the same as during the previous year, since larger Portuguese imports were about offset by smaller imports into Switzerland and Sweden. Consequently, the wheat brought by the Allies into Italy and the increase in relief shipments to Greece represent a net increase in the overseas bread grain received by Continental Europe in 1943-44. The total receipts of overseas bread grain may therefore have approximated 1.8 million tons, against only about 1.3 million tons, or slightly more, in the previous year. If we guess German receipts of bread grain from the invaded area of Soviet Russia at about .5 million tons (and this appears to be a conservative appraisal), then the total quantity of bread grain received by Continental Europe ex-Russia from the outside should be estimated at more than 2 million tons.

BREAD RATIONS AND BREAD-GRAIN CONSUMPTION

The larger bread-grain supplies of 1943-44 were reflected in most of the countries of Continental Europe by increased bread rations and by some relaxation of the husbanding of bread-grain supplies. Bread rations were increased more often than the quality of bread was improved through reduction of admixture requirements and/or of flour extraction rates. Reductions in the extraction rates for flour were practically limited to a portion of the lower Danube area (Hungary, Rumania, and perhaps Bulgaria) and to France.

¹² *Krakauer Zeitung*, Dec. 16, 1943, said that Finland should receive from Germany, Hungary, and Rumania 100,000 tons of bread grain in 1943-44, while in 1942 it imported 236,000 tons, according to the *Deutsche Zeitung in Norwegen*, Dec. 9, 1943.

¹³ Information on the condition of crops in Finland and in the Baltic states was published in the *Nachrichten für Aussenhandel*, Aug. 17, Sept. 22, and Oct. 8, 1943.

Reductions in the proportions of bread-grain substitutes in bread flour were applied widely in 1943-44, but in several cases the reasons for these reductions were shorter supplies of substitutes rather than considerations concerning the quality of the bread. Without doubt, the sharp reduction in the admixture of coarse grains in the bread flour of Bulgaria and Rumania in the fall of 1943 reflected the crop situation: the 1943 wheat crop in those areas was much better than the corn crop, and corn was one of the principal substitutes for bread grain. It was definitely reported that, if the heavy admixture of corn in bread flour was continued in Bulgaria, a shortage of fodder would develop.¹⁴

In order to stretch available supplies of wheat for the urban population, the proportions of various bread-grain substitutes in the bread flour of the lower Danube countries had been raised in the spring of 1943 to an exceptionally high level, quite unusual for this wheat-surplus area.¹⁵ Several circumstances contributed to the situation. Not only had the 1942 wheat crops been short, but considerable difficulty had been encountered in forcing producers to meet their obligations for grain deliveries, under conditions of persistent price inflation and loss of confidence in domestic currencies. Measures adopted during the 1943-44 crop year indicate governmental recognition of these factors. Prices for wheat for the much larger 1943 crops were substantially raised in practically all of the Danubian countries (see p. 100), and the quotas which producers of wheat were permitted to retain for consumption by members of their own households were considerably raised.

Similarly, the reduction of the proportion of barley flour in the standard rye flour in Germany also reflected relative shortage of barley as compared with rye during 1943-44. The regulation requiring a 20 per cent admixture, effective during 1942-43, was reduced to 15 per cent in September 1943 and to 10 per cent effective November 1. The reduction in the admixture of potatoes in the bread flour from 4 per cent in 1942-43 to 2 per cent after September 1943 may be explained in a similar way, since the shortage of potatoes during 1943-44 was acute in Germany (p. 79). A similar reduction in the proportion of barley in the bread flour probably took place also in Bohemia-Moravia, since the standard bread flour of the Protectorate was to consist of 90 per cent rye flour (of 94 per cent extraction) and 10 per cent wheat flour from August 1, 1944, with the wheat flour replaceable by barley

¹⁴ *Südost Echo* (Vienna), Jan. 14, 1944, pp. 13-14.

