

Hankow railway north of Hankow, in the hope of enveloping the Chinese in the Tungpeh Mountain region.

The invaders initiated the move on May 1. The column advancing northward along the Han River was given a serious rebuff by the late General Chang Tze-Chung's troops. Only after four days' fighting in which both sides suffered heavy losses did the defenders step aside to the east where they took up positions in the Tahung Mountain region. The Japanese reached Tsaoyang in northern Hupeh, near the Honan border, on May 7, and Sinyeh, northwest of Tsaoyang on May 11, and Tangho, northeast of Tsaoyang, on May 12.

After days of bitter fighting with General Liu Ju-ming's troops, the Japanese column from Sinyang reached the city of Tungpeh, about 50 kilometers west of Sinyang, on May 12. Thus the two enemy columns achieved a horseshoe encirclement around the Chinese positions. North of Tungpeh Mountain, General Tang En-po's troops made repeated ambush attacks between May 7 and 11, holding the enemy in check in the mountain region.

Meanwhile, as a counter-move, the Chinese rushed reinforcements to Nanyang, north of the two enemy-held points, Sinyeh and Tangho. While the Chinese pressed southward from Nanyang, Chinese forces along the Han River and in the Tahung Mountain region assailed the enemy flank to block the line of retreat. On May 14, both Sinyeh and Tangho were wrested from enemy hands. Tsaoyang was recaptured four days later, when the enemy, faced with the danger of having his rear cut, retreated in confusion. The troops under Generals Tang En-po and Liu Ju-ming counter-attacked from Tungpeh Mountain and from points northwest of Sinyang, recovering the lost ground within a short time. The enemy killed were estimated at more than 13,000 men.

CHANGSHA VICTORY I

In an effort to break the stalemate in China, the enemy in early September, 1939, made General Toshizo Nishio commander-in-chief of the "Japanese Expeditionary Forces to China" and Lieutenant-General Seishiro Itagaki his chief of staff, while large scale plans were made to capture Changsha, the provincial capital of Hunan.

For the campaign, the main strength of the 101st and 106th Divisions was secretly drawn to the western bank of the

Kan River in north Kiangsi, while the enemy forces in southern Hupeh consisting of the 6th, 33rd Divisions and a part of the 3rd and 13th Divisions, numbering 100,000 men, moved southward to points in northern Hunan. Enemy naval ships were ordered from the Yangtze to Yochow in northern Hunan. It became obvious that the enemy from northern Kiangsi, southern Hupeh and northern Hunan hoped to converge on Changsha. To counteract this, the Chinese decided to check the enemy column from northern Kiangsi and to destroy the invaders from the north as soon as they penetrated deep into the Chinese defenses.

The Japanese launched their campaign on September 17, when the forces in northern Kiangsi struck westward from Fengsin, west of Nanchang, toward Tungku with Liuyang, over 80 kilometers due east of Changsha, as their apparent objective. When the forces stretched out westward for some distance, the Chinese attacked their flank from north and south, compelling them to retrace their steps.

Fighting in north Hunan was of a more severe nature. Despite overwhelming odds, the Chinese held their first line of defense along the Sinchiang River, which runs from east to west, emptying into the Tungting Lake, from September 19 to 23. The enemy employed large quantities of gas in his attacks.

Receiving strong air and naval support, the Japanese surged forward from three directions. The left column, consisting of the 33rd Division, marched southward from Tungcheng in southern Hupeh. Intercepted south of Maishih, the invaders made a detour further eastward and eventually reached Taoshukiang and then pushed southward toward Changshuchieh which is east of Pingkiang and linked with the latter city by highway.

The central column, consisting of the 6th and 13th Divisions, crossed the Sinchiang River under the cover of heavy artillery fire and continued their advance toward the Chinese line along the Milo River further south. The right wing, composed of a regiment of the 3rd Division, a naval landing party, some 30 naval craft and more than 100 armed launches, endeavored to land at Luchiosih and Yingtien to attack the flank and rear of the defenders thereby supporting the main forces. In view of the stiff resistance, the enemy had

to send a large air force to support the landing operations.

Fighting was most severe in all sectors after September 23. The Chinese retired step by step, but at the same time in preparation for a counter-attack heavy forces were concentrated on both wings. The enemy rushed toward Changsha without hesitation, and by September 29, their vanguards were virtually within sight of their objective. On October 2, the Chinese counter-attacked. The enemy retreated in all directions. The Chinese people also helped the attacking units by killing Japanese stragglers. By October 8, the Chinese had regained all their original positions. The total Japanese casualties in the campaign were estimated at 40,000 men.

BATTLE OF KUNLUNKWAN

Following their occupation of Nanning on November 22, 1939, the Japanese concentrated two full divisions and at the beginning of December they loosed powerful thrusts in two directions: towards Wuming, directly to the north of Nanning, and towards Pinyang, to the northeast.

The highwater mark of the Japanese advance was reached during the first week of December, when the Japanese occupied the town of Takaofengyi on the road to Wuming, and the strategic pass of Kunlunkwan on the road to Pinyang. On December 2, the Japanese took the town of Hsiaotung in the province of Kwangtung, key to communications with their rear.

The Chinese at the same time were concentrating their forces in South China to repel the Japanese threat to the southwest communications system. Reinforcements were rushed into the threatened area. The southwestern command also threw into action part of China's small but efficient mechanized forces, including some tanks and heavy guns, while planes were also employed.

The Chinese attack on the Nanning front began during the second week of December with forces operating from Wuming and Pinyang. The Chinese first stormed Kunlunkwan on December 16, taking the Pass and Kiutang, a point further south, two days later. On December 19, they recovered Takaofengyi, and subsequently Chitang, Liutang and Wutang, points further south of Kiutang. On December 20, the enemy, strongly reinforced, fought back, capturing Takaofengyi, Kunlunkwan and Kiutang once more.

The Chinese also brought in reinforcements and recovered Kunlunkwan for the second time on December 31. On January 4, 1940, they advanced to Kiutang.

In the severe encounters, the 12th Brigade of the enemy's 5th Division was practically wiped out. When the Chinese pushed down to Patang, south of Kiutang on the Pinyang-Nanning highway, the enemy's 5th Division, having incurred unusually heavy losses at the hands of the Chinese, retreated piecemeal. It was estimated that two-thirds of the Division were destroyed, including one brigade commander and one regiment commander killed. Booty seized by the Chinese included 15 field guns, over 130 heavy and light machine guns, about 2,000 rifles, and large quantities of other war supplies. Close to the battlefields were buried a huge number of enemy dead beneath which considerable war materials and documents were found.

The Kunlunkwan Battle gave the Chinese greater confidence in their striking power. For the first time, Chinese mechanized units were employed in assault tactics, and the results showed that given heavy equipment, the Chinese could drive the enemy out of strongly fortified points. The Kunlunkwan or Kunlun Pass lies hidden in a series of rugged slopes and surrounding heights. For its defense, the Japanese had erected a chain of interlocking fire. The heights were literally infested with machine-gun nests, while at vantage points, artillery emplacements were built. The elaborate defenses made approach to the Pass exceedingly difficult, but with the support of heavy guns and tanks the Chinese were able to wrest the mountain pass from enemy hands.

SOUTHERN HONAN BATTLE

When January of 1941 ended, a major campaign was raging inconclusively in southern Honan. The Japanese who took the offensive were on the upper hand. In one week of rapid marching their three columns had covered roughly 200 kilometers of ground. On the first two days of February, however, the Chinese ferociously hit back. In a week's time they recovered all points north of Sinyang.

The Japanese made fairly extensive preparations for the campaign. Their objective was to capture the section of the Peiping-Hankow railway between Sinyang and Chengchow, the junction

of the north-south Peiping-Hankow railway and the east-west Lunghai railway.

In mid-January, Japanese troops on the Ichang-Tangyang-Kingmen line launched a sham attack on Yuanan, hoping to mislead and harry the Chinese troops west of the Han River. About the same time, the Japanese had increased their troops around Sinyang.

Also attempting to mislead the Chinese, Japanese troops west of the Han River again became active on January 23, while southeast of Sinyang a mild push was launched to harass the Chinese there. This was followed soon afterwards by the outbreak of a major battle in southern Honan.

Japanese troops which took part in this costly campaign were distributed as follows: The left wing comprised the entire Third Division, the 8th Regiment of the Fourth Division and a tank detachment. The center force was composed of the 17th Division (minus the 53rd Regiment), the 67th Regiment of the 15th Division, and a tank detachment. Parts of the 234th, 235th and 236th Regiments of the 40th Division, and a cavalry regiment made up the right wing.

The Japanese started moving on January 24. After having broken through the first Chinese line of defense north of Changtaikwan on January 25, the Japanese left wing west of the railway moved further away to encircle Chinese units there. After several days of bitter fighting between Maotsi and Kaoyi, this Japanese force, having learned of the large concentration of Chinese troops southwest of Wuyang, pushed further northward. On January 30, after a day-long engagement on the Hsiaossutien-Shangtien line, they reached the vicinity of Paoanyen and Wuyang.

Meanwhile, the Japanese center force, also setting out from their forward base north of Sinyang on January 24, broke through the first Chinese line at Mingkiang on the railway the following day. On January 26, it came into contact with Chinese troops at Kioshan, 35 kilometers north of Mingkiang. On January 27, a part of the Japanese force branched off westward from Kioshan to attack Chukow. Its main force, however, pushed northward against Chinese positions at Chumatien, 20 kilometers north of Kioshan.

From Chumatien, another Japanese detachment veered eastward on

January 28, to attack Junan, 40 kilometers to the east. Meanwhile, the bulk of the Japanese center force advanced to Suiping, another 18 kilometers to the north. From Suiping this unit crossed the Ju River. One detachment went to conquer Shangtsai a short distance to the northeast, but the main body made for Siping south of the Hung River, 26 kilometers north of Siping. Blocked by strong Chinese units north of Siping, the center force shifted westward and took Wucheng, midway to Wuyang, on January 30. Under heavy pressure, this enemy force was compelled to retreat southward on February 2.

The right wing, moving east of the railway, first subdued Chengyang, northeast of Mingkiang. Its bulk poured into Junan on January 28. Later, together with a detachment from Chumatien, it entered Shangtsai on January 29. Pushing northward, this combined unit received further support from Suiping and then crossed the Hung River to assault Hsiangcheng. A motorized unit of 3,000 men was sent to attack the Chinese at Chowchiakow and Sihwa along the Tasha River. That was the farthest the right wing went. On the evening of February 2, it was also forced to fall back on Shangtsai and flee southward.

After February 1, the Japanese center column and left wing joined forces in the Wuyang-Paoanyen area. The following day, still hoping to envelop Chinese troops there, this combined force attacked Fancheng, 34 kilometers west of Paoanyen. Suffering heavy losses, part of them retreated in a southerly direction toward Tangho, while about 5,000 men of the Third Division, in their push toward Nanyang, clashed with Chinese troops at Chaohochen. On the evening of February 4, however, they entered Nanyang, but were dislodged two days afterwards. They had to retreat to the railway by way of Tangho, Miyang and Tungpeh.

Several things are noteworthy in this battle which ended the first week of February with the Chinese re-occupation of all points north of Sinyang—Siping, Suiping, Chumatien, Kioshan on the railway and places on both sides of the railway. First, it was the rapid Japanese advance in the initial phase of the campaign. There was some fierce fighting between Sinyang and Kioshan. Once the Japanese went beyond Kioshan, their mechanized units moved fast on the plain. When they got to the southern

bank of the Tasha River, however, they were halted.

The Chinese adopted tactics of mobility in the campaign. When the three Japanese columns reached the Wuyang-Siping-Shangshui line (Shangshui is 10 kilometers south of Chowchiakow), they thought they had caught the Chinese field forces in their encirclement. As a matter of fact, they found themselves in a vacuum. All the time, Chinese units near Sinyang, Kioshan, Chengyang, and Miyang harassed the enemy lines. The Japanese detour from Fancheng to Nanyang and from Nanyang to Tangho was made with the same objective in mind, namely, to destroy the Chinese field forces. Here again, they plunged into an empty pocket with Chinese troops around but few actually inside it.

The Japanese retreated from Nanyang so hurriedly that they abandoned over 300 motor trucks, on which they depended for mobility in their hit-and-run campaign. With the Chinese hot on their trail, they set fire to these trucks and all unmovable supplies. On the southern Honan plain, the Japanese had a good chance to use their mechanized and motorized units with deadly effect. But once their lines of supplies were severed, and the amount of oil carried was exhausted, all motorized units became so hopelessly immobile that the Japanese had no choice but to destroy them.

BATTLE OF SHANGKAO

Northern Kiangsi witnessed a severe battle in March, 1941, when the Japanese made an abortive attempt to seize Shangkao, 100 crow kilometers southwest of Nanchang. Fighting began on March 15, and before the month was over, the Japanese had sustained 15,000 casualties. Large quantities of arms were abandoned on the battleground and dumped into rivers.

Employing 50,000 men, the Japanese, as usual, set out in three columns. The Japanese right wing, or the northern route, composed of a part of the 33rd Division, moved westward from Anyi, northwest of Nanchang. The central column, consisting of the 34th Division, advanced westward from Nanchang, while the Ikeda mixed brigade pressed westward from the southern bank of the Chin River, south of Nanchang.

The Chinese tactics, as subsequent events showed, was first to clip the two Japanese wings, and then deal with the

Japanese central column. An unexpectedly excellent opportunity was provided the Chinese when the Japanese central column, despite the early reverses suffered by the two wings, continued to thrust westward, thereby exposing itself to attacks from all sides.

The campaign was launched at dawn on March 15, when the Japanese right wing set out from Anyi. It took Fengsin, southwest of Anyi, the following day. At Fengsin, the enemy crossed the Liao River and advanced in a southwesterly direction to as far as Tsunchien, 60 crow kilometers southwest of Anyi. With the arrival of strong reinforcements from Ifeng, the Chinese counter-attacked on March 19, recovering Tsunchien the same day. Without giving the defeated Japanese a chance to re-organize themselves, the Chinese launched a severe attack on Lofang, where the retreating Japanese were collecting. In the battles fought in the vicinity of Lofang between March 21 and 23, the enemy suffered 4,000 killed and wounded. The routed Japanese fell back on Fengsin. Finding the Chinese units closely on their heels, the Japanese abandoned Fengsin to return to their base, Anyi.

When the Japanese right wing moved out of Anyi, the Japanese left wing, or the southern route, stretched southward from the Chin River to occupy Chukiang and then turned to Tucheng, west of Chukiang. After the occupation of the two cities, the column moved further westward, but by the time it reached Taiyang, the Chinese counter-attacked. With a small part left on the south bank of the river, the main body of the mixed brigade crossed to the northern bank from Huipu and Shihtouchai. Those who stayed on the south bank were, however, wiped out by the Chinese.

The central column advanced westward to Tacheng and then southwestward to Kaoan. As it pressed forward to Nanchalo, about ten kilometers northeast of Shangkao, on March 20, when the main body of the mixed brigade had joined hands with it, the defenders closed in from all sides. The troops which had successfully hurled back the northern route turned southward to cut the rear and flank of the attacking enemy. The Chinese encirclement of the enemy was completed in a region northeast of Shangkao.

Finding the situation critical, the enemy's 215th Regiment dashed westward from northwest of Nanchang to rescue the surrounded units.

Fierce fighting lasted from March 22 to 25, when tens of enemy planes continued their bombing attacks to help the enemy troops break through the Chinese cordon. Fighting was so severe that one small height was contested for six or seven times. The Chinese kept on tightening their cordon. The enemy fought northward and westward, but was repeatedly hurled back. Between 700 and 800 troops, however, succeeded in breaking through on the east side of the ring. They fought all the way back to Huipu, between Kaoan and Shangkao, but on arrival they found the place already securely in Chinese hands. Most of them were annihilated.

Meanwhile the enemy's 215th Regiment coming to the rescue of the beleaguered troops succeeded in reaching Tangpu, north of Shangkao, and on March 25, a junction was effected with the main body of the surrounded troops. The same evening, the Chinese had the enemy surrounded for the second time. After a whole night's attack, the Chinese captured Tangpu, the enemy remnants fleeing eastward the night of March 27. When the Chinese entered Nanchao and Kwanchao on March 28, the places were littered with enemy dead.

The Chinese success in northern Kiangsi was considered particularly significant inasmuch as only seven Chinese divisions took part in the fighting.

CHUNGTAO RANGE CAMPAIGN

Popularly known as Japan's "appendix" in Shansi, the Chungtao mountain range was the scene of one of the severest battles ever fought north of the Yellow River when the Japanese on May 7, 1941, launched their fourteenth attempt to dislodge the Chinese from this stronghold. Toward the end of the month, large portions of the Chinese troops had fought their way to the rear of the Japanese lines to the north and northwest of the range. For the seizure of a few of the strategic points in the range and several river crossings south of the range, the enemy had paid a price of 30,000 killed and wounded.

The Japanese troops taking part in the campaign were estimated at 130,000. Heavy Japanese troop movements in early April warned the defenders of what was coming. The garrisons in the principal towns at the fringe of the mountains were reinforced, forming a semi-circle from Maotsintu on the

west and to Menghsien on the east, passing through Changtien, Hsiahsien, Chianghsien, Yicheng, Tsinsui, Yangcheng and Tsiyuan. Within this hoop the range stretches from the northeast to the southwest, due north of the Yellow River.

Zero hour came at 1 p.m. on May 7, when the Japanese began to advance from four points. The Japanese right wing drove eastward from Maotsintu and the left wing westward from Tsiyuan. North and northwest of the range, the Japanese approached southward in two columns from Chianghsien and Tsinsui.

The strongest of the four columns from Chianghsien, supported by bombers, drove to the southeast for Yuanchu on the north bank of the Yellow River. When checkmated half-way by the defenders, the Japanese resorted to poison gas and eventually succeeded in reaching Yuanchu over the Chianghsien-Yuanchu highway late the following day.

With the Chungtao range thus cut into two, the invaders concentrated their efforts on encircling the entire Chinese forces. The column which had captured Yuanchu split into two, one battling its way eastward along the Yuanchu-Tsiyuan highway to meet the left wing, and the other westward to join hands with the right wing. Hard pressed from both sides, the defenders who had successfully held up the two Japanese wings, were compelled to retire northward. A small Chinese force, however, ferried across the river to the south bank.

To surround the Chinese troops east of the Chianghsien-Yuanchu highway, the column, which had set out from Yicheng, made repeated attempts to break through the main Chinese defenses but without avail. West of the highway the Japanese tried to encircle the Chinese by launching concerted attacks from Yuanchu in the east, Hsiahsien in the north, and Changtien and Maotsintu in the west and southwest.

The bulk of the Chinese forces began moving northward after May 12. The troops east of the Chianghsien-Yuanchu highway proceeded to the northwest of Tsinsui, west of Kaoping and north of Yangcheng. Those west of the highway succeeded in reaching the Chiwang Mountains bounded by Hainchiang and Wenhsi, west of the Tongpu railway. Having come to the exterior lines on May 18, 19 and 20, the Chinese fought back. Fighting subsided on May 27.

CHANGSHA VICTORY II

Marshalling 120,000 men for operations with support from both aerial and naval forces, the Japanese, still smarting under their 1939 defeat, told themselves at the outset of the 1941 campaign: "This time we must conquer Changsha." Madly dashing southward, their advance units broke into the city but finally the entire army had to stampede back to Yochow after the Chinese had chopped up all supply lines behind them.

When the Japanese first penetrated the north and northeast sections of the city toward the end of September, they busied themselves installing military telephones and erecting defense works. They gave missionaries who stayed in the city throughout those hectic days the impression that they—the Japanese—meant to stay. Then one night Chinese guns across the Hsiang River suddenly thundered. All Japanese who had gained a foothold inside the city, hurriedly left northward. They did not even have time to inform all units. As a result many were trapped.

Chronologically, Changsha Battle II began with the clash at Tayungshan, or Great Cloud Mountains, southeast of Yochow, on September 8, between the Japanese 6th Division and a small but active Chinese force in the hills.

The curtain for the main show rose at night on September 17, when the enemy crossed the east-west Sinchiang River at four points. With a portion of the defenders engaging the enemy, the main strength drew to the enemy's flank and trailed the advancing invaders in a southerly direction. Without encountering serious resistance, the Japanese made rapid progress and on September 19, reached the east-west Milo River which they crossed at seven different points. On the south bank of the river, the Japanese forces staged several flanking movements in an attempt to encircle the Chinese field forces. The Chinese, however, withdrew to the Laotao and Liuyang river regions for a decisive battle. On September 26, the enemy entered this area where further flanking movements were launched to encircle the city of Changsha. On September 27, several hundred Japanese in plain clothes gained access to the north gate of the city but were soon annihilated. Small squads of Japanese troops, mostly in civilian garb, who penetrated the northeast sections of the city on September 25, and 29, eventually met with a similar disastrous end.

From the Sinchiang River to the outskirts of Changsha, the distance is roughly 100 kilometers. The farther the Japanese pushed, the longer and more vulnerable became their lines of communications. They had least suspected that the Chinese would place huge armies on their flanks and in their rear to sever their lines of supplies. As the battle lengthened, they soon ran short of both ammunition and food. Finally, they had to drop ammunition from airplanes.

The Japanese press-ganged thousands of Chinese peasants to repair roads previously destroyed by the Chinese. However, south of the Milo river, they could do nothing because of the presence of large Chinese armies. Consequently, the Japanese did not succeed in bringing over any sizable amount of heavy arms. This gave the Chinese troops a chance to fight them on equal terms on the Laotao-Liuyang front. The Chinese control of the Hsiang River, the landing of Japanese at numerous points around the Tungting lake notwithstanding, adequately protected the Chinese flank.

The Japanese drive broke the afternoon of September 30. A general retreat soon ensued. With Chinese troops on their heels and others attacking their flanks, the Japanese suffered heavily all the way to the Sinchiang River. By October 8, the Chinese had pushed right to the gates of Yochow, Japanese base in southern Hupeh on the northern section of the Canton-Hankow railway.

CHANGSHA VICTORY III

The Japanese could not have done worse in the third Changsha campaign. Everything happened just as the Chinese defenders had anticipated. As soon as the second major battle of Changsha ended in disaster for the Japanese, Chinese army commanders in defense of North Hunan started preparations for a third. In planning to meet another comeback of the enemy, they drew from a wealth of experience gained during the previous two attacks but they had the foresight to provide for certain different tactics that the invaders might apply in their renewed onslaught.

The Japanese came back toward the latter part of December, 1941, the troops pouring southward from their main base in Yochow in three columns. On the night of December 23, the enemy crossed the first Chinese defense line, Sinchiang River. From then on, the developments of the campaign fell in with almost exact detail with the Chinese

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anticipation, thereby greatly facilitating the maneuvers of the defenders.

The third Japanese offensive against Changsha differed from the second in several details. Perhaps owing to the operations in other parts of the Pacific, the Japanese used fewer planes. The low water of the Tungting Lake rendered it difficult for the enemy to land troops on the left flank of the Chinese defense.

South of the Milo River and close to Changsha, a number of traps were set for the enemy. All the Chinese had to do was to lead or, if necessary, drive the enemy into them. Between Laotao and Liuyang Rivers east of Changsha, the Chinese formed a wide and deep pocket for the Japanese. West of this pocket was the city of Changsha, the objective of the Japanese drive.

The enemy's 6th Division crossed the Sinchiang at eight different points which stretched out from east to west for a distance of more than 10 kilometers. The troops were closely followed by the 4th Division. In the afternoon of December 27, the two enemy divisions crossed the second east-west river, Milo, one after the other. The enemy's 40th Division, which formed the left wing, crossed the Milo the following day.

The Japanese kept on rolling toward their objective. Half way between Milo and Changsha, they met with stiff resistance which necessitated the right column making a detour to the east, and the right and central columns thereby kept closer to each other than they had at the outset.

In the city of Changsha were entrenched Chinese troops. With the exception of some 160 civilians who desired to stay behind to assist the defenders in any manner, the whole city was evacuated. Every shop was barred, and every house was denuded of its valuables. The order the troops got was to defend Changsha to the last. They should not leave the city a single step even if their positions should be rendered untenable. The only other alternative, they were told, was to counter-attack and drive eastward from the city, and this could be done only with a specific order from the high command. In other words, there should be no retreat. One regiment of the enemy's 6th Division came into contact with the defenders the night of December 31. With their back against the Hsiang River, the city defenders greeted the enemy with concentrated fire.

Severe fighting continued for several hours. The attackers began to realize that they had underestimated the Chinese strength. Throughout the night, the Japanese made repeated attempts to break through the Chinese outer defenses, but every time they were hurled back with heavy losses. On the following day, additional Japanese troops arrived, including units of the 4th Division. The combined Japanese forces stormed the southeastern defenses. Having failed to make any advance, they soon shifted their attack to the southern and then eastern part of the city's outer defenses. On January 2, a part of the 40th Division also joined the attack. Meanwhile Changsha's northern outskirts were bombarded.

At one time the Japanese succeeded in breaking through the outer defenses, but before they could consolidate their gains, they were pushed back. Testifying to the severity of the fighting, one height on the southern outskirts, which is named Hung Shan Tou, or Red Hill Top, was attacked eleven times and it changed hands no fewer than four times. The capture of the height by the Japanese would expose the Chinese defenses around the city to grave danger.

The stiff resistance came as a great surprise to the enemy who was compelled to make repeated calls for reinforcements. As the tired, battered but nevertheless proud Japanese troops were being concentrated on the outskirts of Changsha to participate in the siege of the city, the Chinese set a new trap for the Japanese along the Liuyang river region.

On January 4, the Chinese reinforcements began to tighten their ring around Changsha, but what surprised the Japanese more was the heavy guns which began to fire on Japanese troop concentrations, inflicting unusually heavy casualties on the enemy. Several mountain guns, which the enemy with difficulty had brought up all the way from Yochow were silenced. With their line of communications dissected, the Japanese were then relying on air transports for their supplies. It became evident that there was very little chance for the majority of the attackers to return to their base. Finding it difficult to withstand the pounding of Chinese heavy guns, the Japanese collapsed the afternoon of January 4.

At Tungshan, southeast of Changsha, the retreating Japanese attempted to cross the Liuyang River. Not knowing

they had entered the Chinese bag, the Japanese hit several blind alleys, losing heavily in every attempt at crossing. Other columns which retreated eastward and northward likewise found their ways blocked time and again.

Of the four army divisions which came down to lay siege to Changsha, only scattered detachments and remnants, totalling one army division, succeeded in collecting at a point forty kilometers northeast of Changsha. Here again they were surrounded by the Chinese lying in wait for them. The two other army divisions which maintained communication lines and protected the rear and flanks of the advancing Japanese also suffered heavily.

As days went by, the Japanese casualties kept on mounting. The Chinese air force also took part in harassing the retreating Japanese.

BATTLE OF BURMA

When Japan started invading Burma early in 1942, General Sir Archibald Wavell was the Commander-in-Chief of the Allied forces in Burma. The Chinese Expeditionary Force to Burma was assigned positions east of the Rangoon-Mandalay railway, extending to the Burma-Thailand border, a stretch of more than 750 kilometers.

Upon the invaders' attack on Pegu, the Chinese troops moved from the border to Central Burma. By that time the situation on the Irrawaddy front had already become critical. The Chinese vanguard pushed up beyond Toungoo where they began digging themselves in on muddy fields on March 7. By the middle of March, cavalry patrol had reached south of Toungoo. The Chinese and Japanese met at Toungoo on March 19, and for ten days a lone Chinese division fought the Japanese motorized 55th Division and regiments from the 33rd Division. Relay bombing and intensive artillery shelling made the Chinese position untenable, while poison gas used by the enemy suffocated many of the defenders. After having inflicted heavy casualties on the enemy, the Chinese withdrew.

After the fall of Toungoo, the Japanese concentrated their attacks on the British positions west of the railway. Fighting a rear-guard action, the defenders gradually retreated along the Irrawaddy to northwestern Burma. The Chinese subsequently found their right flank exposed. Action was imperative. The

assault on the Japanese besieging the Yenangyaung oilfields, successfully carried out by a Chinese division rushed from Lashio on April 19, saved 7,000 British, Burmese and Indian soldiers and at the same time strengthened the Chinese flank. Thereafter, the Japanese shifted the bulk of their strength to the Chinese left flank besides continuing their pressure against the British.

Using Thailand as their base, the Japanese 12th Division and part of the 18th Division advanced in a three-pronged thrust against the Chinese in the Northern Shan States. One column entered Taunggyi on April 23, but was driven back by the Chinese who moved down along the railway the following day. Another Japanese column took Løilem and a third force executed a flanking movement further to the west. Well paved roads facilitated the Japanese movement of tanks and motorized units northward. After taking Hsipaw between Lashio and Mandalay the invaders entered Lashio on April 29.

Later, a Japanese column along the railway advanced toward Mandalay and Maymyo. The Chinese evacuated Mandalay on May 1. Another Japanese column advanced along the Burma Road and entered Yunnan Province on May 3. Its vanguard crossed the Salween River but it was destroyed on May 5 by the Chinese, who were effectively supported by Chinese bombing squadrons and A.V.G. pursuit planes. A reinforced Japanese column, however, took Tengchung in western Yunnan on May 11.

In Burma, the Japanese occupied Akyab, Bhamo, Myitkyina and other strategic cities.

CHEKIANG-KIANGSI BATTLE

Following Brigadier-General James Doolittle's devastating bombing of Tokyo and other Japanese cities on April 18, 1942, the enemy in China launched a major campaign involving the two provinces of Chekiang and Kiangsi for the seizure of the "bomb-Tokyo" bases. Employing 170,000 troops, supported by a large air force, the Japanese, beginning the middle of May, swept over central and western Chekiang in two weeks, capturing a number of key cities. On May 31, Japanese troops began to move from Nanchang in Kiangsi province. By the first week in July the invading units from Chekiang and Kiangsi had met and gained temporary control of the Chekiang-Kiangsi railway. Gaps were, however, re-opened from time to time

and from place to place. Early in August, Chinese forces counter-attacked and in less than ten days had recovered more than a dozen cities. The re-occupation of the airfields at Chuhsien, Lishui and other Chekiang cities completely nullified the enemy efforts.

The enemy's campaign in Chekiang and Kiangsi marked a departure from usual tactics. Failing to gain much by putting the main strength in columns moving along lines of communication, the Japanese threw in their firing power with "flying units." Without relying on heavy weapons, but adequately armed with machine-guns and other portable weapons, these units stole through difficult regions and then concentrated their attacks on thinly-defended points. Close co-ordination between the land and air forces constituted the main factor of their initial successes.

The use of a large air force by the Japanese was another feature of the Chekiang-Kiangsi Battle. The air force, larger than any ever used in any previous battle in China, operated mainly from Hangchow and Nanchang. Gas was extensively used.

With Fenghua, Shaohing, Siaoshan and Fuyang in Chekiang province as their bases, the Japanese started a four-route offensive on May 15. Two days later they occupied Chuki, the first big city south of Hangchow on the Chekiang-Kiangsi railway. Kihwa fell on May 28 and Lanchi on May 30. By June 1, when the Japanese began to attack Chuhsien, where the largest airfield in the Chekiang-Kiangsi area was located, it was estimated that the enemy had thrown into the field more than 100,000 men.

The enemy set out from Nanchang in Kiangsi on May 31 in two columns, pushing eastward and southeastward. They took Kweiki on June 16 and Iyang on June 29. Japanese forces from Chekiang entered Shangjao on June 15. By July 1, when Hengfeng was lost, the enemy gained control over the entire length of the Chekiang-Kiangsi railway.

Along the Fukien coast, Japanese troops landed on the north bank of the Min River on May 20, but were driven back to their warships on June 11. In southeastern Chekiang, the enemy took Wenchow. It was recovered by the Chinese on July 17 and the enemy again took it the following day with the support of landing parties. The city remained in enemy hands until August

15, when Chinese counter-attacking forces recaptured it.

Lishui, important highway city in southern Chekiang, was lost on June 24. After severe fighting in that region, Chinese advance units re-entered the city on August 28. Before they were driven back northward, the Japanese, having taken Kihwa, made a southward detour attack to join the enemy column from the eastern part of the province. Enemy units from Kiangshan, a city on the Chekiang-Kiangsi railway, rolled further southward, reaching as far as Siensialing Mountain on the Chekiang-Kiangsi-Fukien border.

In Kiangsi, one of the main columns of the enemy forces from Nanchang moved southeastward with Sankiangkow as an advance base, the other column advancing along the railway. The column advancing southward reached Linchwan on June 5, Tsungjen on June 9, Nancheng on June 12 and Ihwang on June 14. Fighting was most ferocious in the Linchwan sector in the early part of July following the recapture of Ihwang and Tsungjen. On July 6, the Japanese raided Fengcheng and Changshuchen from Linchwan in the east and Sankiangkow in the north. Both Fengcheng and Changshuchen are highway cities south of Nanchang on the east shore of the vertical Kan River. They were, however, thrown back by the Chinese on the following day, and the area was free of enemy troops on July 9, when the Chinese intensified their counter-attacks on Linchwan and other eastern Kiangsi cities. Nancheng was recaptured on July 9, while the enemy evacuated Poyang on the east shore of Poyang Lake on July 10. The Japanese also landed on the east and southeast shore of Poyang Lake and via Juihung and Yukan. They drove southeastward and joined a detachment from Yukiang north of the railway.

Concerted action of the Chinese in August resulted in the quick re-occupation of Shangjao on the 19th, Kwangfeng on the 20th, Yushan and Yingtan on the 21st, Yukiang on the 22nd, Linchwan in Kiangsi and Changshan and Kiangshan in Chekiang in addition to two other minor points on the 23rd, and Tungsiang and Sankiangkow on the 24th. In southeastern Chekiang, the Chinese re-took Wenchow on August 15 and Tsingtien on August 21.

Linchwan, key city in eastern Kiangsi, 80 kilometers south of Nanchang, changed

hands several times until August 23 when the enemy was definitely driven northward and the Chinese re-established full control over the city and its surrounding area. From Linchwan, Chinese troops moved northward and took Sankiangkow. They later reached a point only 15 kilometers south of Nanchang.

The Chinese recovery of Changshan and Kiangshan in western Chekiang on August 23, together with the recapture of Linchwan, happened within 24 hours. From Changshan and Kiangshan, Chinese troops advanced in two columns toward Chuhsien and in two days they were within a striking distance of only a few miles from the city. Chinese troops re-occupied the city on August 28.

In three months of continuous fighting, including many close-quarter combats, both sides suffered high casualties. The Japanese paid dearly for all gains, temporary though they were. To give but a few instances: The Japanese suffered 14,000 casualties in the attack on Kihwa and Lanchi, lost 18,000 men at Chuhsien, and 8,000 at Shangjao.

The rout of the Japanese on the 500-kilometer front in Chekiang and Kiangsi was chiefly due to the fact that the Japanese failed to crush the main Chinese strength and were not able to consolidate their long-stretched positions. After the evacuation of Chuhsien early in June, Chinese troops revised their tactics by withdrawing their main forces to both sides of the railway in the face of the enemy advance and attacking the enemy from the rear and flank. Meanwhile, Chinese units remaining behind the enemy lines continued to harass the enemy from the beginning of the hostilities. They were particularly active in Chekiang.

The Chekiang-Kiangsi Battle definitely shattered Japan's wild dream of building a Tokyo-Singapore railway via the Shanghai-Hangchow, Chekiang-Kiangsi and Hunan-Kwangsi railways and lines in Indo-China and Thailand.

THE BATTLE OF WESTERN HUPEH

The Japanese began their westward push in western Hupeh on May 13. Six days later the Chinese Air Force struck at the enemy supply bases and river crossings at Chihkiang and Yangchi, southeast of Chihkiang, on the south bank of the Yangtze in western Hupeh, inflicting heavy casualties on the enemy. Subsequent raids were made by Chinese and American planes in the Tungting Lake and Yangtze

River areas in Central China on May 20, 21, 27, 28, 29, 30, 31 and in early June during which enemy positions, troop concentrations, supply lines and communication centers were subjected to bombing and strafing attacks, causing extensive damage and heavy losses to the enemy.

Marshalling a force of 100,000 men, the enemy, after successful river-crossing operations, struck westward in three columns on the south bank of the Yangtze from Hwajung near the Hunan-Hupeh border, north of the Tungting Lake, Chihkiang, southeast of Ichang, and Itu, northeast of Chihkiang. In the initial stages of the fighting, the enemy land forces were supported by bombing planes in north Hunan, and paratroops were landed behind the Chinese line to press the Chinese back from their positions west of Chihkiang.

Following the fall of Yuyangwan on May 23, about 60 crow kilometers south of Ichang, the Japanese concentrated their attacks on Changyang due south of Ichang. Terming Yuyangwan as the gateway to Chungking, the Japanese greatly publicized their success. Retiring step by step from the low-lying and lake districts for which the enemy was extremely well-equipped, the Chinese engaged the invaders in severe fighting in hilly regions where some of the heights rise 2,000 meters above sea level. Here the enemy found it difficult to use heavy armament.

Strongly supported by Chinese and American planes, the Chinese on May 27 fought ferociously against the enemy in occupation of Yuyangwan, wresting the pivotal base from the enemy two days later. This began a general counterattack on the entire front, the enemy being driven back piecemeal in all directions. Strategic points, including Changyang, Itu and Chihkiang in western Hupeh and Nansien and Ansiang in northern Hunan were recovered by the Chinese. The first week of June saw the Chinese still in hot pursuit of the retreating enemy with the Chinese and American bombers and pursuits relentlessly executing bombing and strafing attacks on the fleeing invaders.

Reviewing the battle at a mass meeting held at Enshih in western Hupeh, General Chen Cheng, a War Zone Commander-in-Chief, placed the Japanese casualties at 30,000. The enemy had employed six divisions for the drive. Though superior in equipment and stronger in number, the enemy collapsed when the Chinese fought back in earnest.

EDUCATION AND RESEARCH

Among the indomitable forces at work in China against Japan's war of aggression are her educational institutions. These have been major targets of enemy bombings, but under such constant attacks they have thrived miraculously, true to China's traditional spirit of endurance and fortitude.

Through this baptism of fire, China's education has climbed to new heights of progress. Institutions of all grades in Free China during the war have registered an upturn. On January 1, 1943, the Ministry of Education reported 133 institutions of higher learning in China, including universities, independent and technical colleges. This showed an increase of 25 over the 108 just before the war. The total enrolment in the 133 colleges and universities was 57,832 against 31,188 in 1937.

HISTORY OF HIGHER EDUCATION

The history of modern higher education in China began in the first year of Emperor Tung Chih of the Manchu Dynasty (1802) when *Tung Wen Kwan* was established in Peking for the training of diplomatic personnel. Later a school on western culture known as *Hsi Hsueh Hsuehtang* (Western Learning School) was opened in Tientsin and another school called Nanyang Institute was established in Shanghai.

In the 28th and 29th years of Emperor Kwang Hsu (1902-3) the first set of regulations governing institutions of higher education was promulgated by the Manchu government. Then such institutions as *Tahsuehtang* (universities), *Kaoteng Hsuehtang* (higher institutions), *Kaoteng Shihyeh Hsuehtang* (higher industrial institutions), *Facheng Hsuehtang* (law institutions) and *Yuchi Shihfan Hsuehtang* (teachers' colleges) came into existence. The curriculum of these institutions emphasized Chinese culture and encouraged studies of western learning. By the first year of Emperor Hsuan Tung (1909), there were in China three universities and 24 higher institutions, with a total enrolment of 4,876.

After the founding of the Chinese Republic, the system of higher education was revised to provide for the establishment of universities, technical colleges and higher normal schools. In universities, there were departments of arts and sciences, law, commerce, agriculture, engineering and medicine.

There were technical colleges of agriculture, industries, commerce, law, medicine, pharmacy, navigation and foreign languages. By 1917, there were in China two national universities—University of Peking and Peiyang University—and eight other public and private universities.

Another reform in the system of higher education was introduced in 1922 when provisions were made for the establishment of colleges specializing on various subjects, and certain courses in colleges and universities were put on a selective basis. Thus all technical colleges and higher normal schools were classified as "colleges and universities." By 1925 there were 34 public colleges and universities and 13 private ones.

A further improvement was effected with the establishment of the National Government in Nanking in 1928. Institutions were classified into three main groups: universities, independent colleges and technical colleges. Universities and independent colleges might establish schools for post-graduate studies. A university consisted of colleges of arts, science, law, commerce, education, agriculture, engineering and medicine. There must be at least three colleges which had to include science and one of the three colleges of agriculture, engineering and medicine. Those having less than three colleges fell under the "independent colleges" category. With the exception of medical colleges requiring a six-year course, the term for graduation of all other colleges was fixed at four years. Technical colleges, including agriculture, engineering and medicine required a two to three-year course. Schools for post-graduate study were required to have at least three departments and to give a two-year course of study.