¹⁵ See Helen C. Farnsworth, "Wheat in the Fourth War Year: Major Developments, 1942-43," *Wheat Studies*, November 1943, XX, 71-72.

flour if available. But in Slovakia admixture of barley flour in the bread flour, though not obligatory, could be as high as 30 per cent, while admixture of potatoes was prohibited from April 1, 1944 (apparently reflecting the potato shortage).

Decreases in the percentage admixture of bread-grain substitutes in bread flour apparently took place also in most of the western occupied countries. It was reported that in Belgium the proportion of barley in bread flour was reduced from 10 to 5 per cent beginning with December, 1943, while the proportion of wheat was increased from 36 to 38 per cent and that of rye from 54 to 57 per cent.¹⁶ No barley flour was admixed in bread flour in the Netherlands, but potatoes composed 9 per cent and peas 2 per cent of the total, while rye accounted for 50 per cent, and the remaining portion consisted of wheat. Denmark also required no barley admixture in bread flour during the 1943-44 crop year, although during the previous year as much as 25-35 per cent barley had apparently been required. Norway reduced the proportion of barley in bread flour from 25 to 15 per cent in 1943-44.

As mentioned earlier, the rates of flour extraction were seldom lowered, and when they were the quality of the bread was not always the primary consideration. In Hungary, at least, reductions of the extraction rates for wheat from 90 to 85 per cent and for rye from 85 to 80 per cent probably resulted from extreme shortage of feed concentrates in this country in 1943-44, a shortage caused by a poor corn crop that was not compensated for by larger supplies of other fodder. Similar temporary reductions in the Hungarian rates of flour extraction in some previous war years had been definitely motivated by the necessity of increasing the supply of bran for livestock.

A feed shortage was presumably of secondary consideration in Rumania, where in the beginning of the 1943-44 crop year the extraction rate for wheat flour was reduced from a very high level, perhaps 100 per cent, to 80 per cent. There, not one standard wheat flour but two grades of wheat flour were established—popular flour and white flour. Restoration of the production of white wheat flour was concomitant with an authorization permitting unlimited sales of such flour (and white bread) at high prices. Apparently this was intended to finance the subsidization of cheap dark bread for low-income groups of the population. Sales of this dark bread were limited by rations (300 grams daily for the normal consumer and 600 grams for heavy workers), not because there was a shortage of bread grain, but because authorities

¹⁶ *Nachrichten für Aussenhandel*, Dec. 31, 1943.

wished to limit financial commitments connected with sales of subsidized bread at low prices.¹⁷ However, Rumania could not maintain free sales of white bread and flour throughout the crop year. She was obliged again to economize bread grain more strictly when the advance of the Soviet Russian army in February–March threatened the Danube countries. From March 1 the flour extraction for wheat of 75 kilograms per hectoliter was raised to 82.5 per cent, of which 22.5 per cent was to be white flour. A higher extraction rate was required for wheat with a higher specific weight, while for rye the rate was fixed at 72 per cent. Later, sometime about the beginning of April, the production of white wheat flour was fully prohibited, and a single standard wheat flour of 87 per cent extraction (including 2 per cent semolina) was ordered, while the existing stocks of white flour that had to be declared were “frozen.” The rationing of bread and flour was restored from April 1, at least in that part of Rumania west of Bucharest, and it was further tightened late in the spring when the advance of the Soviet army threatened Rumania directly.¹⁸

In France the extraction rate for wheat was reduced from 98 per cent to 90 per cent, effective from October 6, 1943. This was planned, from the very beginning, as a temporary measure effective until March 1. A higher rate of 97 per cent was restored from March 15.¹⁹

To our knowledge, no important changes in milling regulations took place in other countries of Continental Europe. The high rate of extraction of 90 per cent or more, for both wheat and rye, was apparently continued in Germany, and consequently in other countries of Central Europe. Italy maintained the same extraction rate for wheat in 1943–44 as she had during the previous year—90 per cent. To judge from reports concerning the quality of Spanish bread, the rate could not have been lower in Spain. In Portugal, where supplies of bread grain were shorter in 1943–44, the government took measures to increase the rate of flour extraction from wheat sometime in the fall,²⁰ but information is not available about the exact percentage. In Croatia the rate of flour extraction for both wheat and rye was as high as 95 per cent. It thus appears that the rate of flour extraction for the two bread grains during

¹⁷ *Neue Zürcher Zeitung*, Dec. 3, 1943.