Universities, independent and technical colleges in China numbered 74 in 1928 and 108 before the outbreak of war in 1937. An abrupt drop to 91 was registered during the latter half of 1937. The trend has since been on the upturn: 97 in 1938, 101 in 1939, 113 in 1940, 129 in 1941, and 133 on January 1, 1943.

The 108 institutions of higher learning in pre-war days included 42 universities (16 national, seven provincial and 19 private), 34 independent colleges (five national, eight provincial and 21 private) and 32 technical colleges (six national, 16 public and provincial, and 10 private).

They were scattered in five main districts: North China, Central China, East China, South China and Northwest China. North China, including Peiping, Tientsin, Hopei, Shansi and Shantung provinces had 30 institutions; Central China, including Szechwan, Hupeh, Honan and Hunan had 17 institutions; East China, embracing the cities of Nanking and Shanghai and Kiangsu, Chekiang, Anhwei and Kiangsi provinces had 45 institutions; South China provinces of Kwangtung, Kwangsi, Fukien and Yunnan had 13 institutions while the three northwestern provinces of Shensi, Kansu and Sinkiang had three institutions. Among cities, Shanghai was China's educational megalopolis with 25 institutions; Peiping came next with 14; Canton, seven; and Nanking, six.

REDISTRIBUTION AND DECENTRALIZATION

Most of the schools prior to the war were located in cities of China's coastal provinces. Such faraway provinces as Chahar, Suiyuan, Chinghai, Sikang, Ningxia, Mongolia and Tibet, not to mention the Four Northeastern Provinces, had remained outskirts unreached by education in its highly-developed form. There was great need for decentralization. Japan's aggression brought about more progress along this line than would have been possible in a generation of peace.

The redistribution of China's educational institutions followed a series of migrations from the coastal board to the interior West, Northwest and Southwest China. The first migration took place in August and September, 1937, when students and teachers took to the road in large numbers from the Peiping-Tientsin area. Hardly were the first guns fired at Lukouchiao than the Japanese military authorities began an attack on the cultural institutions in these cities. They first struck Peiping. Following the occupation of the city in July, all but a few institutions of higher learning were forced to close down.

The fate of Tsinghua University is typical. Founded in 1912 with the balance of the American Boxer Indemnity Fund remitted to China, the university first served as a preparatory college and sent its graduates to the United States for higher education. In 1927, it was made a national university and soon became one of the best-equipped and staffed in the country. The university was occupied by the Japanese on October

13, 1937. The John Hay Memorial Library, one of the best and largest in China, was turned into a hospital for Japanese wounded soldiers and the Theodore Roosevelt Memorial Gymnasium into a stable for Japanese army horses! National Peking University, National Peiping University, National Normal University and others in Peiping suffered similar treatment.

In Tientsin, the outstanding private-supported Nankai University, founded and headed by the noted educator, Dr. Chang Po-ling, was the first victim, its buildings being deliberately destroyed in August, 1937, by means of artillery, bombs and incendiary.

Tsinghua, National Peking and Nankai all travelled 1,200 crow-kilometers to Changsha in Hunan where they jointly operated a union university. Following the first Japanese bombing of Changsha on April 10, 1938, however, the union university made a further move of 1,000 kilometers to Kunming, Yunnan, where it has since been known as the National Southwest Associated University.

National Peiping and National Normal Universities in Peiping and Peiyang Engineering College in Tientsin moved some 800 kilometers and established another union university at Sian in Shensi. Because of repeated Japanese bombings of that city, they then went on to Nancheng and finally to Hanchung and Chengku, southern Shensi cities by the Han River where they have since operated under the name of the National Northwest Union University (now National Northwest University).

The fall of Shanghai, Soochow, Nanking and Hangchow in November and December 1937, led to the second migration. No less than 14 of the educational institutions in Shanghai were subjected to artillery and air attacks shortly after the outbreak of hostilities there. Four Chinese-owned universities, Tungchi, Fubtan, Tahsia and Kwanghua were practically levelled to the ground. Among the Christian institutions, the University of Shanghai had its buildings occupied by the enemy soldiers and St. John's University was forced to abandon its campus even though it was within the British defense sector. Soochow University in Soochow and Hangchow Christian College in Hangchow were both affected. The International Settlement became a refuge where the University of Shanghai, St. John's, Soochow University and Hangchow Christian College shared rented quarters.

The National Central University in Nanking suffered the worst, being the object of four Japanese air raids in the fall of 1937, resulting in serious damage to the school library, the experimental school, the auditorium, the dental school, the girls' dormitory and the buildings of the College of Arts.

Long before these bombings, the school had started packing. All valuable books in the library and laboratory equipment were put into 550 wooden boxes which were taken to the river bank, ready for shipment upriver. The university, its students and faculty left Nanking early in October and after a 1,800-kilometer trip up the Yangtze River reached Chungking in early November. Construction of 24 new school buildings capable of accommodating more than 1,000 students, at Shapingpa outside Chungking, had been completed within 42 days by 1,700 men working in day and night shifts. In the meantime, its College of Medicine and Dentistry arrived in Chengtu, Szechwan capital, and resumed work on the campus of the West China Union University.

The University of Nanking and Gining College for Women in Nanking started their trek westward early in December. These institutions, together with Cheeloo University from Tsinan, Shantung, also joined West China Union University to become the Associated Universities in Chengtu. Other schools involved in the second migration westward included Fuhtan and Kwanghua from Shanghai, the former to Peipei near Chungking and the latter to Chengtu.

Long before the withdrawal of the Chinese forces from the Wuhan cities, National Wuhan University, one of the most beautifully and sumptuously housed of all Chinese universities, moved from Wuchang to Loshan, near Mount Omei, in Szechwan, as the first institution involved in the third migration. Huachung College in Wuchang made perhaps the longest trek among all mission institutions from its home to its present site not far from the Burma border. It left Wuchang on July 11, 1938, and established itself at Kweilin in Kwangsi, its Library School going

direct to Chungking. Raids soon became too severe in Kweilin, and early in 1939, the first group left for Yunnan. Finally, in the late spring, Huachung re-established itself in a little town near Tali, Yunnan.

The landing of the Japanese forces at Bias Bay on October 12, 1938, precipitated the long and most trying odyssey of the National Sun Yat-sen University, citadel of higher learning in South China since 1924. The trek over nearly 3,000 kilometers, first to Loting in southwestern Kwangtung, then to Lungchow in southern Kwangsi and eventually to Chengkiang in Yunnan was one that would discourage the bravest. The university remained in Chengkiang until the fall of 1940. Preparations for its return to Kwangtung were started as early as July, 1940. Pingshih, close to Kukong (Shaokwan), the provincial government seat since the fall of Canton, was chosen for the university while a few of its colleges were to operate at Nanshiung, close to the Kiangsi border.

Overlapping all three migrations is the odyssey of Ming Hsien (Oberlin-Shansi), an institution founded by Dr. H. H. Kung, Vice-President of the Executive Yuan and Minister of Finance, with a 60-acre and \$1,000,000 campus at Taiku in Shansi province. The epic trek covering over 1,500 kilometers of the most difficult terrain under the constant menace of enemy bombs began in the early days of the war and ended in April, 1939, when the school settled down to the peaceful and tucked-away little city of Chitang, 45 kilometers from Chengtu in Szechwan.

The mass migration of China's institutions of higher education, full of trials and tribulations, involved numerous other institutions which moved at one time or another. To sum up, 24 moved from one place to another within the same province; 26 moved to the provinces of Hunan and Szechwan; eight moved to the provinces of Yunnan, Kweichow and Kwangsi and three moved to the provinces of Shensi and Kansu. These transient institutions, 62 in all, their original and new sites are listed below:

Within the Same Province:

Institutions	Original Site	Present Site
National Hunan University	Changsha, Hunan	Shensi, Hunan
National Amoy University	Amoy, Fukien	Changting, Fukien
National Northwest Union University	Sian, Shensi	Chengku, Shensi
National Szechwan University	Chengtu, Szechwan	Kiating, Szechwan

Within the Same Province:—Contd.

Institutions	Original Site	Present Site
National Sun Yat-sen University	Canton, Kwangtung	Pingshih, Kwangtung
National Chung Cheng Medical College	Nanchang, Kiangsi	Yungsin, Kiangsi
University of Honan	Kaifeng, Honan	Chenping, Honan
Lingnan University	Canton, Kwangtung	Hongkong
Kwangtung Kuomin University	Canton	Kaiping, Kwangtung
Canton University	Canton	Toishan, Kwangtung
Kwangtung (Provincial) Commercial College	Canton	Kukong, Kwangtung
Kwangtung (Provincial) College of Arts and Sciences	Canton	Lienhsien, Kwangtung
Fukien Christian College	Foochow, Fukien	Shaowu, Fukien
Fukien Union College	Foochow	Pucheng
Fukien (Provincial) Medical College	Foochow	Shahsien
South China Women's College of Arts and Sciences	Foochow	Nanping
Chekiang (Provincial) Medical and Pharmaceutical College	Hangchow, Chekiang	Tientai, Chekiang
Kiangsi (Provincial) Medical College	Nanchang, Kiangsi	Kanhsien, Kiangsi
Kwangtung (Provincial) College of Physical Education	Canton, Kwangtung	Lienhsien, Kwangtung
Shensi (Provincial) Medical College	Sian, Shensi	Nanchung, Shensi (later back to Sian)
Honan Hydraulic Engineering College	Kaifeng, Honan	Chenping, Honan
Kiangsi (Provincial) Industrial College	Nanchang, Kiangsi	Yuntu, Kiangsi
Hupei (Provincial) Agricultural College	Wuchang, Hupei	Enshih, Hupei
Chunghua Agricultural and Commercial College	Changsha, Hunan	Taoyuan, Hunan

To Hunan and Szechwan Provinces:

National Central University	Nanking	Chungking
National Wuhan University	Wuchang, Hupei	Kiating, Szechwan
National Tungchi University	Woosung, Shanghai	Nansi, Szechwan
National Chiaotung University	Shanghai	Chiulungpo (near Chungking), Szechwan
National Northeast University	Peiping	Santai, Szechwan
National Fuhtan University	Shanghai	Peipei, Szechwan
University of Nanking	Nanking	Chengtu Szechwan
Kwanghua University	Shanghai	Chengtu, Szechwan
Chunghua University	Wuchang, Hupei	Chungking
Cheeloo University	Tsinan, Shantung	Chengtu, Szechwan
National Shanghai Medical College	Shanghai	Koloshan, Chungking
National Kiangsu Medical College	Shanghai	Peipei
Chaoyang University	Peiping	Pahsien, Szechwan
Ginling College for Women	Nanking	Chengtu, Szechwan
Peiping Minkuo College	Peiping	Ningsian, Hunan
National Dental College	Nanking	Chengtu, Szechwan
National School of Fine Arts	Yuanling, Hunan	Pishan, Szechwan
National School of Pharmacy	Nanking	Koloshan, Chungking
National Commercial College	Chinkiang, Kiangsu	Kancheng, Hunan
National School of Physical Education	Nanking	Peipei, Szechwan
Shantung (Provincial) Medical College	Tsinan, Shantung	Wanhsien, Szechwan
Kiangsu (Provincial) School of Sericulture	Chinkiang, Kiangsu	Loshan, Szechwan
Boone Library School	Wuchang	Chungking
Wuchang College of Fine Arts	Wuchang	Kiangtsin, Szechwan
National Central Industrial College	Nanking	Chungking
National Academy of Dramatic Arts	Nanking	Kiangan, Szechwan

To Yunnan, Kweichow, and Kwangsi Provinces:

National Chekiang University	Hangchow, Chekiang	Tsunyi and Meitan, Kweichow
National Southwest Associated University	Peiping & Tientsin	Kunming, Yunnan

To Yunnan, Kweichow, and Kwangsi Provinces :—Contd.

Institutions	Original Site	Present Site
Tahsia (Great China) University	Shanghai	Kweiyang, Kweichow
Huachung College	Wuchang	Tali, Yunnan
National Hsiangya Medical College	Changsha, Hunan	Kweiyang
Kweichow Branch of National Chiaotung University	Peiping & Tangshan	Pingyueh, Kweichow
Kiangsu (Provincial) Education College	Wusih, Kiangsu	Kweilin, Kwangsi (now suspended)
Wusih School of Chinese Classics	Wusih	Peiliu, Kwangsi

To Shensi and Kansu Provinces :

University of Shansi	Taiyuan, Shansi	Sanyuan, Shensi (now back to Yichuan, Shansi)
Shansi Medical College	Taiyuan	Sian, Shensi (now merged with Shansi University)
Chiaotso Engineering College	Chiaotso, Honan	Tienschui, Kansu (now merged with Northwest Engineering College)

Among institutions in the foregoing list, Tahsia University kept its main school work in the International Settlement of Shanghai while the part removed to Kweiyang served as a branch school. Fuhtan University which was shifted to Peipei near Chungking still maintained a supplementary school in the International Settlement of Shanghai. Kwanghua University also remained in Shanghai, the part removed to Chengtu serving only as a branch school. Other institutions operating in the International Settlement and French Concession of Shanghai included the National Chiaotung University (with its branch school near Chungking), National Chinan University, Shanghai Commercial College, National School of Music, Utopia (Tatung) University, University of Shanghai, St. John's University, Soochow University, Shanghai College of Law and Jurisprudence, Hangchow Christian College, Chengfeng College of Arts, Nantung College, Shanghai Medical College for Women, Tungteh Medical College, Tungnan Medical College, Far East School of Physical Education, Shanghai School of Fine Arts, Sinhua School of Fine Arts.

Most of these institutions, together with those which remained in Peiping and Tientsin were affected following the outbreak of the Pacific war. A plan was mapped out by the Ministry of Education for the establishment somewhere in Chekiang province of a Southeast Union University absorbing most of the public and private institutions in

Shanghai. The Ministry appointed a preparatory committee of ten including Messrs. Ho Ping-sung, president of Chinan University; J. Usang Ly, president of Chiaotung University; P. Fu-heng, president of National Shanghai Commercial College; Yang Yung-ching, president of Soochow University; Van Tseng-kong, president of the University of Shanghai; Chang Shou-yung, president of Kwanghua University; Tsao Hui-chun, president of Utopia University; Hu Chien-chung, publisher of the *Southeastern Daily News* in Kihwa; Lo Mei-huan, formerly education commissioner of Ningsia and Wang Feng-kai, noted educator. This plan, however, was not carried out due to the unsettled conditions in Chekiang following the Japanese campaign on the Chekiang-Kwangsi Railway zone early in 1942.

On December 29, 1942, the recommendation of the Ministry of Education to incorporate the Southeast Union University into the Yingshih University in Chekiang province was approved at a meeting of the Executive Yuan.

Schools in Hongkong, Tientsin and Peiping were all asked to move to the interior. Among them, Yenching University in Peiping, whose president, Dr. J. Leighton Stuart is in "honorary confinement" in Peiping has already reopened in Chengtu. Half of the students—approximately 130—came from Peiping while the other half are new students admitted at entrance examinations held in Chungking and Chengtu.

Following the mass migrations of China's institutions of higher learning, there have been amalgamations, reorganizations and dissolutions. Besides Tsinghua, Peking and Nankai Universities which jointly form the National Southwest Associated University, and National Peiping University, National Peiping Normal College and Peiyang Engineering College which form the National Northwest Union University, the schools of fine arts from Peiping and Hangchow were merged to become the National School of Fine Arts. The College of Railway Administration (formerly in Peiping) was incorporated into the Engineering College (formerly in Tangshan, Hopei) of Chiaotung University to form the Kweichow Branch of the National Chiaotung University. In 1938, the Engineering Colleges of National Northwest Union University and Northwest University combined with the engineering college from Chiaotso, Honan as the National Northwest Engineering College, while the College of Agriculture of the Northwest Union University combined with Northwest Technical College of Agriculture and Forestry as the National Northwest Agricultural College. In 1939, the College of Agriculture and Normal College of the Northwest Union University were made independent institutions. The Northwest Union University with its remaining Colleges of Arts and Sciences, Law and Commerce was renamed the National Northwest University. Other institutions amalgamated included the Kiangsu Provincial Medical College and the Department of Medicine of Nantung College which jointly form the National Kiangsu Medical College.

The Yunnan (Provincial) University in Kunming and Kwangsi (Provincial) University in Kweilin were nationalized in 1938 and 1939, respectively. The Provincial University and Hydraulic Engineering College of Honan, Ying-shih University of Chekiang, Chungking University of Szechwan and the University of Shensi together with the School of Music of Fukien were changed into national institutions in 1942. Private institutions nationalized included the Hsiangya (Yale-in-China) Medical College and Fuhtan University.

Among universities, independent and technical colleges affected by war, 19 have suspended work. They include the Hopei Provincial Industrial Technical College, Women's Normal College, Insti-

tute of Law and Commerce, Medical and Agricultural Colleges in Hopei province; Shansi Provincial Industrial Technical College, Commercial and Agricultural Technical Colleges in Shansi province; Shantung Provincial Rural Reconstruction Technical Institute in Shantung province, Shanghai Municipal Physical Education College in Shanghai, Peiping Municipal Physical Education College in Peiping and China Institute (*Chung Kuo Kung Hsueh*). The Shantung (Provincial) University was removed to Wanhsien, Szechwan, and suspended there because of lack of students. So was Anhwei (Provincial) University after its removal to Shasi, due to financial difficulties. The Navigation Technical College at Woosung closed down shortly after the outbreak of hostilities in Shanghai, while the Sino-French Engineering College and Chichih University in Shanghai were dissolved because their presidents joined the puppet regime in Nanking. In 1941, Kiangsu (Provincial) Education College and Chunchih Agricultural and Commercial Technical College closed also because of lack of students.

Aside from those suspended after the war began, more than 80 higher institutions of all description have at one time or another moved inland. The only institutions which have remained in their original sites are Chungking University in Chungking, Szechwan (Provincial) Education College at Tzechikow near Chungking, West China Union University in Chengtu, Yunnan University in Kunming, Kwangsi University in Kweilin, Kansu College in Lanchow, Sinkiang College in Tihwa and other recently-established institutions in the interior.

WAR DAMAGES

The losses suffered by China's institutions of higher learning during the war can only be roughly estimated as no detailed up-to-date statistics are available. Figures in the possession of the Ministry of Education cover only the period ending December, 1939. According to these, the grounds and buildings of 91 out of the 108 pre-war colleges and universities were either occupied or damaged by the enemy. Among them 14 have been destroyed. The total losses sustained up to that date amounted to more than \$90,000,000. The following tables show the distribution of such losses.

PROPERTY LOSSES OF NATIONAL UNIVERSITIES AND COLLEGES IN
THE WAR AREAS (UP TO THE END OF DECEMBER, 1939)

NAME	Property Losses	REMARKS
National Central University	\$3,383,400	
National University of Peiping	1,922,317	
National Peking University	1,628,515	This sum includes only the equipment; the cost of the premises is not included.
National Tsinghua University	6,050,000	University premises and buildings, \$3,500,000; library \$2,500,000; branch in Changsha bombed, \$50,000.
National Normal University	1,502,871	
National Shantung University	3,611,663	Buildings in Tsingtao, \$2,912,580; laboratory, \$223,735; library, \$181,764; premises in Tsinan, College of Agriculture, \$287,584.
National Sun Yat-sen University	6,638,964	Damages by aerial bombardment.
National Tungchi University	1,480,000	
National University of Chekiang	1,560,000	Premises, \$1,300,000; other equipment, \$260,000.
National Hunan University	700,000	Damages by aerial bombardment.
National Amoy University	1,288,202	Buildings, \$972,700; libraries and laboratories, \$80,907; machinery, equipment, and museum pieces, \$189,595.
National Peiyang Engineering College	629,063	
National Chungcheng Medical College	1,200	Damages by aerial bombardment.
National School of Pharmacy	49,000	
School of Physical Education of the Central Institute of National Physical Exercises	179,814	
Woosung School of Commercial Navigation	290,700	Buildings and equipment, \$196,500; machinery, \$19,400; library and Laboratories, \$24,000; losses of faculty and students, \$50,800.
National School of Fine Arts	81,030	
National Chinan University	413,000	
National Wuban University	2,875,937	
National Chiaotung University	2,369,650	
National Commercial College of Shanghai	183,066	
National School of Music	159,975	
National Medical College of Soochow	5,000	
TOTAL	\$37,003,467	

PROPERTY LOSSES OF PROVINCIAL UNIVERSITIES AND COLLEGES IN
THE WAR AREAS (UP TO THE END OF DECEMBER, 1939)

NAME	Property Losses	REMARKS
Provincial University of Hunan	\$1,600,000	This includes only the costs of the premises; library and laboratory equipment not counted.
Anhui Provincial University	3,088,607	
Shansi Provincial University	366,770	
Provincial Hsiangching University	951,837	
Kiangsu Provincial College of Medical and Political Science	325,106	
Kiangsu Provincial College of Education	249,678	
Hopei Provincial College of Technology	800,000	
Hopei Provincial Girls' Normal College	696,000	
Hopei Provincial College of Agriculture	152,353	
Hopei Provincial College of Medicine	186,930	
Chekiang Provincial School of Medicine and Pharmacy	698,794	
Shansi Provincial School of Agriculture	138,982	
Shansi Provincial School of Technology	14,589	
Kiangsi Provincial School of Medicine	70,000	
Honan Provincial School of Hydraulic Engineering	45,530	
Shantung Provincial School of Medicine	143,670	
Kiangsu Provincial School of Sericulture	64,051	
Kwangtung Provincial School of Physical Education	58,022	
TOTAL	\$9,650,919	

**PROPERTY LOSSES OF PRIVATE UNIVERSITIES AND COLLEGES IN
THE WAR AREAS (UP TO THE END OF DECEMBER, 1939)**

NAME	Property Losses	REMARKS
University of Nanking	\$15,384,834	
Fuhtan University	2,316,310	
Kwanghua University	544,975	
Tahsia University	800,000	
Soochow University	550,000	
University of Shanghai	1,510,000	
Yenching University	599,368	
Nankai University	3,750,000	University, \$3,000,000; Middle School, \$750,000.
Cheeloo University	957,350	
Huaching College of Wuchang	292,397	
Chunghua University of Wuchang	431,910	
Lingnan University	3,800,000	
Kwangtung Kuomin University	383,080	
Canton University	109,444	
Ginling College for Women	6,306,225	
Shanghai College of Law	510,000	
Chichih University	511,100	
Chaoyang College	247,750	
Chungkuo College	433,800	
Chengfeng College of Arts	100,000	
Peiping Union Medical College	.....
Peiping Minkuo College	215,000	
Tientsin Engineering and Commercial College	1,200,000	
Nantung College	307,810	
Hangchow Christian College	600,000	
Kwanghua Medical College of Kwangtung	169,926	
Chaiotso Engineering College	184,452	
Girls' College of Medicine of Shanghai	\$34,651	
Tungteh Medical College	160,000	
Southwestern Medical College	270,000	
Shanghai College of Law and Jurisprudence	50,000	
Wuchang School of Fine Arts	1,045,953	
Far East School of Physical Education	240,000	
Soochow School of Fine Arts	92,000	
Shanghai School of Fine Arts	123,000	
Sinhua School of Fine Arts	180,924	
Wusih School of Chinese Classics	110,000	
Boone Library School	26,000	
Chuantze School of Medicine of Shansi	102,650	
Railway School	30,988	
TOTAL	\$44,771,897	

NOTE.—The losses of University of Shanghai and Southeastern School of Medicine have not yet been reported.

The losses sustained by institutions of higher learning cannot be entirely evaluated in terms of money, as, for instance, the materials for economic research possessed by Nankai University, the modern history documents of Tsinghua University and the geological fossils of Peking University are most precious and can never be replaced.

As time went on, few educational institutions, no matter how far removed from the center of war, could get safely beyond the reach of Japan's ever-lengthening air arm. In June, 1939, the campus of West China Union University in Chengtu was bombed; in August, Wuhan University suffered in the bombing of the small West Szechwan city to which it had moved. The National Central University at Shapingpa was bombed thrice in the summer of 1940, on June 27, 29 and July 4. Fuhtan University in Peipei near Chungking also suffered serious bombing damage. The National Southwest Associated University in Kunming was most severely bombed on August 14, 1941, resulting in the destruction of its biology laboratory, book shelves of the library and a number of classrooms. In the same raid its normal college, dormitory for women students, dormitory for faculty members, general administration office and office of the executives were all badly damaged and rendered uninhabitable.

NEWLY-ESTABLISHED INSTITUTIONS

Among institutions established since the war broke out, 15 are national. Kweiyang Medical College was founded in Kweiyang in 1937. The following year at Lantien in Hunan province, an Independent Normal College was established. The education colleges of Central and Northwest Union Universities were changed into normal colleges. The education departments of the Southwest Associated and Yunnan Universities were combined into a normal college attached to the former while the education department of Chekiang University and the education department and institute of the National Sun Yat-sen University were all raised to the status of normal colleges in 1939. In 1940, an independent women's normal college was established at Peisa, Szechwan, and in the following year Szechwan University was also ordered to set up a normal college. To meet the need for teaching personnel in Kweichow province, the National Kweiyang Normal College was founded in Kweiyang. The National Kweichow

University at Kweiyang and National Northwest Medical College in Lanchow, Kansu, were founded in 1941. For training technical personnel, three technical colleges were established in 1939 at Loshan in Szechwan, Lanchow in Kansu and Sichang in Sikang. To replace the former one in Woosung, a marine college was inaugurated near Chungking. In 1940, National Chung-cheng University was founded at Taiho in Kiangsi province and the National Conservatory of Music was founded at Chingmukwan near Chungking. The year 1941 saw the establishment of National Kweichow Agricultural and Industrial College, National Social Education College and National Physical Education College.

Newly-established provincial institutions include Yingshih University in honor of Chen Ying-shih, revolutionary martyr, (made national on December 29, 1942), University of Chekiang, Fukien Provincial Agricultural College, Kwangsi Provincial Medical College, Hupeh Provincial Education and Agricultural Colleges. Among technical colleges are Kiangsi Provincial Animal Husbandry and Veterinary Science College, Shensi Provincial Medical and Commercial Colleges, Fukien Provincial School of Music (made national in 1942) and Normal College, Hunan Provincial Agricultural, Industrial and Commercial Colleges, Szechwan Provincial College of Technology, Kiangsu Provincial Soochow Industrial College and the Kiangsu-Anhwei Joint College of Technology. The Suiyuan-Mongol Law College of Suiyuan has also registered with the Ministry of Education. In all, there are 16 newly-established provincial higher institutions and technical colleges.

The number of private institutions was increased by 11. They are the Lisin Accounting Technical College, Minghsien (Oberlin-in-China) Agricultural and Industrial Technical College, Nanhua (South China) College, Szechwan-Sikang Agricultural and Industrial College, Chungking Methodist Commercial College, Northwest School of Pharmacy, Shanghai English Language School, West China Industrial and Commercial Technical College, Chengtso Embroidery School for Women, Rural Reconstruction College of the Mass Education Movement Association and Chunghua Vocational Technical College.

Of the 133 institutions of higher learning, there are 39 universities of which 22 are national and 17 are private. Among the 47 independent colleges, 16

are national, 10 provincial and 21 private. Technical colleges number 47 of which 17 are national, 16 provincial and 14 private. By provinces, Szechwan tops the list with 39 institutions (11 universities, seven independent colleges and 21 technical colleges); Shensi and Fukien come next with nine institutions each (Shensi: two universities, four independent colleges and three technical colleges; Fukien: one university, five independent colleges and three technical colleges); Hunan ranks third with seven institutions (one university, two independent colleges and four technical colleges); Kweichow has seven institutions (three universities and four independent colleges); Kwangtung has six institutions (three universities and three independent colleges); Kiangsi has five institutions (one university, one independent college and three technical colleges); Yunnan has four institutions—all universities; Kwangsi and Kansu have three institutions each (Kwangsi: one university, one independent college and one technical college; Kansu: one independent college and two technical colleges); Chekiang, Hupeh and Honan have two institutions each (Chekiang: one university and one technical college; Hupeh: two independent colleges; Honan: one university and one technical college); Anhwei, Sikang and Sinkiang have one institution each; (Anhwei: one technical college; Sikang: one technical college, Sinkiang: one independent college). Besides, there are four institutions in Peiping (two universities and two independent colleges), one in Tientsin (independent college), 25 in Shanghai (seven universities, 10 independent colleges and eight technical colleges) and two in Hongkong (one university and one independent college).

IMPROVEMENTS IN CURRICULUM

With the redistribution and decentralization of China's institutions of higher learning, certain improvements and readjustments in organization and curriculum to meet wartime demands have been effected. These are based upon the program for wartime education adopted by the Extraordinary Kuomintang National Congress convened in March 1938. The Congress resolved upon the *Program of Armed Resistance and National Reconstruction*. Articles 29, 30, 31 and 32 of the Program dealt specifically with wartime education.

"Article 29. Both the educational system and teaching material shall be revised. A program of wartime education shall be instituted with emphasis on the

cultivation of the people's morals, and the enhancement of scientific research and the expansion of necessary facilities.

"Article 30. Technical personnel of all kinds shall be trained and given proper assignment in order to meet the needs of war.

"Article 31. Youths shall be given training to enable them to work in the war areas or rural districts.

"Article 32. Women shall be given training so that they may be of service to social enterprises and thereby of help to the nation's war strength."

The principle is to effect a well-balanced development of the different departments of learning. In many cases the emphasis has been on science and engineering. This policy began prior to the outbreak of war when many institutions of higher learning were instructed by the Ministry of Education to make changes and additions to that effect. For instance, the National Central University was ordered to provide a department of sericulture, Szechwan University to establish departments of horticulture and insect control, and Fukien Union University to have departments of agriculture and agricultural economics. Later the National Central University added a department of hydraulic engineering and a special course in mechanical engineering which has now been changed and enlarged into a department of aeronautical engineering. Peiyang Engineering College included in its mechanical engineering department a course in aeronautical engineering. A college of engineering was added to Utopia University which began with chemical and electrical engineering courses. Amoy and Kwanghua Universities added departments of architecture and engineering while the Industrial and Commercial College in Tientsin reorganized its engineering department to include construction and architecture courses.

During the first year of war, the provincial education colleges of Kwangtung, Szechwan and Kiangsu, together with the College of Education of Tahsia University were designated training centers for social and vocational education personnel. Wuhan University's agricultural department was incorporated into the College of Agriculture and Forestry of the National Central University. National Southwest Associated University opened a department of aeronautical engineering. Fuhtan University started a statistics

department. Kwangsi University instituted departments of electrical engineering and animal husbandry and veterinary science. A College of Agriculture was planned by Yunnan University.

In 1939, National Sun Yat-sen University's college of engineering included as a new feature a department of construction and architecture while departments of animal husbandry and veterinary science and agricultural economics were introduced in its college of agriculture. Fuhtan University augmented its curriculum by the addition of a department of horticulture. National Tungchi University included in its department of mechanical engineering a special course in ship-building.

In 1940, National Northwest University's geography department was expanded to include geology; National Hunan University's chemistry department was split into two divisions of chemistry and chemical engineering; Kwangsi University started a department of chemical engineering; National Northwest University's agricultural department was split into three departments of agriculture, insect control and agricultural economics; Canton University's College of Sciences was changed into a College of Sciences and Engineering with the addition to its curriculum of a department of architecture and engineering; Fuhtan University's horticultural department and a special course in land reclamation were incorporated into a newly-organized College of Agriculture which include a special course in tea cultivation; Amoy University's College of Sciences was changed into a College of Sciences and Engineering; Chungking University's electrical engineering department was split into two departments of electrical and mechanical engineering; Soochow University opened a department of chemical engineering.

In 1941, Northwest Engineering College opened a department of industrial management; Northwest College of Technology started a course in farm irrigation; Cheeloo University's special course in pharmacy was enlarged into a pharmaceutical department.

In all institutions of higher learning there are 192 colleges of which 81 are national, 23 provincial, and 88 private. Colleges of arts and literature constitute the largest number closely followed by colleges of sciences. Then come medicine, law, engineering, agriculture, commerce, and normal colleges. There are 725 departments of which 39 belong to national institutions, 63 to provincial and 313 to private institutions. Chemistry departments top the list followed by those of Chinese literature and economics. Of the total of 80 special courses, 39 belong to national institutions, 12 to provincial and 29 to private institutions. Courses in normal education predominate, followed by agriculture, arts and literature, engineering and commerce. There are altogether 47 technical colleges with a total of 100 departments and courses of which 35 belong to national institutions, 40 to provincial and 25 private institutions. Engineering departments or courses rank first in importance followed by commercial and other technical departments of studies.

HIGHER EDUCATION FINANCES

The pre-war annual expenditure of China's institutions of higher learning, according to statistics in the possession of the Ministry of Education, reached the highest peak of \$39,200,000 in 1936. An abrupt drop to \$30,400,000 was registered in 1937, the first year of the war. The upward trend was resumed the following year. Following is a table showing the annual expenditures during the 13-year period from 1928 to 1940:—

Year	No. of Institutions	Annual Expenditures
1928	74	\$17,909,810
1929	76	25,533,343
1930	86	29,867,474
1931	103	33,619,237
1932	101	33,203,821
1933	108	33,564,921
1934	110	35,196,501
1935	108	37,126,870
1936	108	39,275,386
1937	94	30,431,556
1938	97	31,175,068
1939	101	37,348,870
1940	113	58,296,680

Taking the year 1936 as typical of the pre-war period and 1940 as typical of the war period, the following table shows how the annual expenditure was distributed:

Description	1936		1940	
	Amount	Percentage	Amount	Percentage
Salaries	\$21,096,544	53.71	\$28,507,231	48.90
Administration	6,494,830	16.53	6,461,561	11.08
Equipment	7,564,420	19.26	16,075,364	27.58
Academic Research	1,739,467	4.43	4,778,151	8.20
Others	2,381,125	6.07	2,474,373	4.24
Total	\$39,276,386	100.00	\$58,296,680	100.00

The year 1940 also marked the peak of annual receipts of all the institutions of higher learning which totalled \$66,792,466. This marked an increase of more than \$18,000,000 as compared with the annual receipts in the pre-war year of 1936 which totalled \$38,749,147.

Description	1936	1937	1938	1939	1940
Appropriation	\$23,139,466	\$17,232,773	\$20,056,502	\$25,532,857	\$41,415,058
Property	770,132	.....	1,894,050	1,109,482	4,590,796
Contribution	6,765,895	7,809,444	4,016,693	5,079,397	4,260,382
Tuition Fees	3,421,426	1,768,888	1,813,821	1,844,167	2,789,833
Miscellany	4,652,228	3,407,880	2,911,969	2,595,723	3,736,397
Total	\$38,749,147	\$30,218,985	\$30,693,935	\$36,161,626	\$56,792,466

Appropriations from the National Treasury to institutions of higher learning include current and provisional expenses of all national universities, independent and technical colleges as well as subsidies for provincial and private institutions. In 1936, the total of national current and provisional expenses was budgeted at \$990,650,000 of which \$54,930,000 or 5.54 per cent went to educational and cultural institutions. Out of that amount, \$19,760,000 went to national institutions of higher learning and \$2,150,000 as subsidies to provincial and private institutions, aggregating \$21,910,000 or 39.9 per cent of the total amount of educational and cultural expenses and 2.21 per cent of the total national expenses. The educational and cultural expenses in 1937 decreased to \$47,780,000 of which \$24,870,000 or 52.06 per cent went to institutions of higher learning. Effective from September, 1937, all appropriations from the National Treasury were reduced by 30 per cent. As a result, the annual appropriations for national institutions of higher learning decreased to \$22,210,000 and subsidies for provincial and private ones to \$1,500,000, aggregating \$23,710,000. The half-year budget for July-December, 1938, listed only \$7,490,000 for institutions of higher

The receipts consist of appropriations from National and Provincial treasuries, proceeds from property, contributions, tuition fees and other items. The following table shows the annual receipts of the institutions of higher learning during the five-year period from 1936 to 1940:

learning. Grants for schools moving to the interior and for relief of teachers and students from war zones, however, totalled more than \$175,000 each month. Educational and cultural expenses for the fiscal year of 1939 totalled \$34,600,000 of which \$17,360,000 went to higher-education institutions. For the fiscal year of 1940, \$19,090,000 out of \$44,130,000 educational and cultural fund went to higher institutions. A large increase was registered in 1941 when the educational and cultural fund reached \$80,800,000 of which \$38,000,000 went to higher institutions.

BUILDINGS AND EQUIPMENT

In equipment and buildings, the greatest progress in the history of China's higher education was made during the ten years before the war. It was during this period that National Sun Yat-sen University, National Tsinghua University and National Wuhan University completed their beautiful and commodious school buildings and equipment. The Northeast and Yenching Universities had completed their school buildings and equipment before this period, while those of National Central University remained under construction. New school buildings constructed during the period were valued at an average of

\$6,000,000 each year and books purchased for school libraries averaged 400,000 volumes each year. The following table shows the trend of increase:—

Year	Total	Library Books Increased	Value of New Buildings and Equipment
1928	2,158,126	...	...
1929	2,713,762	555,636	\$5,287,119
1930	2,983,266	269,504	6,208,283
1931	3,633,927	650,661	6,379,778
1932	3,951,847	317,920	6,216,559
1933	4,493,616	541,769	6,376,137
1934	4,876,964	383,348	6,642,254
1935	5,181,128	304,164	6,812,185
1936	5,446,530	265,402	7,564,420
Total		3,288,404	\$51,486,735
Average each year		411,051	6,435,842

The buildings of the 108 pre-war institutions of higher learning in 1936 were valued at \$65,000,000 and equipment at \$21,000,000. The following table shows the value of school buildings and

equipment as distributed among national, provincial and public and private institutions among which the values of buildings and equipment of seven institutions were unreported:

Description	Value of Buildings	Value of Equipment
National	\$21,039,511	\$ 8,625,473
Provincial & Public	5,057,210	2,422,284
Private	31,034,119	7,932,042
Total	\$57,130,840	\$18,979,799

No statistics are available as to the values of school buildings and equipment after the outbreak of war. Light in this connection, however, can be derived from the amounts of subsidies granted from the National Treasury for the remuneration of the teaching staff and improvements in school equipment of qualified private institutions. A special committee of seven members organized by the Ministry of Education examines petitions for such grants and determines the amounts to be given. Seventy per cent of the subsidies to private institutions are to be used specially for departments of science, engineering, agriculture and medicine. Then out of the total grants, 70 per cent are to be used for increasing equipment and 30 per cent to cover the salaries of additional teaching staff. In 1940, the latter item was increased to 40 per cent. This special fund was first fixed at \$760,000 a year, but was increased to \$1,784,000 in 1937 when provincial institutions were also made eligible to the fund. Subsidies granted during the latter half of 1938 totalled \$598,000; those granted during 1939 totalled \$1,146,120; 1940, \$1,627,120; 1941, \$2,427,120. Funds appropriated to national institutions of higher learning for school buildings and equipment

totalled \$3,454,383 in 1937; \$590,000 in 1938 (half-year); \$3,013,000 in 1939; \$1,180,000 in 1940 and \$1,600,000 in 1941.

Two appropriations of U.S. \$200,000 and U.S. \$800,000 were made in 1940 and 1941, respectively, for the purchase of library books and laboratory equipment.

The first appropriation was distributed among 39 national institutions and the second among 50 national institutions.

In addition, the Ministry of Education in 1938 organized a special committee to collect library books and textbooks. Up to the end of 1940, 62 boxes totalling 3,047 volumes of books and other publications valued at £3,000, together with 15 kinds of magazines valued at £350, were collected from England. They were distributed among 23 national, provincial, public and private institutions. In America, 200 boxes of books are being collected and shipped to China for distribution.

ENTRANCE EXAMINATIONS

To keep a well-balanced development of higher education, a unified system of entrance examinations for all national and public institutions of higher learning has been enforced, effective from 1938. Through this system the number of

students in any department of the colleges of arts, literature, law and education is limited not to exceed that of students in any department of the colleges of science, agriculture, medicine and engineering. Private institutions of higher learning to which the unified system of entrance examinations does

not apply, however, were required to submit their plans on the number of new students to be admitted to the Ministry of Education for approval. The numbers of students who passed entrance examinations for the different colleges during the ten-year period from 1931 to 1940 are shown in the following table:

Year	Science, Engineering, Medicine and Agriculture	Literature, Law, Commerce and Education	Normal Colleges	Unclassified	Total
1931	11,227	32,940	...	...	44,167
1932	12,007	30,070	...	...	42,710
1933	14,133	28,787	...	...	42,936
1934	15,698	26,042	...	...	41,768
1935	16,990	24,082	...	56	41,128
1936	18,459	23,152	...	311	41,922
1937	15,280	15,227	...	681	31,188
1938	18,029	16,836	850	465	36,180
1939	21,728	20,022	1,776	896	44,422
1940	25,262	24,897	2,217	...	52,376

From the above table it can be seen that the number of students majoring in science and allied subjects has been on the upward trend whereas arts students have been decreasing so that an equilibrium in the emphasis of these two major branches of higher education has been attained. The fact that the total number of students admitted in colleges and universities in 1940 was increased to more than 50,000 shows the wartime progress of China's institutions of higher learning.