¹⁸ *Neue Ordnung* (Zagreb), Mar. 26, 1944, p. 15; Apr. 30, 1944, p. 15; and June 4, 1944, p. 14; *Deutsche Allgemeine Zeitung*, May 28, 1944, p. 9; *New York Times*, Apr. 23, 1944, p. 11.

¹⁹ *Kölnische Zeitung*, Mar. 18, 1944, p. 5. At the same time the former regulation was restored requiring bakeries to produce bread from flour in the proportion of 1.34 instead of 1.32 effective for 6 months before.

²⁰ *Nachrichten für Aussenhandel*, Oct. 23, 1943.

1943–44 did not average below 90 per cent in Continental Europe ex-Russia, in spite of a few reported reductions, most of which proved to be only temporary in character.

Information on changes in bread (and flour) rations during the 1943–44 crop year for 20 Continental countries, with comparisons for the previous war years, is given in the table on page 94.

The largest increases in bread rations took place in the Danube countries, as one would expect in view of the increase in wheat supplies there in 1943–44. In Bulgaria the bread ration for normal consumers was more than doubled from July 1, 1943. Late in the fall the bread ration of normal consumers in Hungary was more than 60 per cent larger than it had been at the end of the previous crop year and that of heavy workers about 25 per cent larger. In Rumania bread was no longer rationed late in the autumn, except the cheap, dark, subsidized bread, the rations of which were increased by about two-fifths. Even in Croatia, normally a grain-deficit area, bread rations were raised by about 10–20 per cent, while the situation in Serbia was less clear.

However, early in the spring, the changed military situation on the eastern front made it inadvisable for the Danubian countries to maintain their bread (and flour) rations on these high levels until the end of the crop year. The rationing of bread and flour was restored in Rumania from April 1, although the ration of cheap bread was not reduced. In Hungary, the ration of flour was reduced from April 1, but the bread ration was maintained to the end of the crop year. The high Bulgarian rations of bread and flour were maintained until the end of the crop year, and were only moderately reduced for the next crop year, beginning with July.

Increases in bread rations in Central Europe were also more or less general in 1943–44, reflecting better supplies of bread grain; but they were much more modest in size. In Germany the bread rations effective from September 20, 1943, were only about 5 per cent above those in July for the normal consumer and only 2 per cent for the very heavy worker, but 9–4 per cent above the April 1943 level. Although German bread rations had been raised the preceding May in connection with the government's new policy of expanding the consumption of plant foods to compensate for reduced consumption of animal products, these changes also reflected the early outlook for better bread-grain crops. The total increase in the bread ration that took place on September 20 was in the form of wheat bread (or flour). The proportion of wheat in the German bread ration during 1943–44 averaged about 40 per cent

BREAD AND FLOUR RATIONS FOR URBAN ADULTS IN CONTINENTAL EUROPE, AT SPECIFIED PERIODS*

(Ounces per capita per week in terms of bread)