EMPLOYMENT FOR COLLEGE GRADUATES

Readjustments and reorganization in curriculum and departments of institutions of higher learning are also effected in the light of findings of the Central Reconstruction-Education Co-ordination Committee. This committee was organized by the Ministry of Education

in compliance with an order of the Executive Yuan in August, 1938. It consists of representatives of the Ministries of Interior, Finance, Economic Affairs, Communications, and Military Affairs and the Aeronautical Affairs Commission. Its purpose is to investigate the need for technical personnel in various organizations and branches of wartime activity on the basis of which advice is given as to necessary changes in curriculum and teaching matter in schools. The committee has also been instrumental in assigning graduates from colleges and universities to jobs for which they may be qualified.

The number of graduates from institutions of higher learning, according to statistics of the Ministry of Education, totalled annually 7,000 during 1931-33, 9,000 during 1934-36, 5,000 during 1937-39 and 7,700 during 1940. The Ministry of Education secured employment for 2,144 graduates in 1937, 2,413

in 1938, 2,812 in 1939, 2,776 in 1940. University graduates from 1937 to 1940 secured work in the following government offices and other organizations:

Organizations	No. of Graduates Employed
Ministry of Military Affairs	1,178
Board of Military Training	282
Board of Military Operations	12
Ministry of Education	202
Aeronautical Affairs Commission	422
Wartime Health Personnel Recruiting Committee	1,727
Ministry of Communications	1,753
National Conservancy Commission	74
Ministry of Economic Affairs	1,196
Chekiang Provincial Government	116
Ministry of Finance	263
Anhwei Provincial Government	174
Ministry of Agriculture and Forestry	36
Ministry of Social Affairs	10
Ministry of Interior	1
Ministry of Justice	84
Board of Political Training	33
Fukien Provincial Government	252
Kiangsi Provincial Government	12
Hunan Provincial Government	102
Kwangsi Provincial Government	444
Kweichow Provincial Government	127
Yunnan Provincial Government	33
Szechwan Provincial Government	52
Kansu Provincial Government	15
Sikang Provincial Government	9
Kweichow Provincial Kuomintang Headquarters	20
San Min Chu I Youth Corps	520
Administrative Personnel Training Corps of the National Military Council	100
Board of Trustees for British Indemnity Funds	240
Other Organizations	656
TOTAL ...	10,145

Measures for the readaption of China's higher education to wartime needs also include emphasis on military training. This was begun in October, 1931, and supplemented in June, 1934, by holding summer camps. Military training has since been conducted in three forms, namely, ordinary training during the school year, centralized training in summer camps and training in first-aid. Summer camps for collegians were cancelled beginning in 1940 and, instead, were conducted for students of senior middle schools upon their graduation.

More than 50 subjects with a direct bearing on the war have been included in the curriculum of institutions of higher learning. Among the more important of these may be mentioned chemistry of poison gas, charcoal and oil refining, national defense chemistry, armament manufacture, studies on military weapons and fortifications, air defense, automobile-driving, road-construction, army medical service, land reclamation, colonization and food administration, wartime economy, wartime finance, wartime government organization, wartime social welfare, wartime education and military psychology.

PROMOTION OF GRADUATE STUDIES

Graduate studies have been promoted in many institutions of higher learning. According to the plan laid out by the Ministry of Education in 1929, only those institutions with an annual budget of more than \$1,000,000, with sufficient library and laboratory equipment and with members of the faculty who have made special contributions toward the advancement of certain lines of learning can offer graduate studies. A department of graduate studies must offer at least three courses of advanced training and at least two such departments can make up a school of graduate studies. In August, 1929, the first set of regulations governing the establishment of graduate departments or schools was promulgated. At that time, both the National Sun Yat-sen University in Canton and Yenching University in Peiping had made preparations for the establishment of schools of graduate studies. In 1934, more detailed regulations embodying specific stipulations on the qualifications for the deans, professors and students for graduate departments and schools were announced. These were supplemented by a law enforced in the following year governing the conferring of degrees. This provides that those who have

studied for two years in the graduate departments or schools of government or recognized private universities or independent colleges and who have passed examinations of their respective institutions can be recommended by their school authorities as candidates for the M.A. degree. After 1935, 26 departments of graduate studies with 45 courses were established by 12 institutions. Most of these, however, were suspended on account of unsettled conditions during the mass migrations to the interior after the outbreak of war. In 1938, the Ministry of Education, in order to encourage the resumption of graduate studies appropriated funds to the various national institutions. At present, there are 35 graduate departments with 62 courses in 17 public and private institutions as listed below:—

1. National Central University has seven departments of graduate studies. Its graduate department in the College of Sciences offers courses in mathematics, physics, chemistry and geography; the department in the College of Agriculture offers courses in agriculture and forestry; the department in the Normal College in educational psychology; the department in the College of Law in political science and economics; the department in the College of Engineering in electrical and mechanical engineering, construction and architecture; the department in the College of Arts in history and philosophy; and the department in the College of Medicine in physiology.

2. National Southwest Associated University has four graduate departments. The College of Arts provides graduate study in Chinese literature, history, philosophy and Western literature; the College of Sciences in mathematics, physics, chemistry, biology and geology; the College of Engineering in electrical and mechanical engineering, construction and architecture; the College of Law in political science and economics.

3. National Sun Yat-sen University has three graduate departments. The College of Arts offers courses in Chinese literature and history; the College of Agriculture in soil and agricultural botany; the Normal College in education and educational psychology.

4. National Wuhan University has two graduate departments. Under the College of Engineering is a department of architecture and electrical engineering and under the College of Law a department of economics and political science.

5. National Chekiang University has three graduate departments with courses in mathematics under the College of Sciences, in history and geology under the College of Arts, and in chemical engineering under the College of Engineering.

6. National Northwest Engineering College has a graduate department of mining.

7. National Szechwan University has a graduate department in Chinese literature under its College of Arts and another one in chemistry under its College of Sciences.

8. National Northwest Agricultural College has a graduate department in farm irrigation.

9. National Northwest Normal College has a graduate department in education.

10. Nankai University has a graduate department specializing in economics under its College of Commerce.

11. University of Nanking has three graduate departments. The College of Arts provides a department of history; the College of Sciences a department of chemistry; and the College of Agriculture and Forestry a department of agricultural economics and horticulture.

12. Yenching University has three graduate departments, namely, department of graduate study in history in the College of Arts, department of graduate study in chemistry, physics and biology in the College of Sciences, and department of graduate study in political science in the College of Law.

13. Fujen University (Catholic) provides two departments of graduate study in its Colleges of Arts and Sciences. The former specializes in history and the latter in physics.

14. Lingnan University has a graduate department with courses in biology and chemistry in its College of Sciences.

15. Soochow University has a department of graduate study in law.

16. National Northeast University is planning to have a graduate department in history and geology in its College of Arts.

17. Cheeloo University is planning to have a department of graduate study in bacteriology in its College of Medicine.

The number of graduate students totalled 20 in 1937, 13 in 1938, 144 in 1939 and 284 in 1940. Appropriation

for each graduate department has been made by the Ministry of Education since 1939. In 1941, it amounted to \$1,240,000. This has been increased to \$1,500,000, effective from the fiscal year of 1942.

ACADEMIC RESEARCH

Study and research on academic and practical subjects, especially those that have a bearing on war, have been made by members of the faculty of the various institutions of higher learning with the encouragement of the Ministry of Education. An order to this effect was circulated in October, 1938. Special subjects covered according to papers later submitted to the Ministry by faculty members of 20 institutions, numbered 210. Among these, 47 were on literature and history, 61 on agriculture, 35 on science, 20 on law, 16 on education, 14 on engineering, seven on medicine. Topics related to war and reconstruction in the Southwest and Northwest include: (1) Alcohol as synthetic for gasoline, (2) land reclamation and colonization problems in Szechwan border regions, (3) topography of West China of military significance, (4) tribespeople of Northwest China, (5) racial, cultural and religious problems in the Northwest, (6) utilization of land and distribution of population in Szechwan province, (7) problems between Han-Chinese and the Chiangs (a tribe in Szechwan border regions), (8) effect of the Sino-Japanese war on China's economy, and (9) historical background of the Sino-Japanese war. According to a survey made in 1941, 322 college professors and experts were engaged in study and research in various technical subjects.

In the spring of 1940, the Ministry of Education organized an Academic Affairs Advisory Committee. Its functions are to advise on academic research projects of the various institutions, to recommend measures for the advancement of academic research, to examine the qualifications of graduate students who have been recommended as candidates for M.A. and doctorate degrees, to examine and approve suggestions for improvements in colleges and universities, to examine the qualifications of faculty members of the various institutions of higher learning, to study and advise on problems concerning the policy of sending students abroad and to study and devise measures of international cultural cooperation.

Serving as members *ex-officio* on this committee are the Minister and Vice-Ministers of Education and director of the

Department of Higher Education. Of the 25 members of the committee, 12 were invited by the Ministry of Education while 13 were selected from among presidents and deans of institutions of higher learning.

In 1941, the Ministry of Education set aside a special fund of \$100,000 from which prizes may be awarded for works of literature, philosophy, arts, and scientific inventions. Applications for such awards are to be submitted to the Academic Affairs Advisory Committee for consideration and those found satisfactory will be given prizes ranging from \$2,000 to \$1,000. After the regulations governing these prizes were announced in May, 1941, more than 510 applications were received by the end of 1941 and 204 were considered. Of these, however, only 29 were awarded prizes.

RESTRICTIONS ON SENDING STUDENTS ABROAD

Regulations governing the sending of students abroad have been made more strict. At first any student who had graduated from senior middle school might go abroad for advanced training. The qualifications required for going abroad were raised in a set of regulations promulgated in April, 1933. According to these, those going on government support must have the following qualifications:

- (a) Having been engaged in service closely related to the subject of specialization in school for more than two years after graduation from a government or recognized private university.
- (b) Having continued research work along special lines of study and written books or produced meritorious results after graduation from a government or recognized private university.
- (c) Having graduated with scholastic distinction from a government or recognized private university.

Those going on self-support must be graduates from a government or recognized private university. Graduates from higher vocational schools, however, are required to engage in vocational or technical service for more than two years before they are permitted to go abroad.

Since the outbreak of war, efforts have been made to limit the number of students studying abroad, so as not to drain on China's foreign exchange

reserve. The Ministries of Education and Finance have jointly formulated regulations restricting the purchase of foreign exchange and issuance of passports only to those students whose courses of study directly concern the problems of national defense, such as pure science, engineering, medicine and military science. To those who were studying these subjects abroad but who experienced financial difficulties as a result of the war, the Ministry of Education managed to remit varying amounts of relief funds so that they might complete their studies. A new set of regulations governing the sending of students to study abroad was promulgated as follows:—

- (1) The sending of students abroad, both on government and self-support, is limited to those who intend to study military science, pure science, engineering, medicine and those subjects of direct use or immediate concern to the war and national defense.
- (2) Any student must possess one of the following qualifications before his application can be considered:
 - (a) Having continued research or done actual work for at least two years, with distinction, after graduation from a government or recognized private university.
 - (b) Having continued research or done actual work for at least four years, with distinction, after graduation from a government or recognized private technical college.
- (3) With the exception of those students pursuing the study of military science, pure science, engineering, medicine or those subjects of direct use or immediate bearing on the war and national defense which must of necessity be continued, and whose accomplishments are endorsed by the institutions in which they study and by the Chinese embassies concerned, to whom an extension of the period of study may be granted, the students who are at present studying abroad with study permits and having stayed for three or more years in the countries specified or chosen, should at once return to China

before September, 1939; no remittance permit will be granted them in case of further delay on their part.

- (4) Students who are studying abroad without any study permit will not be considered by the Ministry of Education in case they petition for remittance; in case they wish to return at once, they may, with an endorsement from the Chinese embassies concerned, petition the Ministry of Education for remittance permit to cover their return passages.

The number of students studying abroad during 1929-40 totalled 7,837. The number of self-support students is larger than government-support ones. The number of self-support students studying abroad was largest in 1929 and smallest in 1940. The number of government-support students in foreign countries was largest in 1934 and smallest in 1938. Students sent abroad since the outbreak of war numbered 92 in 1938, 65 in 1939 and 86 in 1940.

The Board of Trustees for the British Indemnity Funds has sent, in seven batches, a total of 200 students to England. Examination for the eighth group was scheduled for 1940 but was called off due to the European war.

National Tsinghua University has held five annual examinations for scholarship students to the United States. Among those sent, 15 still remain in the United States. A special scholarship fund was created on the occasion of the celebration of the 70th birthday anniversary of Chairman Lin Sen of the National Government. Two examinations have been held, the one who passed the first examination is now studying in the United States specializing in military chemistry, the other examination called for a student in steel refining. The successful candidate for this scholarship is also going to the United States.

In 1942 the Ministry of Education sent to England eight scholarship students for graduate work, in the following subjects: aeronautical engineering, mechanical engineering, electrical engineering, shipbuilding engineering, textile engineering, chemical engineering (particularly manufacture of gunpowder), pharmaceuticals and economics (particularly planned economy). Examinations for applicants were held in Chungking, Chengtu, Kunming and Kweilin from August 20 to 22. Applicants who participated in the examinations were all university graduates with two or more years of research work or public service or technical school graduates with four or more years of research work or public service.

LIST OF INSTITUTIONS OF HIGHER LEARNING

National Universities	President	Location
1. Central University	Chiang Kai-shek	Shapingpa, Chungking
2. Southwest Associated University	Chiang Mon-lir	Kunming, Yunnan
	Mei Yi-chi	
	Chang Po-ling	
3. Northwest University	Lai Lien	Chengku, Shensi
4. Sun Yat-sen University	King Chin-chen (Acting)	Pingshih, Kwangtung
5. Chiaotung University	Wu Pao-fung (Acting)	Chiulungpo, Chungking
6. Tungchi University	Ting Wen-yuan	Lichwang, Szechwan
7. Chinan University	Ho Ping-sung	Kienyang, Fukien
8. Wuhan University	Wang Hsing-kung	Kiating, Szechwan
9. Northeast University	Tsang Chi-fang	Santai, Szechwan
10. Chekiang University	Chu Ko-chen	Tsunyi, Kweichow
11. Szechwan University	Hwang Chi-lu	Chengtu, Szechwan
12. Hunan University	Hu Shu-hua	Chensi, Hunan
13. Amoy University	Sah Pen-tung	Changting, Fukien
14. Yunnan University	Hsiung Ching-lai	Kunming, Yunnan
15. Kwangsi University	Huang Chih-lu	Kweilin, Kwangsi
16. Chungcheng University	Li Yun-hua	Taiho, Kiangsi
17. Fuhtan University	Chang Yi	Peipei, Chungking
18. Kweichow University	Chang Ting-hsin	Kweiyang, Kweichow
19. Chungking University	Chang Hung-yuan	Shapingpa, Chungking
20. Shansi University	Yen Hsi-shan	Yichuan, Shensi
21. Yingshih University	Wu Nan-hsuan	Taiho, Kiangsi
22. Honan University	Wang Kwang-ching	Sunghsien, Honan

LIST OF INSTITUTIONS OF HIGHER LEARNING—Contd.

<i>Private Universities</i>	<i>President</i>	<i>Location</i>
23. University of Nanking	Chen Yu-kwang	Chengtu, Szechwan
24. Utopia University	Tsao Hui-chun	Shanghai
25. University of Shanghai	Van Tsung-kong	Shanghai
26. Kwanghua University	Chang Shou-yung	Chengtu, Szechwan
27. Tahsia University	Wang Po-chun	Kweiyang, Kweichow
28. Yenching University	Y.P. Mei (<i>Acting</i>)	Chengtu, Szechwan
29. Fujen University	Chen Huan	Peiping
30. Soochow University	Yang Yung-ching	Shanghai
31. Chunghua University	Chen Shih	Chungking
32. Lingnan University	Li Ying-lin	Pingshih, Kwangtung
33. Kuomin University (of Kwangtung)	Wu Ting-sin	Kaiping, Kwangtung
34. Franco-China University	Li Lin-yu	Kunming, Yunnan
35. Cheeloo University	Tang Chi-ho	Chengtu, Szechwan
36. Huachung College	Wei Cho-min	Tali, Yunnan
37. University of Canton	Chen Ping-chuan	Kukong, Kwangtung
38. Aurora University	Hu Wen-yueh	Shanghai
39. West China Union University	Chang Ling-kao	Chengtu, Szechwan
40. Fukien Christian University	Lin Cheng-jen	Shaowu, Fukien
40a. Hangchow Christian College	Baen E. Lee	Shaowu, Fukien
<i>National Independent Colleges</i>		
41. Shanghai Medical College	Chu Heng-pi	Koloshan, Chungking
42. Chungcheng Medical College	Wang Tze-kan	Yungsin, Kiangsi
43. Kweiyang Medical College	Li Tsung-en	Kweiyang, Kweichow
44. Kiangsu Medical College	Hu Ting-an	Peipei, Chungking
45. Northwest Medical College	Hsu Tso-hsia	Nancheng, Shensi
46. Hsiangya Medical College	Chang Hsiao-chien	Kweiyang, Kweichow
47. Normal College	Liao Shih-cheng	Lantienchen, Hunan
48. Northwest Normal College	Li Cheng	Chengku, Shensi
49. Northwest Engineering College	Lai Lien	Chengku
50. Northwest Agricultural College	Unknown	Wukung, Shensi
51. Women's Normal College	Hsieh Hsun-chu	Peisa, Szechwan
52. Social Education College	Chen Li-kiang	Pishan, Szechwan
53. Kweichow Agricultural and Industrial College	Li Shu-tien	Kweiyang, Kweichow
54. Kweiyang Normal College	Wang Ko-jen	Kweiyang
55. Conservatory of Music	Chen Li-fu	Chingmukwan, Chungking
56. College of Commerce	Chen Jui-lin	Kanchen, Hunan
<i>Provincial Independent Colleges</i>		
57. Kansu College	Sung Ko	Lanchow, Kansu
58. Sinkiang College	Wang Shou-cheng	Tihua, Sinkiang
59. Hsiangching Commercial College	Lu Sze-tseng	Kukong, Kwangtung
60. Kwangtung College	Huang Lin-shu	Kukong, Kwangtung
61. Education College of Szechwan	Yen Hsin	Tzechikow, Chungking
62. Fukien Medical College	Hou Tsung-lien	Shahsien, Fukien
63. Kwangsi Medical College	Li Tsu-wei	Kweilin, Kwangsi
64. Fukien Agricultural College	Yen Chia-hsuan	Yungan, Fukien
65. Hupeh Agricultural College	Kwan Jo-liang	Enshih, Hupeh
66. Hupeh Education College	Chang Po-chin	Enshih, Hupeh
<i>Private Independent Colleges</i>		
67. Peking Union Medical College	H. S. Houghton (<i>Acting</i>)	Peiping
68. Shanghai College of Law and Jurisprudence	Unknown	Shanghai
69. Nantung College	Cheng Yi-tung	Shanghai
70. Chungkuo College	Unknown	Peiping
71. Chaoyang College	Sun Hsiao-lou	Pahsien, Szechwan
72. Shanghai College of Law	Chu Fu-cheng	Lansi, Chekiang

LIST OF INSTITUTIONS OF HIGHER LEARNING—Contd.