Country	Dec. 1940	July 1941	Dec. 1941	July 1942	Dec. 1942	Apr. 1943	July 1943	Late fall 1943	July 1944
AXIS AND OCCUPIED AREAS									
Germany ^a	79-164	79-164	79-164	71-155	79-164	79-164	82-167	86-171 ^b	86-171 ^b
Italy:									
Bread	Free	Free	49-123	37-111	37-123	37-111	37-111	37-111 ^c	49-142 ^c
Pastes ^d	16	16-22	16-22	16-25	16-25	16-25	16-25	18-23 ^c	26-31 ^c
France	87-111	70-88	70-88	68-86	68-86	68-86	68-86	74-86	74-86
Belgium	56-103	56-103	56-103	56-103	56-103	56-103	56-103	74-133 ^e	62-109
Netherlands	84-168 ^f	76-146	67-131	67-131	67-131	67-131	67-131	67-131	67-131
Norway ^g	73-122	64-112	64-112	64-120	64-120	64-120	64-120	64-120	64-120
Denmark ^h	71-97	80-130	80-130	77-129	82-131	82-131	82-131	82-131	82-131
Finland	81-190	65-138	65-138	65-146	81-162	81-162	65-146	80-160	80-160
Bohemia-Moravia	79-164 ^a	71-155 ^a	79-164 ^a	79-164 ^a	82-167 ^a	86-171 ^{a,b}	86-171 ^{a,b}
Slovakia	Free	76-111	76-111	44-77	54-106	54-106	54-106	59-106	59-106
Greece (Athens)	Free ^j	25, 40 ^k	25, 40 ^k	49 ^k	47-78	47-78	47-78	47-78	47-78
Hungary	Free	Free	84-170	46-145	57-143	57-143	71-157	92-178	84-171
Croatia	Free	Free	Free	41-78	41-78	41-78	41-78	49-86	49-86
Serbia (Belgrade)	Free	...	63- ?	63- ?	65- ?	71- ?	71- ?	71- ?	71- ?
Rumania (Bucharest) ..	Free	Free	Free	35-70 ^m	62-123 ^m	53-106 ^m	53-106 ^m	Free ⁿ	74-148 ⁿ
Bulgaria	Free	Free	105-204	79-153	79-153	67-141	67-141	136-198	124-178 ^o
NEUTRALS									
Portugal	Free	Free	Free	Free	Free	Free	Free	Free	73 ^p
Spain (Madrid)	37	20-43	25-37	20-37	37-62	37-62	37-62	37-62 ^q	37-62 ^q
Switzerland:									
Bread	Free	Free	Free	Free	56-105	56-105	56-105	56-105	57-106
Flour ^d	14	6	6	5	5	7	7	7	12
Sweden	65- ?	57- ? ^r	57- ? ^r	53- ? ^r	53- ? ^r	53- ? ^r	53- ? ^r	53-100 ^s	57-103

* Except as otherwise noted, these figures represent approximate *total* rations for bread, baked goods, flour, groats, and pastes (assuming 1 ounce of flour equivalent to 1.3 ounces of bread). Irregular, supplementary distributions of flour or pastes disregarded. Ranges indicate the different rations allowed to "normal" consumers (low) and "very heavy workers" (high), except: (1) for Madrid, the lower limit represents the ration allowed the highest-income group, the upper limit the ration allowed the lowest-income group; (2) for Italy, the ration for pastes, etc., is different in different sections.

^a In addition, about one ounce per week of alimentary paste allowed.

^b Additional amounts granted in some cases in place of potatoes; see p. 95.

^c German-occupied area.

^d Flour, pastes, and maize flour, without conversion to bread equivalents; for Switzerland sometimes includes millet.

^e From Dec. 23, 1943; Aug. 26-Dec. 23, 1943, ration was 62-109.

^f Wheat-products ration; rye-products ration higher.

^g Includes legumes, rice, potato flour, etc.

^h Mostly nonwheat; see Helen C. Farnsworth in *Wheat Studies*, November 1943, XX, 73.

ⁱ Conflicting evidence makes it impossible to determine even the approximate level of the ration.

^j Pastes rationed at 2.5 ounces per week.

^k Legal rations frequently changed and often unobtainable. Figures indicate rations most commonly reported.

^l Supplementary rations are available, but we have no information on the amount.

^m Additional amounts of maize and meal and mixed maize bread allowed.

ⁿ Only cheap dark bread rationed during fall and winter (see p. 93).

^o For new crop year.

^p For dark bread; only 46 ounces permitted if first-class bread is obtained.

^q Heavy workers entitled to 86 ounces, at least since late 1943.

^r Includes varying amounts of barley, oats, maize, and potato products; varying percentages of wheat products permitted.