<i>Private Independent Colleges—Contd.</i>	<i>President</i>	<i>Location</i>
73. Ginling College for Women	Wu Yi-fang	Chengtu, Szechwan
74. Fukien Christian College	Lin Ching-yi	Shaowu, Fukien
75. Hangchow Christian College	R. J. McMullen	Shanghai
76. Chengming College of Arts	Chiang Wei-chiao	Shanghai
77. Minkuo College	Lu Tang-ping	Ningshiang, Hunan
78. Hwanan College for Women	Wang Shih-ching	Nanping, Fukien
79. Engineering and Commercial College	Liu Pin	Tientsin
80. Women's Medical College (of Shanghai)	Unknown	Shanghai
81. Tungteh College of Medicine	Ku Yu-chi	Shanghai
82. Tungnan College of Medicine	Kuo Chi-yuan	Shanghai
83. Kwanghua College of Medicine	Chen Yen-fen	Hongkong
84. Nanhua College	Chung Lu-chai	Meih sien, Kwangtung
85. Szechwan-Sikang Agricultural and Industrial College	Wei Sze-lwan	Chengtu, Szechwan
86. Rural Reconstruction College	James Y. C. Yen	Chungking
<i>National Technical Colleges</i>		
87. School of Fine Arts	Chen Tsu-fu	Pishan, Szechwan
88. Central Industrial Technical College	Wei Yuan-kwang	Chungking
89. School of Pharmacy	Chen Sze-yi	Koloshan, Chungking
90. Technical School of Dentistry	Unknown	Chengtu, Szechwan
91. Normal School of Physical Education	Chang Chih-kiang	Peipei, Chungking
92. Central Technology College	Chow Hou-shu	Kiating, Szechwan
93. Northwest Technology College	Tseng Chi-kwan	Kaolan, Kansu
94. Sikang College of Technology	Chow Tsung-lien	Sichang, Sikang
95. Marine College	Sung Chien-hsun	South Bank, Chungking
96. College of Commerce	Cheng Jui-lin	Kancheng, Hunan
97. Academy of Dramatic Arts	Yu Shang-yuan	Kiangsi, Szechwan
98. College of Oriental Languages	Wang Wen-hsuan	Chenkong, Yunnan
99. Border College	Wang Yen-kang	Pahsien, Szechwan
100. Technical College of Physical Education	Fang Wan-pang	Kiangtsin, Szechwan
101. Northwest Medical Technical College	Chi Chin-hsin	Lanchow, Kansu
102. Fukien School of Music	Lu Chien	Yungan, Fukien
103. School of Hydraulic Engineering of Honan	Liu Te-jen	Chenping, Honan
<i>Provincial Technical Colleges</i>		
104. Chekiang School of Medicine and Pharmacy	Wang Chi	Tientai, Chekiang
105. Kiangsi Industrial Technical College	Li Yu-hsiang	Yuntu, Kiangsi
106. Kiangsi School of Medicine	Hsiung Tsun	Kanhsien, Kiangsi
107. Kiangsi School of Animal Husbandry and Veterinary Science	Hsiao Chun-chin	Taiho, Kiangsi
108. Shantung School of Medicine	Yin Hsin-nung	Wanhsien, Szechwan
109. Shensi School of Medicine	Li Fu-ching	Sian, Shensi
110. Kiangsu School of Sericulture	Cheng Pi-chiang	Kiating, Szechwan
111. Anhwei Normal College	Liu Lai-chien	Lihuang, Anhwei
112. Fukien Normal College	Tang Yung-chin	Yungan, Fukien
113. Hunan School of Agriculture	Yang Pang-chieh	Nanyueh, Hunan
114. Hunan Industrial Technical College	Chung Po-chin	Nanyueh, Hunan
115. Hunan Commercial Technical College	Yu Nan-chiu	Nanyueh, Hunan

LIST OF INSTITUTIONS OF HIGHER LEARNING—Contd.

Provincial Technical Colleges—Contd.	President	Location
116. Szechwan College of Technology	Li Yu-hsing	Chengtu, Szechwan
117. Kiangsu-Anhwei Joint College of Technology	Hung Fan-wu	Sanyuan, Fukien
118. Shensi Commercial College	Lu Hsiang-chen	Sian, Shensi
119. Suiyuan Suiyuan-Mongol Law College	Unreported	Unreported
<i>Private Technical Colleges</i>		
120. Wusih School of Chinese Classics	Tang Wen-chih	Kweilin, Kwangsi
121. Boone Library School	Shen Tsu-jung	Kiangpei, Chungking
122. Wuchang School of Fine Arts	Tang Yi-ching	Kiangtsin, Szechwan
123. Far East School of Physical Education	Chen Meng-yu	Shanghai
124. Shanghai School of Fine Arts	Liu Hai-su	Shanghai
125. Sinhwa School of Fine Arts	Hsu Lang-si	Shanghai
126. Lisin Accounting School	Pan Hsu-lun	Peipei, Chungking
127. Soochow School of Fine Arts	Yen Wen-liang	Shanghai
128. Mingsien Agricultural and Industrial College	Chia Lin-ping	Chintang, Szechwan
129. Chungking Methodist Commercial College	Yang Chung-hsi	Chungking
130. Northwest School of Pharmacy	Hsueh Tao-wu	Sian, Shensi
131. English Language School of Shanghai	Chin Wei-cheng	Shanghai
132. West China Industrial and Commercial Technical College	Hu Chung-shih	Chungking

NOTE:—The above list does not include the Central Political Institute, South Hot Springs near Chungking, of which Generalissimo Chiang Kai-shek is president.

SECONDARY EDUCATION

Progress has also been made in secondary education. The number of secondary educational institutions was given at 2,819 by the Ministry of Education for 1941-42. This shows a considerable increase over the previous years: 1,896 schools from August, 1937 to July, 1938; 1,814 schools from August, 1938 to July, 1939; 2,288 schools from August, 1939 to July, 1940; and 2,483 schools from August, 1940 to July, 1941.

The term "secondary education" includes three kinds of schools—ordinary middle schools, normal schools and vocational schools. The term "middle school" includes both junior and senior grades. According to their nature and sources of income, middle and vocational schools are of two kinds: public and private. The public schools may be national, provincial, municipal or county (*hsien*). Normal schools are all public.

Of the 2,819 secondary educational institutions, 56 are national. They include the First to the Eighteenth

National Middle Schools, the National Northeast Middle School, National Suiyuan Middle School, two middle schools in the border regions, three middle schools for overseas Chinese students; two normal schools in the interior, 11 in the border regions and another two for overseas Chinese students; 10 vocational schools in the interior and six for the border regions together with a special training class for technicians. In addition to these, the Ministry of Education has instructed the provincial education commissions to establish provisional middle schools for the accommodation of middle school students and teachers from war zones. Then there are middle schools attached to national institutions of higher learning. All counted, national secondary educational institutions and those under the direct control of the Ministry number well over 70. All other institutions are provincial, municipal, county and private. In the list of private institutions are 250 Christian middle schools. Of the total, 2,168 are middle schools, 374 normal schools and 287 vocational schools.

HISTORY OF SECONDARY EDUCATION

In olden days, education in China consisted of two grades, higher and lower. It was not until the 23rd year of Emperor Kwang Hsu (1897) of the Manchu Dynasty that the intermediate gap was filled. This was effected by the establishment of the *Nan Yang* (South Seas) *Kung Hsueh* which consisted of the higher, middle and lower departments. In the following year, the term "middle school" was included in a set of regulations governing the establishment of educational institutions. These were revised and amended four years later when a four-year term for middle schools was stipulated. Courses on industries were added to the curriculum during the third and fourth years. Normal schools were attached to middle schools. In the following year, the term of study in middle schools was prolonged to five years. Elementary normal schools, agricultural, industrial and commercial vocational schools of the secondary grade which likewise gave five-year courses, were established.

According to the regulations governing the conduct of normal schools, girls were not admitted. This exclusion clause, however, was abolished with the establishment of the Peiyang Women's Normal School in the 31st year of Emperor Kwang Hsu (1905). This was followed by the promulgation in 1907 of a set of regulations on normal education for women.

The first year of the Chinese Republic, 1912, saw the reform and revision of the secondary education system whereby the school-term for middle schools was changed back to four years while all normal schools with a five-year course were put under the control of provincial governments. Regulations concerning the establishment of middle and normal schools for girls were promulgated. Normal schools for men provided special training classes for primary school teachers while those for women included in their curriculum courses on nursing. A four-year course of study was instituted in vocational schools.

Secondary education was again revised in 1922. The revised regulations stipulated a six-year course for middle schools and normal schools. The middle schools were divided into junior and senior grades, each of three years. Junior middle schools could be established independently, but combined junior-senior middle schools were declared

preferable. Senior schools could offer courses in agriculture, industries and commerce.

After the founding of the National Government in Nanking in 1928, the system of secondary education underwent another modification whereby equal emphasis was laid on arts and sciences. Every encouragement was given to the establishment of lower and higher agricultural, industrial vocational schools by provincial governments. Effective from 1931, all ordinary middle schools had to include courses on vocational education while many *hsien* middle schools were changed into vocational or rural normal schools.

By July 7, 1937, China had 3,264 secondary educational institutions of which 1,296 were in areas now occupied by the enemy. The pre-war institutions of secondary education included 1,958 middle schools, 814 normal schools and 494 vocational schools.

IMPROVEMENTS IN MIDDLE SCHOOLS

To overcome the loss in number and to meet wartime needs, the Ministry of Education has endeavored to improve the system of secondary education in Free China. In the past, there was no comprehensive plan for the regional distribution of institutions of secondary education. As a result, some provinces, especially those along the coast, were crowded with schools while interior provinces were badly in need of them. To remedy the situation, the Ministry promulgated regulations in 1938 for the distribution of institutions. According to these, each province was divided into middle, normal and vocational school districts.

The middle school districts were created in accordance with population, financial condition, cultural level and communication facilities. The schools in each district were ordered to organize secondary education research committees to study educational problems. So far, such school districts have been organized in the provinces of Szechwan, Kwangsi, Kweichow, Chinghai, and Ningsia.

Improvements were made in administration of the middle schools and in their curriculum with respect to wartime needs. The contents of the textbooks or the courses in citizenship, Chinese language, history and geography were considerably modified to fit actual conditions, and instructive passages were selected from the teachings of Dr. Sun Yat-sen and other great leaders.

It was resolved at the Third Educational Conference in 1938 that the four categorical virtues of propriety, righteousness, integrity and self-respect, should be made in all schools the four commandments for character cultivation. At the beginning of the school year of 1938 the Ministry of Education promulgated an *Outline on Character Education*. The tutorial system was introduced in the same year to promote character cultivation in all secondary educational institutions.

Teachers' summer research sessions, started in 1934, have continued to help improve the teaching staff of secondary schools. Various aspects of secondary education are discussed and research conducted with the heads of provincial education commissions acting as chairmen. Examinations for teachers are also held during these sessions.

All students are required to take military training and to attend training camps for three months every summer.

NORMAL SCHOOLS

The 374 normal schools in Free China may be classified into normal schools, simplified normal schools, normal schools for kindergarten teachers, village normal schools, and simplified village normal schools, besides short-term teachers' classes. All schools give a three-year course except those for kindergarten teachers which operate on a two-or-three-year term while short-term teachers' classes require only one year. For ordinary normal schools, only graduates from junior middle schools are eligible, while graduates from higher primary schools may be admitted to simplified normal schools. Aside from the 15 national normal schools, they are all financed by provincial, municipal or *hsien* governments.

Normal school districts were marked out in the provinces, with one normal school for men and one for women in each. The creation of normal school districts was set forth in the program of normal education adopted by the National Government after the outbreak of war as follows:

- (1) The normal school districts should be demarcated in 1938. Each district should establish at least one normal school or one village normal school. In case the district is unable to establish a girls' normal school, a girls' department should be

opened in its normal school for men. Simplified normal schools and simplified village normal schools should be established jointly by the *hsien* governments of the district. The number of schools, classes, teachers and students as well as their registration should be calculated by the various provincial education commissions concerned.

- (2) Normal schools should be institutions providing guidance and assistance to the primary school teachers within the normal school districts.
- (3) Primary school teachers should be given periodical guidance, correspondence and research opportunities by their controlling educational authorities in order that they may find chances for improvement, and summer sessions for research and conference should be conducted by the normal schools in each normal school district.
- (4) Normal school students should be given concentrated training, the expenses for which should be borne by the Government. After graduation they should be required to serve in the schools for a period of three years at designated localities.

VOCATIONAL SCHOOLS

The number of vocational schools estimated at 494 in 1936-37 registered an abrupt drop to 292 in 1937-38 and to 256 in 1938-39. The efforts of the Ministry of Education for the promotion of vocational education bore fruit in the academic year of 1940-41 when the number of 332 was reached.

A special plan was mapped out by the Ministry in November, 1938, whereby Free China was divided into three vocational school districts, namely, Szechwan-Sikang, Northwest and Southwest. One or more national technical colleges have been established in each of these districts as nuclei of technical and vocational education. In the provinces, vocational schools are being established in places where they can cooperate with local factories, experimental farms or agricultural stations and other plants.

Emphasis has also been laid on the establishment of junior vocational schools in interior cities. A number of such institutions were first established by the

Ministry in Kweichow, Kwangsi, Kansu, Chinghai and Ningsia and then turned over to local educational authorities. Each province emphasizes certain branches of training, namely, brewery, pottery, leather-tanning and sericulture in Szechwan; sugar-manufacturing, tea processing, papermaking and weaving in Kiangsi; pottery and woollen weaving in Kansu; cotton spinning and weaving in Shensi; agriculture in Kweichow; paper and lacquer manufacturing in Fukien and small industries in Shansi and Kwangsi. The Ministry also ordered that *hsien* graduating more than 200 primary school students each year should establish a junior vocational school independently or in cooperation with neighboring counties.

Special short courses are also conducted to meet urgent demands for skilled tradesmen. The first wartime short-term vocational class was the tele-communications and automobile mechanics' training class maintained by the Ministry of Communications in 1938. In 1939-40, 36 classes were conducted for 1,300 students in land survey, civil engineering, dyeing and weaving, leather-tanning, printing, and processing of agricultural products. Twenty-three classes with an enlarged curriculum embracing pottery, industrial and business management were conducted for 800 students in 1940-41.

Productive education courses are also included in middle schools. In junior middle schools courses are given on wood-working, gardening and elementary

agriculture. In senior middle schools, students are taught foundry, blacksmithery, hydraulics and related subjects.

As supplementary training for factory workers, the Ministry of Education, in cooperation with the Ministry of Economic Affairs, ordered that supplementary training classes be maintained by factories or mining concerns employing more than 300 or 500 workers. Most of the government factories and larger private concerns have complied with this order. Besides giving training to their own off-shift laborers, they have also enrolled primary school graduates who, with one to three years of training, may become foremen and skilled workers.

SECONDARY EDUCATION FINANCES

The annual expenditures of secondary educational institutions, national, provincial, municipal and district, show a steady increase during the war years. The amount reported for 1936 was \$46,561,868. This was decreased to \$30,396,758 in 1937 since when the figures have gone upward to \$34,647,885 in 1938, \$44,889,288 in 1939 and \$64,356,462 in 1940. This increase can be attributed to the ever-rising cost of living and the increase in the number of national secondary educational institutions whereas before the war no national middle schools were in existence. The annual expenditures of secondary educational institutions during the period 1936 to 1940 are shown in the following table:

Year	Institutions	Annual Expenditure	Total
1936	Middle Schools	\$29,935,112	\$46,561,868
	Normal Schools	8,897,029	
	Vocational Schools	7,729,727	
1937	Middle Schools	20,866,634	30,396,758
	Normal Schools	5,313,267	
	Vocational Schools	4,217,857	
1938	Middle Schools	24,615,400	34,647,885
	Normal Schools	5,691,929	
	Vocational Schools	4,340,556	
1939	Middle Schools	32,027,520	44,889,288
	Normal Schools	7,397,214	
	Vocational Schools	5,464,554	
1940	Middle Schools	43,984,272	64,356,462
	Normal Schools	11,101,958	
	Vocational Schools	9,270,232	
TOTAL			\$220,852,261

Appropriations from the National Treasury in 1936 were limited to subsidies for vocational schools with good records to cover their expenses for increasing equipment and technical teaching staff. With the founding of national secondary educational institutions, funds appropriated from the National Treasury have been increasing each year. The funds consist of the total amount of current expenses of national institutions (part as living allowances for the students) grants and special scholarships for normal and vocational schools and scholarship loans for students from war zones. In 1940, a total of \$8,736,539 was appropriated.

Appropriations in the form of grants and scholarships to normal and vocational schools in 1941 totalled \$4,200,000. Of this, \$3,000,000 went to normal schools and the remaining \$1,200,000 to vocational schools. The sum for normal schools is used for the following purposes:

Purpose	Amount
Equipment	\$ 500,000
Scholarships	300,000
Food Allowances	2,000,000
Teachers' Allowances	100,000
Normal Education Movement	100,000
TOTAL	\$3,000,000

The amount appropriated to vocational schools is used for the following purposes:

Purpose	Amount
Equipment	\$ 580,000
Production...	180,000
Teachers' Allowances	180,000
Field Practice	100,000
Textbooks	70,000
Scholarships	30,000
Research	60,000
TOTAL	\$1,200,000

NUMBER OF STUDENTS

The number of students of secondary educational institutions of all descriptions has also shown some increase over pre-war years. The figure for 1936 was given at 583,363, including 454,380 middle school students, 76,879 normal school students and 52,104 vocational school students. This was increased to 622,803 in the academic year of 1939-40 which was distributed in the various kinds of secondary educational institutions as follows:—

Institutions	No. of Students	Total
MIDDLE SCHOOLS		
Senior Middle Schools	96,214	
Junior Middle Schools	428,181	524,395
NORMAL SCHOOLS—		
Normal Schools	17,597	
Village Normal Schools	2,163	
Simplified Normal Schools	23,900	
Simplified Village Normal Schools	15,771	59,431
VOCATIONAL SCHOOLS—		
Higher Vocational Schools	2,917	
Agriculture	7,883	
Industries	3,393	
Commerce	2,754	
Home Industries	340	17,287
Others		
LOWER VOCATIONAL SCHOOLS		
Agriculture	8,495	
Industries	5,521	
Commerce	4,449	
Home Industries	3,111	
Others	111	21,687
GRAND TOTAL		622,800

NUMBER OF GRADUATES
The number of graduates from secondary educational institutions for the academic year of 1939-40 is given by the Ministry of Education at 82,407 as shown in the following table:

Institutions	No. of Graduates	Total
MIDDLE SCHOOLS—		
Senior Middle Schools	11,763	
Junior Middle Schools	52,522	64,285
NORMAL SCHOOLS—		
Normal Schools	4,876	
Village Normal Schools	635	
Simplified Normal Schools	5,368	
Simplified Village Normal Schools	1,599	12,478
VOCATIONAL SCHOOLS—		
Higher Vocational Schools	2,411	
Lower Vocational Schools	3,233	5,644
GRAND TOTAL		82,407

PRIMARY EDUCATION

In primary education, emphasis has been laid on anti-illiteracy work. This was seriously begun in the summer of 1935 when a five-year plan for compulsory education was adopted by the National Government, effective from 1935 to 1939, inclusive. At the end of the five-year period, it was expected that more than 40 per cent of the entire number of illiterate children would have received compulsory education for one year. Following this, it was planned that a four-year program, 1940 to 1943, inclusive, would be enforced during which 80 per cent of the children of the entire country would receive two years of compulsory education. Beginning from 1944, another four-year program was to be launched and it was expected that illiteracy would be wiped out by the end of 1949.

According to this plan, the Central Government, provincial, municipal and hsien governments were to cooperate in making appropriations for the rising expenditures of the primary schools. In 1935, 25,901 part-time schools and 35,175 ordinary six-year primary schools

were established with 11,974 supplementary classes attached to the former. To the existing schools, 211 grades were added with 775 two-division elementary classes attached. In addition, there were 129 simplified primary schools, 11 groups of visiting teachers and students and more than 3,481,930 pupils.

In 1936, 38,117 part-time schools and 13,267 ordinary primary schools were established with 21,444 part-time supplementary classes and 1,916 two-division classes attached. In addition, 161 simplified primary schools were founded; 736 groups of visiting teachers and 4,405,291 pupils were added. The sum total of primary school attendance in 1936 was 21,433,334.

The outbreak of the war in July, 1937, made it impossible to carry out the five-year program of compulsory education as originally planned. This accounted for the drop in primary school attendance to 12,847,924 in the academic year of 1937-38. The numbers of primary schools, teachers and staff, pupils, graduates and annual appropriations during 1937-38, 1938-39 and 1939-40 are shown in the following table:

PRIMARY EDUCATION STATISTICS

Year	No. of Schools	No. of Teachers and Staff	No. of Pupils	No. of Graduates	Annual Appropriations
1937-38	229,911	482,160	12,847,924	2,497,378	73,444,593
1938-39	217,394	432,630	12,281,837	2,733,846	64,932,910
1939-40	218,758	427,454	12,669,976	3,027,885	65,870,491

Source:—Reported by the Statistical Office of the Ministry of Education.

By July, 1941, there were 232,145 primary schools with an enrolment of 22,424,884 pupils. The increase was due to the promotion of the people's education program adopted by the Ministry of Education in 1940 which is described in the next section. This program called for the establishment of *hsiang* or *chen* (nucleus) schools and *pao* people's schools. Of the total of 232,145 schools in 1941, *hsiang* or *chen* schools numbered 18,510 and *pao* schools numbered 138,073.

PEOPLE'S EDUCATION

The five-year plan for people's education was promulgated at the National Conference on People's Education held under the auspices of the Ministry of Education in March, 1940. According to the plan, the program was to begin in August, 1940 and end in July, 1945. The program calls for the establishment during the first year of one nucleus school for each *hsiang* or *chen* and one people's school for every three *pao*. [Each *pao* consists of six to 15 *chia* and each *chia* consists of six to 15 families. That means a *pao* consists of 100 to 150 families. Six to 15 *pao* make a *hsiang* (town) or a (village) *chen* so that by the end of one year (July, 1941), 65 per cent of the children of school age (between 6 and 15) and more than 30 per cent of the illiterate adults, ranging in age from 15 to 45, should be in school. Each year, the number of schools and their enrolment are to be gradually increased so that after the program enters into its fifth and last year in August, 1944, there will be one people's school for each *pao* and the entire remaining illiterate population, children and adults, should be in school.

Statistics of the Ministry of Education show that in 1938 China's illiterate population totalled 360,000,000. Of this number, 40,050,000, were children below six years, 74,250,000 children of school age (6 to 15), 79,430,000 people above 45 and 1,570,000 dumb, deaf, crippled or insane persons. The number of illiterate people within the age bracket of 15 and 45 is thus reduced to 165,000,000. Since 1938, however, 46,348,469 illiterates have been educated. Of this number, 44 per cent were children and 56 per cent were adults between 15 and 45. By August, 1940, when the five-year program was launched, the number of illiterate adults between 15 and 45 to receive schooling was

approximately 140,000,000 and that of children between 6 and 15, 53,101,531.

Regarding finances, Central Government subsidies for the people's education program, according to the plan adopted at the conference, total \$32,000,000 for the first year (August, 1940 to July, 1941), \$56,000,000 for the second, \$64,000,000 for the third, \$80,000,000 for the fourth and \$70,000,000 for the fifth and last year.

Detailed measures for executing the people's education program were further devised at a meeting of the People's Education Promotion Committee held under the auspices of the Ministry of Education on April 13, 1941. The committee was organized by the Ministry of Education. It consists of two members each of the People's Political Council, the Legislative Yuan and the Finance Committee of the Supreme National Defense Council.

Problems discussed at the meeting concerned finances, personnel, treatment of teachers and effective management of the *hsiang* or *chen* and *pao* schools. Concerning finances, it was decided to adhere to the original plan and ask the Central Government to make appropriations accordingly. The meeting also agreed that the principals of the *hsiang* or *chen* and *pao* schools should concurrently serve as *hsiang chang* or *chen chang* and *pao chang*, respectively, instead of vice-versa. Wherever finances permit, the posts of *hsiang chang* or *chen chang* and *pao chang* and principals of the schools should be held by different persons. To assure effective administration of the schools, it was decided to hold periodical examinations of the school personnel so that rewards and punishment may be given.

To improve the treatment of teachers, it was urged that due consideration be given to the cost of living in different localities. Besides the regular salary, it was suggested that the teachers should be given an allowance for rice or lodging or both, according to local conditions.

NUMBER OF SCHOOLS

At present, there are a total of 27,855 *hsiang* or *chen* nucleus schools and 194,646 *pao* people's schools. Of these, 7,887 *hsiang* or *chen* nucleus schools and 52,642 *pao* people's schools were established in 1942 which marked the extension of the people's education movement to the provinces of Chinghai, Sinkiang and Sikang. The 19,768 *hsiang* or *chen* nucleus schools and 142,004 *pao* people's

schools reported at the end of 1941 (Chungking) and 15 Free China provinces were distributed in one municipality as follows:—

Provinces & Municipality	No. of Nucleus Schools	No. of People's Schools
Szechwan	3,709	27,828
Kweichow	609	803
Yunnan	1,011	8,328
Kwangsi	2,163	18,534
Kwangtung	1,664	13,689
Fukien	2,318	8,599
Chekiang	1,291	7,031
Kiangsi	900	3,035
Hunan	1,603	18,819
Hupei	466	8,467
Honan	1,589	14,851
Shensi	502	4,000
Kansu	532	2,492
Chungking	26	35
Anhwei	1,336	5,106
Ningsia	49	387
TOTAL	19,768	142,004

SOCIAL EDUCATION

The work of social education overlaps with that of people's education in that it also aims at wiping out illiteracy. It must enable the people to read and write, to have a general knowledge of rural and city life; and it must teach them to control themselves, how to promote public life, and how to be informed on national and international affairs. Adult schools, folk reading centers, public playgrounds and other physical education facilities, phonetic classes, general, commercial and industrial continuation schools, schools for the blind and the deaf, reformatory schools, asylums for orphans and destitute children, museums, art galleries, schools of music and dramatic arts, theaters, cinemas, music clubs, educational films, broadcasts, circuit carts and troupes, libraries and "people's readers," are all means to realize this end.

The number of groups, organizations and institutions engaged in the dissemination of social education, according to the Ministry of Education, totalled 163,767 in 1941. No up-to-date figures are available as to the number of students or persons benefited. Statistics released for the academic year of 1939-40 gave the number of students at 5,690,591. This was an underestimation including only

those who attended schools, classes or other social education institutions. Social education seeks to enlighten through its varied vehicles the entire population except those who are already in regular institutions of higher, secondary and primary education. The task of social education, therefore, is at once a tremendous and expensive one.

ADMINISTRATIVE ORGANIZATIONS

Directing the work of social education in China is the Department of Social Education of the Ministry of Education which has under its supervision five committees on physical education, musical education, visual education, promotion of the phonetic system, and fine arts.

For the promotion of social education in the provinces, the Ministry has ordered that a special section to deal with the matter be attached to every provincial education commission. Up to 1941, the provinces of Hupei, Shensi, Kweichow, Kiangsi, Chekiang, Kwangtung, Shansi, Kansu, Yunnan, Kwangsi, Fukien and Szechwan had complied with this order. In the provinces of Chinghai, Sikang, Shantung, Honan, Anhwei, Chahar, Hunan, Ningsia, Hopei and Suiyuan and the municipality of Chungking, social education has been

included as an important aspect of work though no special section has been created.

VEHICLES OF SOCIAL EDUCATION

Among the 153,667 social education organizations and institutions, those under the direct control and supervision of the Ministry of Education include the National Peiping Library, National Central Library, National Peiping Palace Museum, National Central Museum, Museums of Historical Relics, National Conservatory of Music, two Social Education Service Corps, five Circuit Dramatic Troupes, a Circuit Singing Corps, a Mass Education Circuit Cart and the Experi-

mental Mass Education Institute at Chingmukwan.

In the provinces, there are provincial mass education institutes, libraries and public playgrounds or gymnasiums. Many of them also have museums, art galleries and science institutes. Under provincial education commissions are visual education departments, motion picture studios and circuit corps as well as circuit singing and dramatic troupes. Each *hsien* also has one or more mass education institutes and, wherever finances permit, a library, a public playground and a museum. The various vehicles for the dissemination of social education are described in the following table:

Organizations	Total
Mass Education Institutes	959
Newspaper Reading Rooms	36,503
Organizations with Radio Receiving Sets	868
Folk Lecture Halls	6,574
Libraries	894
Science Institutes	35
Art Galleries	39
Museums	35
Museums of Historical Relics	46
Public Playgrounds	1,658
Music Clubs	397
Folk Reading Centers	7,966
Institutes for Orphans and Poor Children	126
Institutes for the Blind and Deaf—Mutes	14
Reformatory Schools	6
Social Education Personnel Training Centers	94
Theaters, Cinemas and other Amusement Centers	358
People's Tea Houses	2,392
Public Parks	587
Mass Education Experiment Districts	123
Circuit Education Film Districts	50
Radio Education Advisory Districts	46
Social Education Service Corps	86
Circuit Dramatic Troupes	49
Mass Education Circuit Carts	8
Experimental Circuit Singing Corps	1
Mass Education Schools	77,652
All Kinds of Supplementary Schools	428
Schools of Dramatic Arts	5
Phonetics Training Schools and Classes	123
Physical Training Centers and Classes	48
Theatrical and Big-Drum Entertainers Training Centers and Classes	7
Others	15,496
GRAND TOTAL	153,667

The Experimental Mass Education Institute at Chingmukwan of the Ministry of Education serves as the model and demonstration center for all the 959 institutes throughout the country. These are distributed in one municipality (Chungking) and 18 provinces as follows:

Provinces and Municipality	No. of Institutes
Chungking	1
Szechwan	138
Sikang	30
Yunnan	60
Kweichow	85
Shansi	5
Chinghai	11
Kansu	59
Shensi	51
Sinkiang	1
Honan	65
Hunan	80
Hupei	86
Kwangtung	75
Kiangsi	49
Anhwei	41
Chekiang	93
Ningsia	5
Shantung	4
TOTAL	959

Before the war, there was only one national library, namely, the National Peiping Library while the National Central Library was being planned in Nanking. Provincial, municipal and *hsien* libraries totalled 1,836. Now, part of the National Peiping Library remains in Peiping while the other part has been removed to Kunming where it cooperates with the library of the Southwest Associated University. The preparatory office for the National Central Library was transferred to Peisa, Szechwan, where the library is now open to the public. A branch library was opened in Chungking in February, 1941. The National Central Library has a staff of 61 persons. Annual expenses amount to \$165,200. The library has 43,947 volumes of books. The National Peiping Library has a staff of 92 persons, spends \$232,000 annually and has more than 500,000 volumes of books.

The 892 other libraries are distributed in 19 provinces and one municipality (Chungking) as follows:—

Provinces and Municipality	No. of Libraries
Chekiang	82
Anhwei	1
Kiangsi	51
Hupei	16
Hunan	64
Szechwan	109
Sikang	4
Kansu	3
Chinghai	12
Fukien	45
Kwangtung	85
Kwangsi	69
Yunnan	178
Kweichow	28
Ningsia	1
Shansi	44
Honan	57
Shensi	37
Sinkiang	4
Chungking	2
TOTAL	892

Preparations for the establishment of the National Central Museum were started in April, 1933 and were nearing completion in 1937. The museum was to be built at the site of the Ming Mausoleum in Nanking. After the war began the museum's treasures, archives and documents were safely removed to Nansi, Szechwan. Its budget for 1941 was estimated at \$33,600.

In the provinces, municipalities and *hsien*, prior to the war, there were more than 80 museums. Many of these have been destroyed, looted or occupied by the enemy so that only 35 are left in Free China. Of these, 18 are attached to government or public organizations.

Thirty-five science institutes were established in the provinces of Kwangtung, Hupei, Yunnan, Hopei, Sikang, Ningsia, Suiyuan, Shansi, Kansu, Fukien, Anhwei, Chekiang, Shensi, Kwangsi, Hunan, Szechwan and Kiangsi and the municipality of Chungking following the promulgation of organic regulations by the Ministry of Education

in February, 1941. Later the Ministry circulated orders urging that by the end of 1942 at least one science institute must have been established in each province or municipality. The functions of the institutes, as set forth in regulations adopted by the Ministry, are fourfold: (1) to popularize scientific knowledge among the people, (2) to supplement scientific education in schools, (3) to provide answers and solutions for scientific problems and difficulties, (4) to study and conduct research in natural sciences.

DRAMA AS MEDIUM

Considerable emphasis has been paid by the Ministry of Education on drama as an effective vehicle of social education. In 1938 and 1939, the Ministry organized four circuit dramatic troupes which have since performed in the provinces of Honan, Hupeh, Hunan, Kwangsi, Chekiang, Fukien, Kwangtung, Kiangsi, Szechwan, Kweichow, Yunnan, Sikang, Shensi, Kansu, Ningsia and Chinghai. Besides dramatic performances, these troupes spread enlightenment among the masses through singing, drawing and other arts. They also give lectures and conduct training classes in modern drama. An experimental dramatic troupe was organized in May, 1941, which has as its working sphere the neighborhood of Chungking.

Two of the drama schools are national, the National Academy of Dramatic Arts in Kiangsi, Szechwan, and the National School of Musical Drama in Chungking. The former, which was first established in Nanking in 1936, was promoted to the status of a technical college in July, 1940, by order of the Ministry of Education. The National School of Musical Drama was formerly located in Tsinan, being a provincial institution of Shantung. Since its removal to Szechwan, it has received a monthly grant of \$2,000 from the Ministry. This was increased to \$5,000, with the change of its status from a provincial to a national institution, effective from January, 1941.

On December 20, 1940, the Ministry circulated orders urging all grades of national educational institutions to organize singing and dramatic troupes through which the students might use their spare time to spread social education. More than 22 schools have complied with this order.

For the extension of the social-education-through-drama movement to the provinces and municipalities, the

Ministry in April, 1939, promulgated organic regulations of circuit dramatic and singing troupes for all provincial and municipal governments. In June, 1940, the Ministry outlined the work for the promotion of dramatic and musical education for the provincial education commissions and municipal education bureaus as follows: (1) a special staff member should be assigned to look after affairs concerning the promotion of drama as a medium of social education, (2) drama personnel should be trained, (3) each commission or bureau should organize at least one circuit dramatic and singing troupe, (4) mass education institutes should cooperate with local schools or public bodies in the drama movement, (5) schools of or above the secondary grades should organize dramatic and singing troupes, (6) plays and books on drama should be written and (7) inspectors should take note of the achievements made in dramatic education in schools. To date, 18 Free China provinces and the municipality of Chungking have adopted this program.

MUSIC AND FINE ARTS

The Committee on Musical Education of the Ministry of Education at a meeting in April, 1941, resolved that there should be a special department of music in all national normal colleges and designated April 5, legendary birthday of Huang Ti, the first emperor of prehistoric China, as Music Day.

For the training of musical personnel, the Ministry established the National Conservatory of Music in the autumn of 1940. A special training class was conducted by the conservatory during the summer of 1941 at which 44 persons chosen from among teachers of music in provincial and municipal normal middle and primary schools and mass education institutes by the various provincial education commissions and municipal education bureaus concerned, took a five-week course.

The Ministry of Education in January, 1941, organized a Committee on Education in Fine Arts. Its activities during the past two years are summarized as follows:—

1. The sponsorship of art exhibitions: The committee sponsored and supervised five art exhibitions in 1941. The first was held by the China National Art Society on January 1, 1941, at which, more than 1,000 paintings and other

fine arts productions were exhibited. The second was held on International Women's Day, March 18, also by the China National Art Society. Fifty per cent of the proceeds of the exhibition were contributed to the comforting of troops. A children's art exhibition was held on April 4 to 6, 1941, to mark the celebration of Children's Day in Chungking at which 1,700 pieces done by school children below 15 were on display. Nutrition was the theme of an exhibition held by the National Health Administration on May 5, 1941. From November 12 to 18 an exhibition was held in the Chungking Branch of the National Central Library as a part of a publicity week for the promotion of social education.

In addition, the Ministry of Education also sponsored the Third National Art Exhibition held from December 25, 1942 to January 10, 1943 at the Chungking branch of the National Central Library.

2. The supervision of the work of art galleries: Before the war, China had 58 art galleries. Since then, many of them in enemy-occupied territory have been destroyed, looted or occupied by the invaders. The work of the remaining 30 art galleries in Free China is under the close supervision of the committee.

3. The production of works of fine arts: Productions completed by the committee include portraits of Dr. Sun Yat-sen, Generalissimo Chiang Kai-shek and Chairman Lin Sen, a painting on orphan relief, a painting of refugees, a painting on the Changsha Victory, a painting on the martyrdom of General Chang Tze-chung, a kneeling image of Wang Ching-wei, the traitor.

RADIO AND MOTION PICTURES

Realizing the importance of radio broadcasting and motion pictures as means of social education, the Ministry of Education started its efforts in 1936 to popularize these two mediums. In May of that year, arrangements were completed with the Central Broadcasting Administration to insert in its schedule a program on education. The following month, an order was circulated to provincial education commissions and municipal education bureaus to instal radio receiving sets in all secondary educational institutions and mass education institutes. In July, a radio personnel training class was conducted to which all municipalities and provinces sent students.

The Ministry's Committee on Visual Education was organized in July, 1936. The committee has worked in close cooperation with the Central Movie Studio and the China Motion Picture Corporation of the Political Training Board of the National Military Council. It has produced many educational pictures independently or with the help of the two motion picture concerns. Among these are a series of films showing Chinese industrial ingenuity such as "Cotton of the Sungkai District of Szechwan," "Bristles," "Tea," "Charcoal Burner," "Vegetable Oil" and "Synthetics for Gasoline". Other movies produced by the committee include "The Second Generation" (describing activities in orphanages), "Land Reclamation by Refugees," "Banknotes" and "World Trends." A series of lantern slides has been produced depicting episodes of patriotism from ancient Chinese history, "Wen Tien-hsiang," "Shih Ko-fa" and "Cheng Cheng-kung" patriots of the declining Ming Dynasty, "Emperor Yu Controlling the Flood," "Ancient China before Huang Ti" and a picture on Sikang.

With a view to popularizing visual education on a nationwide scale, the Ministry has ordered the establishment of visual education departments by all provincial governments. Szechwan was the first province to carry out this order. Its visual education department, affiliated with the Education Commission of the provincial government, has to date turned out scores of films of highly instructive value. Other provinces that have complied with the Ministry's instructions are Kiangsi, Hunan, Shensi, Kwangsi, Sikang, Chekiang, Fukien, Kansu, Honan, Hupeh, Kwangtung, Yunnan, Kweichow and Anhwei and the municipality of Chungking.

Pioneer in the field of educational cinematography in China is the Science College of the University of Nanking which first introduced visual education to Chinese masses and students by 16 millimeter educational films in 1930. In 1934 it established a department of educational cinematography to make its own films. To date, scores of educational films covering a variety of subjects have been produced and released by the department, benefiting hundreds of thousands of people in all walks of life.

A further stage of progress in the promotion of educational cinematography was made by the Science College in 1938 when a visual education institute was

organized. The institute, which offers a two-year course, graduated its first class of eight students in the summer of 1940. Ten were graduated in the summer of 1941 and 16 in the summer of 1942. These graduates are now serving in visual education departments of provincial education commissions and municipal education bureaus and in schools where they promote cinematography as an effective medium of social education.

PHONETIC SYSTEM

The Committee for the Promotion of a Phonetic System of the Ministry of Education aims at the unification of the Chinese language through the use of phonetics. This work became especially significant with the launching of the people's education program in 1940 for the elimination of illiteracy in China.

On November 1, 1940, the committee began publication once every three days of a folk newspaper with phonetics which both pupils in primary schools and the illiterate masses who have mastered the phonetic system in mass education schools may be able to read. The paper prints news about the war, world affairs, political developments, common-sense knowledge and folk literature in which only simple Chinese characters are used. Its present circulation is 5,000 copies, but it is hoped to bring its circulation up to the mark of one copy for every *pao* throughout the country.

In 1935, four sets of phonetic types were made by the Chung Hwa Book Company at the committee's request. These were supplied to Chinese publishing concerns so that all textbooks for primary and mass education schools carry the phonetic symbols alongside the Chinese characters. With the outbreak of war, the four sets of types were left behind in enemy-occupied territory. Two new sets were completed in August, 1941.

The first government decree on the promotion of a phonetic system in provinces, municipalities and *hsien* was issued in 1930. In November, 1940, the Ministry of Education circularized orders urging strict adherence to that decree. At the Eighth Plenary Session of the Central Executive Committee of the Kuomintang in March, 1941, a resolution was adopted calling for the popularization of the phonetic system

in pursuance of which the Ministry renewed its orders to provincial education commissions and municipal education bureaus and schools.

PHYSICAL CULTURE

Some of the major activities of the Committee on Physical Education of the Ministry of Education are: the establishment of schools and the popularization of physical education and military drill in all schools; a nation-wide program for health education; boy scout training in primary and secondary schools; a systematic study of Chinese boxing and encouragement of contests and tournaments; military drill in schools of all classes; general physical examination of all students; and the inauguration of the National Gliding Association.