^s Upper figure is mean of range for all classes of heavy workers.

of the total, but it varied among the three zones into which Greater Germany is divided.²¹

These increases in the German bread rations should not be regarded, however, as a net increase in the food ration over the preceding year, since the meat ration was reduced from the 350-950 grams allowed the year before to 250-850 grams, and the potato ration was cut from 4 kilograms weekly to 2½-3½ kilograms, varying from region to region according to local habits. Later in the winter and in the spring of 1944, the distribution of potatoes to those consumers who had not stored sufficient potatoes in the autumn was at even lower rates, but these deficiencies were compensated for by additional allowances of rye products or other cereals (in the proportion of 1 part of cereals for 4 parts of potatoes). This resulted in an increased requirement for cereals, mainly rye. It is true that the bread ration effective in Germany through the 1943-44 crop year was practically the same as that established at the beginning of the war in 1939, but this fact should be interpreted in connection with the shorter rations of some other foods, mainly of animal origin.

In Bohemia-Moravia changes in bread rations were the same as in Germany. In Slovakia, however, the bread ration could not be raised, though somewhat larger quantities of flour were distributed among normal consumers in 1943-44 than in the preceding year.²² This increased the small total ration of the normal consumer in Slovakia by about 9 per cent. The press reported that bread rations in Poland were raised considerably in March 1944, but no information is available concerning the actual size of this increase;²³ it should be explained by political reasons rather than by changes in the grain-supply position.

In the western occupied countries, bread rations were substantially raised in France and Belgium, particularly in the latter. But in France the bread ration was raised (by about 9 per cent) only for normal consumers, while that of heavy workers remained unchanged. In Belgium a second and larger increase in the ration took place at the end of December, but it could not be maintained beyond April. Consequently, the average increase in the bread ration for the Belgian normal consumer throughout the year could not have been much larger than 15 per cent, and it was probably less than this, since local shortages caused by the disorganization of transport prevented the fulfillment of ration-

²¹ *Deutsche Allgemeine Zeitung*, Sept. 29, 1943, p. 4.

²² See League of Nations, Economic, Financial and Transit Dept., *Food Rationing and Supply, 1943/44, 1944*. II. A. 3 (Geneva, 1944), Table I, pp. 10-18.

²³ *New York Times*, Mar. 24, 1944, p. 3.

ing obligations in some areas during June–July. A similar situation was characteristic also of France.

Apparently no significant changes in the size of bread rations took place in other western occupied countries during 1943–44. In Norway the bread ration for youths of 12–20 years, and perhaps the rations for some categories of heavy workers, were somewhat raised, at least temporarily during the winter months. In Denmark the quality of bread was improved slightly by increasing the proportion of wheat in the total ration with a commensurate reduction of barley. These countries were in a position to maintain their bread rations until the end of the crop year on levels at least as high as those of the preceding year.

In northern Italy the general increase in the basic bread (and paste) rations took place only from April 20, 1944, later than in any other country on the Continent. But during the preceding fall and winter, rations had been raised for certain occupational groups and in certain localities, mainly in the industrial cities and in the northeastern corner of Italy. Because the duration of the increased basic ration in northern Italy was so short, the total increase of bread consumption during the crop year for the part of the population receiving rations could not have exceeded 5–10 per cent.

In Greece bread rations were maintained by the neutral relief commission on the same low level as during 1942–43, but the territory and the social groups to whom assistance was given were extended. This undoubtedly resulted in a somewhat higher average level of bread consumption in the country. In Finland, a shortage of supplies before the new crop was harvested had resulted in a temporary reduction of rations at the end of the 1942–43 crop year. In 1943–44 these were restored to a level almost equal to that in effect prior to the reduction.

The bread supplies of the neutral countries were shorter in 1943–44 than in the preceding crop year and did not permit increases in bread rations. On the contrary, the situation in Portugal worsened to such a degree that this country was obliged to introduce rationing of bread from April last. She was in a position, however, to establish a somewhat better ration than that existing in Spain for Madrid. The two other neutral countries, Sweden and Switzerland, succeeded in raising their bread rations slightly in the second half of the crop year.

From these numerous changes in bread rations, it is difficult to conclude how much the bread consumption in Continental Europe increased during 1943–44 over that of the preceding year. It must be taken into consideration that the bread rations in the Danube countries, where

rations were raised the most, applied only to that smaller portion of the population living in cities. The bread consumption of the rural population in all the countries of Continental Europe probably did not change much. We know from the previous discussion (p. 80) that the total supplies of domestic bread grain (crops plus initial stocks) in Continental Europe ex-Russia were about 8 per cent larger in 1943–44 than in 1942–43. If in both years we subtract seed use, the increase in net supplies would be larger. It probably exceeded 10 per cent, since the seed use in 1943–44 may be appraised at a somewhat lower figure than that in 1942–43, when an unprecedentedly large area of winter crops had to be resown. Receipts of bread grain from outside of the area also were appraised at a level about half a million tons larger than in the previous year (p. 89).

On the other hand, not all the supplies available during 1943–44 were consumed during that crop year. The Germans could not move all surpluses of bread grain from the good Danubian crop of 1943, and consequently the year-end stocks in that area must have been substantially larger at the end of the 1943–44 crop year than they had been the year before. However, since German takings of bread grain from the Danube area were substantially larger in 1943–44 than in the previous year, German stocks should also have increased. It thus appears probable that the 1944 bread-grain carryover of Continental Europe ex-Russia was somewhat larger than the relatively small one of 1943 (p. 80).

Taking all this into consideration, we appraise the 1943–44 bread-grain utilization in Continental Europe at a level some 7–8 per cent higher than in the previous year. The utilization of wheat increased perhaps by as much as 9–10 per cent, that of rye not more than 5 per cent. With such an increase in the bread-grain disappearance, the year-end stocks in Continental Europe could have been some 1.5 million tons larger than at the end of 1942–43, although still below the old-crop stocks of August 1942.

On the basis of these assumptions, we believe that the wheat utilization in Continental Europe during 1943–44 was about as high as in 1940–41, but that it was still nearly 14 per cent below the level of 1938–39, and about 12 per cent below the average utilization for the prewar period 1934–39. This appears from the following tabulation, which summarizes our approximations of wheat supplies and disappearance in 1943–44 in Continental Europe in million bushels, with comparisons for previous years (see Table 22).

August- July	Initial stocks	Crops	Net imports	Total supplies	Utiliza- tion
1934-39 av.	291	1,529	117	1,937	1,652
1938-39	195	1,778	96	2,069	1,694
1939-40	375	1,621	118	2,114	1,694
1940-41	420	1,225	62	1,707	1,457
1941-42	250	1,345	40	1,635	1,425
1942-43	210	1,240	47	1,497	1,337
1943-44	160	1,425	65	1,650	1,455

The utilization data, however, should not be interpreted to mean that human consumption of wheat and of bread grain generally was smaller in 1943-44 than in prewar years. It must not be forgotten that the feeding of millable bread grain to animals has been generally prohibited, and that various regulations have reduced to a minimum the milling residuals, normally fed to animals. Hence, the share of human consumption in the total disappearance of bread grain has greatly increased during the war. The change in the utilization of bread grain from 1942-43 to 1943-44 may be regarded, to a certain extent, as indicative of the actual changes that took place in the human consumption of bread grain, since the percentage fed to animals differed little in these two crop years. But a similar comparison for 1943-44 with prewar years cannot be regarded as valid.

In order to compare the present and the prewar human consumption of bread grain in Continental Europe, we have to appraise for the periods under comparison: (a) the quantity of bread grain fed wholly to animals, and (b) the proportion of flour used for human consumption to the total quantity of bread grain milled, or the rate of flour extraction. Both appraisals, and particularly the first one, must be based on rough approximations. We assume in our comparison that during 1934-39 an average of about 3 million tons of millable bread grain was fed to animals annually, while during 1943-44 very little such grain was fed. Of course, tail wheat and rye (that not fitted for milling purposes) was fed to animals in both periods,²⁴ but its proportion depended on the quality of the crops, and this factor should not differ greatly between the war and prewar periods.

²⁴ Our assumption does not contradict recent estimates of the feed use of wheat and rye by J. H. Richter in an article, "Continental Europe's Wartime Food Balance," *Foreign Agriculture* (U.S. Dept. Agr., Office of Foreign Agr. Relations), April 1943, VII, 94. He estimated the prewar feed use of wheat and rye in Continental Europe excluding the Soviet Union (around 1936) at 6 million metric tons, and the wartime consumption (1941-42) at 3 million metric tons. It may be assumed that the estimated wartime feed use, equal to about 5 per cent of the total crop, consisted mainly of nonmillable grain, and that a comparable quantity of such grain was fed to animals also in the prewar period, in addition to about 3 million tons of millable grain.

In regard to the rate of flour extraction from bread grain, we conclude that in 1943-44 it could hardly have been much below 90 per cent (p. 93), while experts usually estimate that the average prewar rate in Continental Europe, somewhat higher than in this country, was about 75 per cent for the two bread grains together.²⁵ This means that the same quantity of bread grain produced 20 per cent more bread flour in 1943-44 than it did before the war. It is possible that the official rates of flour extraction could not be enforced effectively in the small country mills, so numerous in eastern and southeastern Europe and in some other countries such as France; and that, consequently, the country population was using a finer flour and was feeding more bran to animals than the respective governments ordered. But this could not bring the rate of flour extraction as low as 85 per cent, and consequently the average rate in 1943-44 must have been somewhere between 85 and 90 per cent.

Using these assumptions and the tabulated data on page 81, and considering also changes in the net imports, we estimate that the human use of bread-grain flour in Continental Europe was perhaps 5-10 per cent larger in 1943-44 than on the average in 1934-39, and that the carryover of the two bread grains at the end of July 1944 was perhaps still some 1.5-2.0 million tons larger than on the same date of the preceding year.²⁶ The total consumption of flour undoubtedly increased even more than indicated above, since the supplementing admixtures in flour of various substitutes for bread grain were probably not lower than 5-10 per cent, even after the reductions in 1943-44. Hence, the total human consumption of flour in 1943-44 might have been 10-20 per cent above the prewar level. If the proportion of substitutes in the bread flour was higher, these percentages would also be larger. But,

²⁵ J. H. Shollenberger, *Wheat Requirements in Europe* (U.S. Dept. Agr. Technical Bulletin 535, September 1936), p. 11, says: "European mills, except in countries where the extraction percentage is definitely limited by governmental decree, mill to a higher flour extraction percentage than do United States mills. In some European countries flour extraction runs as high as 80 percent." On the basis of this, the average rate of 75 per cent for wheat in the prewar period appears an appropriate one. The rate of extraction for fine rye flour is usually lower in Europe than that for wheat, but the increased popularity after World War I of whole rye flour (usually of 94 per cent extraction) and the wide use of dark rye bread in central and northern Europe, prepared from flour with the rate of extraction usually exceeding 80 per cent, suggest that the average rate of flour extraction from rye in prewar Europe was also not far from 75 per cent. For characteristics of European rye flours, see A. E. Taylor, "Rye in Its Relations to Wheat," *Wheat Studies*, March 1928, IV, 202-05.

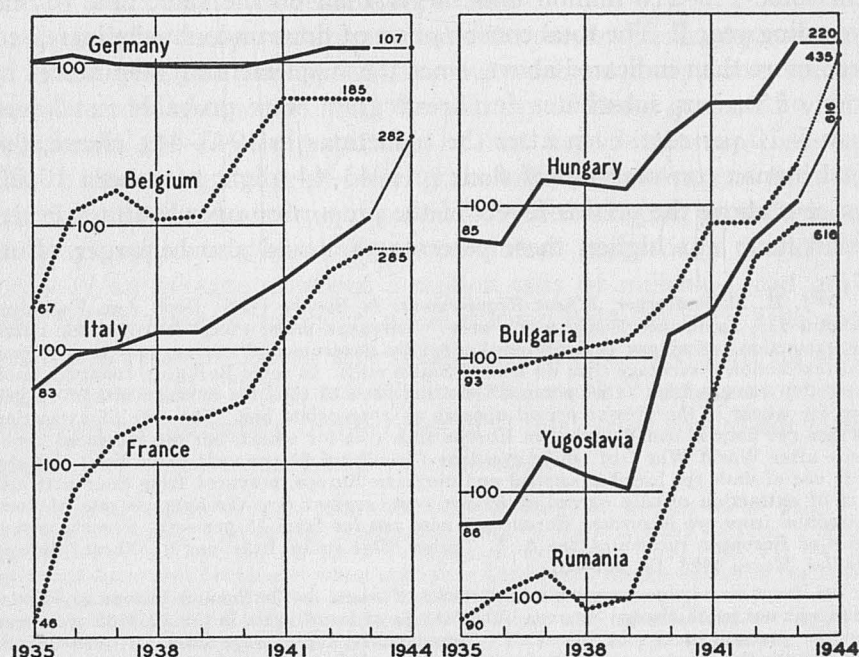
²⁶ If we may judge from estimated stocks of wheat in Continental Europe ex-Russia, there was not much change between initial stocks of bread grain in the 1934-35 crop year and the year-end stocks in July 1939. Consequently, the average crop for 1934-38, together with the average net imports, may be regarded as an appropriate measure of the average utilization of bread grain during 1934-38.

in general, the whole increase in the human use of flour reflected increased consumption of rye flour and bread-grain substitutes. Human consumption of wheat flour in 1943-44 was about on the 1934-39 level.

This increase in the consumption of flour and consequently of bread should not be regarded as an indication of a satisfactory food situation. On the contrary, a substantial part of the increase was caused by the extreme shortage of vegetable oils, and by a scarcity of other important foods, mainly of animal origin. Only by eating bread was it possible for Continental Europe to prevent hunger or at least the serious undernourishment resulting from a shortage of other palatable foods. The increased consumption of bread, prepared from flour of high extraction, provided the vegetable proteins and carbohydrates that partially compensated for small intakes of animal proteins and fats. Of course, the degree of such shortages varied from one country to another and was much greater in most of the occupied countries than in Germany.

The development of wheat prices in Continental countries in 1943-44 shows that larger supplies of wheat and of bread grain generally

CHART 22.—WHEAT-PRICE INDEXES FOR SELECTED EUROPEAN COUNTRIES, ANNUALLY FROM 1935*
(Average 1935-39 = 100)



* Data for recent years based on Table 29.

did not stop a further advance in prices. The continued upward trend reflected increased requirements for bread grains as well as the influence of monetary inflation. The latter factor was perhaps of greater importance than the former during 1943-44, since wheat prices were raised most in the Danubian grain-surplus countries, which harvested much larger crops in 1943 than in the previous year. Chart 22 shows the upward movements of wheat prices in various Continental countries since 1935 in terms of price indexes. It shows that Bulgaria and Hungary raised their fixed prices for 1943 wheat very sharply, after unsuccessful attempts to stabilize prices in the preceding year. In Rumania and Yugoslavia (Serbia), the prices for 1943 wheat were increased less markedly, but these countries had raised their prices much more during 1939-42. In spite of the larger crops, the governments in the Danube countries were forced to raise the fixed prices for 1943 wheat, because other prices were rising rapidly and producers resisted requirements calling for delivery of grains at former official prices. A similar situation existed also in France and in Italy, where prices for wheat harvested in 1943 were considerably raised, although the crops in both countries were substantially increased (see Chart 22 and Table 29). But the German government did not find it necessary to raise the basic prices paid to wheat producers in spite of a slight tendency for the general level of prices to rise. Bread-grain crops in Germany were better, and this probably compensated for rising costs.