At present there are 542 students majoring in physical education in colleges and universities besides those in schools of physical education. During the four-year period ending in 1941, training schools and continuation classes were opened from which 713 persons have been graduated, including 52 girls. The number of boy scouts and girl guides has now reached the figure of more than 300,000. No less than 95 per cent of Chinese military pilots are men who have received sound physical training in schools.

SOCIAL EDUCATION FINANCES

The National Government in 1928 decreed that all provincial and municipal governments should set aside 10 to 20 per cent of their educational funds for the promotion of social education. This decree was supplemented by an order issued by the Ministry of Education on April 14, 1933, that out of any new sources of educational funds created by provincial commissions of education, at least 30 per cent must be devoted to the dissemination of social education. In municipalities and *hsien* 30 to 50 per cent should be used for the same purpose.

Effective from 1936, social education expenses have been listed in the Central Government's Reconstruction Fund. The amount appropriated for social education in 1936 totalled \$1,100,000. This was increased to \$1,810,000 in 1939, and \$2,000,000 in 1940 and 1941. A further increase to \$5,000,000 was

effected in 1942. Appropriations made during the four-year period ending 1941 and their purposes are shown in the following table:—

Purposes	Accounts			
	1938	1939	1940	1941
Mass Education	\$570,000	\$1,484,000	\$860,000	\$510,000
People's Readers	50,000	100,000		
Educational Films	75,000	123,000	140,000	360,000
Radio Education	40,000	103,000	110,000	
Education on Arts			194,000	350,000
Social Affairs and Administration			262,000	330,000
Relief Facilities and Projects			434,000	450,000
TOTAL	\$735,000	\$1,810,000	\$2,000,000	\$2,000,000

The preceding list does not include appropriations to the National Peiping Library, National Social Education College, National Conservatory of Music, National Academy of Dramatic Arts, National School of Musical Drama, National Peiping Palace Museum,

National Central Library and National Central Museum.

The annual expenditures on social education of the various provinces and the municipality of Chungking during the three years of 1938, 1939 and 1940 are shown in the following table:—

Province	Annual Expenditures		
	1938	1939	1940
Chekiang	\$55,935	\$165,768	\$438,920
Anhwei			106,771
Kiangsi			207,224
Hupei	34,405	32,383	2,000,000
Hunan	86,264	99,050	unreported
Fukien	117,270	1,239,892	93,682
Kwangsi			421,367
Shensi	65,664	74,856	99,350
Shansi	328,600	270,925	unreported
Ningsia	1,107	1,107	18,357
Sikang			145,108
Kansu	7,797	56,880	61,067
Chinghai	1,275	9,545	5,658
Szechwan	122,500	254,860	unreported
Kweichow	30,028	151,216	240,017
<i>Municipality</i> Chungking			66,000

BORDER EDUCATION

Border education has as its field of work all the border regions of China inhabited by tribespeople including Mongols, Tibetans, Mohammedans, Miaos, Lolos and other tribes. The Department of Mongolian-Tibetan Education of the Ministry of Education undertakes to provide all border districts of China with modern education and

to preserve and reconstruct their cultures. Border education did not follow any systematic trend until 1939 when the Ministry for the first time defined its policy, which it modified in 1940. According to this modified policy for border education, the purpose is to unify and reconstruct the culture of the various tribes of China with equal emphasis on primary education,

citizenship training, language, vocational and hygienic training. In secondary education, special emphasis is given to the development of technical abilities and to a clear understanding of the Chinese race and nation. In higher education, attention is paid to the training of technical personnel for the reconstruction of China. In social education, international affairs, scientific and engineering fundamentals are taught.

Considerable progress in the promotion of border education has been made since the establishment of the Department of Mongolian-Tibetan Education in 1930. Border education personnel has been trained: linguistic symbols have been devised and unified; texts and reference books have been written and loans and scholarships granted.

National border educational institutions already established include one technical college, two middle schools, eleven normal schools and six vocational schools. To these should be added the Border Education School of the Central Political Institute at South Hot Springs near Chungking, while several national institutions of higher learning give courses of border culture.

Of the eleven border normal schools, two—Likiang Normal School in Yunnan

and Suining Normal School in Ningsia—were established in 1942 with an initial appropriation of \$350,000 each from the Ministry of Education. In addition, preparations were started in March, 1942, to establish the National Technical College of Eastern Languages and Culture for which Tali in Yunnan was chosen as site. Other appropriations made by the Ministry for border education in 1942 included \$270,000 for various border vocational schools and \$230,000 for four border normal schools.

The number of border educational institutions, provincial and private, prior to 1939, in various provinces, according to the Ministry, totalled 24 normal schools, three middle schools and 2,375 primary schools. Many of these, however, have been closed, amalgamated or otherwise reorganized. All the 13 primary schools in Chahar, for instance, were closed on account of the war while in Suiyuan only four of the 29 primary schools were able to resume their work. In Sikang, three of its five primary schools were incorporated into the Sikang Provincial Primary School. The number of schools and their distribution in the various provinces as reported in 1936 are shown in the following table:—

Province	Normal Schools	Middle Schools	Primary Schools
Kansu	1		55
Chinghai	1	2	143
Ningsia	2		14
Sikang	1		5
Yunnan	10		35
Kweichow	1		12
Szechwan	2		15
Hunan	2		100
Sinkiang	2		1,412
Suiyuan	1		29
Chahar			13
Kwangsi	1		541
Tibet			1
TOTAL	24	2	2,375

The regulations governing the admission of Mongolian and Tibetan students in government or recognized private institutions in the interior which have been in force for many years were recently revised by the Ministry of Education whereby their application has been widened to students from all border regions of China.

These regulations provide that students from border districts desirous of entering schools of or above the secondary grade in the interior must be recommended by the offices of the various Mongolian

banners, local official organizations in Tibet, authorities of the various national border schools or the education commissions of the provinces of Sinkiang, Chinghai, Kansu, Ningsia, Sikang and other southwestern provinces. Government or recognized private institutions of or above the secondary grades should give special favorable consideration in their entrance examinations to applicants from border districts as recommended by the various organizations. Those who fail to pass the examinations should be admitted as

auditors while those whose standing is very low may be assigned by the Ministry of Education to certain supplementary schools. Border students admitted to government schools in the interior are exempt from payment of all school fees while those in private schools pay low rates. Scholarship aids are given by the Ministry to border students with good scholastic records.

OVERSEAS CHINESE EDUCATION

For the education of students of overseas Chinese families who have come to China in large numbers, especially since the outbreak of the Pacific war, there are at present three national middle schools and two national normal schools. In addition, the Ministry of Education, in cooperation with the Overseas Chinese Affairs Commission, established a special institute for South Seas Chinese students in April, 1942.

Scattered over forty-five countries and dominions on five continents prior to the outbreak of the Pacific war were 3,231 institutions of higher, secondary and primary education for overseas Chinese students. They included one college, eight normal schools, 117 middle schools, four vocational schools, 2,477 primary schools, 93 continuation schools and 53 other schools. Government appropriations for overseas Chinese education amounted to \$200,000 in 1940 and \$1,000,000 in 1941.

Overseas Chinese youths may enter any educational institutions in China for which they qualify. Of institutions of higher learning in China, the National Chunan University has the largest enrolment of overseas Chinese, the National Sun Yat-sen University comes second, the National Amoy University third, University of Canton fourth, Kuomin University fifth, Lingnan University sixth, Yenching University seventh, and the University of Nanking eighth.

THE ACADEMIA SINICA

As the highest research organization under the National Government, the Academia Sinica, despite its limited finances, personnel and equipment, has carried on an extensive program throughout Free China. It maintains ten institutes: physics, chemistry, engineering, geology, astronomy, meteorology, zoology and botany, psychology, history and philology, and social sciences. Until July, 1937, the first three institutes were located in Shanghai, while the central office and the other seven institutes were all in Nanking. At present, the central

office is temporarily located in Chungking; the institutes of zoology and botany, meteorology, history and philology, and social sciences in two localities in Szechwan; the institutes of chemistry, astronomy and engineering in Kunming; and the institutes of physics, geology and psychology in Kweilin. The work of the various institutes during the war has been as follows:

THE INSTITUTE OF HISTORY AND PHILOLOGY

Four lines of work are carried on, namely, history, archaeology, ethnology and physical anthropology, and philology and linguistics. The institute possesses an extensive archaeological and ethnological collection, including a number of treasures, such as the tortoise inscriptions of Yin dynasty from the site of Anyang. These treasures are in a small city in Szechwan. The collection of books, anthropometric records, and linguistic records in the institute is also extensive and remains intact. The institute members work in a village in southern Szechwan.

Prof. Chen Yin-ko has completed his treatise on the political history of Tang dynasty. Lao Kau of the institute has made a study of bamboo inscriptions of the Han Dynasty found in the vicinity of the Gasliun Nor, Ningsia, and for this work he was awarded the Yang Chuan prize of the academy in 1941. Chuan Han-sen has studied the economic history of the Sung period and was awarded the Yang Chuan prize of the academy in 1942. Fu Lo-huan wrote a paper on the method of administering the various racial groups adopted by the Liao emperors. Other history section work includes the editing of historical records of the Ming Dynasty, the editing of sources of Kin history, and the compilation of a critical bibliography of the astrological works of the Han Dynasty.

In the archaeological section of the institute, excavation reports of the following sites have been completed: Hsiao T'un Tsun, Liang Chen Chen, Hou Chia Chuan, Sunhsien, Hweihhsien, Chihhsien, and Ta Shih Kung Tsun. Reports about archaeological investigations in Suiyuan, western Szechwan, and Sikang are ready for publication. Prof. Tung Cho-pin has profoundly analysed the tortoise inscriptions of Anyang and thereby obtained a possible solution of Yin chronology as well as a knowledge about the method of calendar making adopted by the Yin people. The excavation of Han tombs in Pengshan, Szechwan,

and archaeological investigation in the Northwest, especially the study of Buddhist paintings in Tunhwang grottoes, Kansu, are in progress. The latter work was taken up in collaboration with the National Central Museum. A party of three experts, consisting of Prof. Hsiang Ta of National Southwest Associated University, and Lao Kan and Shih Chang-ju of the institute left Chungking for the Northwest in April, 1942 and are still going on with their work.

In the field of anthropology, the principal items of work have been ethnological and anthropometric investigation of the Miao people of Kweichow, and the ethnological investigation of the racial groups of western Szechwan and Sikang. Reports about the measurements of the bones of the Chinese people are ready for publication.

In the field of linguistics, detailed surveys of dialects of Hupeh, Hunan, Kweichow, Kwangsi, Szechwan and Yunnan have been carried out by Prof. Li Fang-kwei and his assistants. A survey of Miao dialects, Tung dialects, and Tai dialects of Kweichow and Kwangsi was also carried out and a comparative study of Tai dialects was made. Prof. Chao Yuen-ren, who has headed the section of philology and linguistics since the founding of the institute, went to the U. S. A. in the autumn of 1938 to lecture in American universities.

The longer publications of the institute of history and philology appear in the form of treatises, monographs, and excavation reports, while the shorter ones appear in the periodical entitled *The Bulletin of the Institute of History and Philology*. The latest number of this bulletin was published in November, 1942.

THE INSTITUTE OF SOCIAL SCIENCES

The work of the institute has been concentrated along five lines: (1) the economic history of China, (2) the problems of wartime economy in China, (3) finance, currency and trade, (4) the history of army organization, and (5) public administration.

In the field of economic history of China, treatises on the history of land taxation in the Ming Dynasty, on the finances of the Ching Dynasty, and on the development of modern cotton industries are ready for publication.

The National Resources Commission asked the institute to study the problems of wartime economy. Reports written by the members of the institute include those on the fluctuation of commodity prices during wartime, on a general survey of industry and currency conditions in Free China, on the economic conditions of the occupied territories and on the estimated war losses of China.

In the field of public finances, studies on the financial relations between the central and provincial governments since the founding of the Chinese Republic, on district finances, on the finances of Yunnan, and on the provincial and district finances of Kwangsi have been completed. In 1942, in collaboration with the Ministry of Food, the institute sent a party of investigators to study on the spot the actual working of the new government regulations on (a) the payment of land tax in kind, (b) government purchasing of cereals. Studies on currency problems include an estimate of silver stock in China and investigation on the finances and cooperative undertakings in the farm villages of Chekiang province. Statistics on Sino-Japanese trade in recent years and on the interport trade of China during 1936-40 were compiled and the evolution of international trade of China was studied.

Lo Erh-kang of the institute has chosen the history of army organization in China as his special field of study. He has written a book on the history of the Hunan Army organized by Marquis Tseng Kuo-fan. His two manuscripts, one on the history of "Green Barracks" and another on the army organization during the last decades of Manchu Dynasty are also ready for publication.

In the field of public administration, a book on the relations between provincial and district administrations in Kwangsi province is near completion.

THE INSTITUTE OF ZOOLOGY AND BOTANY

The work of the institute falls under four sections: 1. Fresh-water biology, 2. Entomology and parasitology, 3. Mycology and plant pathology, and 4. Seed plants and forestry.

In the field of fresh-water biology, ichthyological surveys have been made in the provinces of Hunan, Kwangsi, Szechwan and Sikang. Food supply and feeding habits of various edible common fishes found in Szechwan were studied in the hope of increasing the fish supply

of the province. For a most valuable edible fish, *monopterus javanensis*, detailed studies on its respiratory mechanism in both the embryonic and the adult stage, its behavior, breeding habitat, and embryonic development, and on its circulatory system in the adult stage were carried out with remarkable success yielding results of particular interest. To help forward the anti-malaria campaign, a selected group of native mosquito-devouring fishes has been studied under conditions of artificial cultivation and distribution. Studies have also been made on Entomostraca, Protozoa, and fresh-water Algae.

In the field of entomology and parasitology, systematic studies have been carried out for a beetle family Chrysomelidae. Observations have been made on the life history of insects injurious to horticulture. Means of natural control of mosquito multiplication and the parasitic round worms found in domesticated and wild animals have been investigated.

In the field of mycology and plant pathology, a monograph on Chinese fungi, including about 2,000 species, was completed in 1938. Successful studies on the life history and methods of control of various fungus diseases affecting tung oil trees have been made. Experiments have been performed on the preservation of sweet potatoes, oranges and other horticultural products.

Systematic studies have been made on the umbellate and the grass families. Extensive forest survey was carried out in Sikang province for three successive years. Particular attention was laid to the preservation of natural forests. Utilization, growth rate, and fungus diseases of economic trees were carefully noted. In collaboration with the Kansu provincial government, a similar survey is now in progress in that province.

Most of the research papers of the institute appear in its own periodical "Sinensia." The 13th volume of this periodical will be published in 1943.

THE INSTITUTE OF METEOROLOGY

Since its founding, the institute has been in charge of both service work and research work. Before the Japanese invasion, with the Central Meteorological Observatory in Nanking as its base the institute had in its charge a number of weather stations and rainfall stations scattered throughout the country. After successive removals which took place after the fall of Nanking in 1937, the institute

settled down again in a town near Chungking, carrying with it a part of the equipment of the Central Meteorological Observatory. The number of instruments now in use in the temporary quarters is, of course, much less than that formerly in use in Nanking. In fact, the restarting of self-registered weather records did not begin until January, 1942.

Members of the institute have been faced with many difficulties. For instance, they realized the importance of observations of upper air wind drift; but from October, 1941 to May, 1942 only 68 balloons could be sent up, because balloons were not available.

In the autumn of 1941, the National Government inaugurated the Central Weather Bureau. The 17 weather stations and 100 rainfall stations formerly under the direction of the institute were transferred to the bureau. Henceforth the members of the institute devoted themselves to research in the science of meteorology itself, to statistical analyses of weather data, and to the climatology of China.

The papers of the institute, besides appearing in monographs and memoirs, mainly appear in the *Meteorological Magazine*, published by the Meteorological Society of China. To the latest issue of this magazine, P. K. Chang of the institute contributed an article on the climatic regions of Szechwan, and C. C. Yang contributed an article on the upper air currents over southern Szechwan.

THE INSTITUTE OF GEOLOGY

Since its removal to Kweilin, members of the institute, to meet wartime needs, have paid much attention to the mineral resources of southwestern China. In cooperation with other Chinese geological institutes, the mountainous area in western Hupeh, western Hunan, the eastern border of the Kweichow plateau, the Kwangsi Plateau and the Nanling Ranges have been explored. These are areas in which metalliferous deposits abound. Hitherto they were comparatively little known geologically owing to their highly mountainous character. With the rapid development of motor roads in these areas, field-work has been greatly facilitated. Consequently, important results have been obtained within the past few years regarding ore deposits as well as geological formations.

Ore bodies either in the form of lenticular layers or persistent veins, or

else of irregular masses have been located with respect to principal structural trend and to the alignment of igneous intrusions. They are mainly formed in the older rocks, and particularly in those of Sinian age. Tin, tungsten, gold, antimony, lead, zinc, mercury, together with iron and coal are among the principal elements being studied.

Stratigraphical, tectonic and geomorphological observations made in the mountainous areas are contributing much toward the elucidation of important geological events. Of wider scientific interest is the investigation of the extensive distribution of an ancient glacial deposit, or tillite, along the eastern border of the Kweichow plateau. This deposit can be compared, in point of time, with a similar formation well known in Scandinavia, North America and elsewhere in the world. In these same regions, but to a much greater extent "remains" of quaternary glaciations are also found. Boulder-clays with typical ice-scratched boulders occur far and wide in association with fluvio-glacial gravels and sometimes with varve clay. Along numerous ancient valleys descending from the high mountains on the edge of the Kweichow plateau, and from the high ranges of western Hupeh, western Hunan and northern Kwangsi, it is possible to trace, step by step, the distribution of the vanished glaciers. With unequivocal evidence in hand, geologists and climatologists must now find a new interpretation of the cause of glaciation.

Substantial data obtained in the course of the last few years regarding the structural elements of the country shows the importance of a mesozoic movement or movements that were responsible for the general "layout" of China. The results of investigations now fully establish the fact that the broad belt of mountainous country stretching from northern Kwangsi, past western Hunan and eastern Kweichow, continues to the Yangtze Gorge area of western Hupeh. This formidable, complex range extends farther to the north-northeast forming the eastern border of the Shansi plateau, and still further north, the Great Khingan Range running between Mongolia and Manchuria. On the eastern side of this so-called Neocathaysian up-lift lies an elongated, depressed area embracing the Manchurian plain, the North China plain and the Central Yangtze Basin. Palaeontological research by members of the institute has brought out the interesting

fact that this elongated basin of north-easterly trend was from time to time invaded by marine fauna in the geological past.

THE INSTITUTE OF PHYSICS

Up to July, 1937, the institute was located in Shanghai where it had the advantage of using modern laboratory facilities which are not all available in the interior. In 1938, the institute moved to Kunming; and then in October, 1940, it moved again to Kweilin, following a government order. Its re-establishment at Kweilin was completed only toward the end of 1941. In its temporary quarters, it has a magnetic laboratory, a radio laboratory, an observatory of terrestrial magnetism, and a machine shop. The shop was bombed by enemy planes in the summer of 1941 and suffered much damage.

The majority of members of the institute were occupied with problems which demanded immediate attention such as those of radio communication, making of permanent magnets, making of scientific apparatus, ore-prospecting by magnetic and electrical methods. A few members, however, still found time to carry out a survey of terrestrial magnetism in Fukien and Kiangsi provinces. While in Fukien, they had the opportunity of observing the magnetic disturbances during the total solar eclipse of September 21, 1941. Their findings substantiated the view that these magnetic disturbances were caused by the cutting-off of ultra-violet radiation from the sun. The survey of terrestrial magnetism in Kiangsi province will be completed in 1943, and at the same time the work will be extended to Hunan province.

In the magnetic laboratory, methods for measuring the susceptibility of minerals and rocks both in powder form and in bulk form were devised and compared in 1942. Results obtained with powders of different degrees of fineness were also compared. Measurements on the variation of magnetic constants with temperature for single crystals of nickel-cobalt alloys are now in progress.

Besides making the physical apparatus required by members of the institute for their own work, the machine shop also accepts outside orders.

THE INSTITUTE OF PSYCHOLOGY

The institute, temporarily located in Kweilin, is directed by Dr. G. H. Wang. Its principal work has been in the field

of physiological psychology, the subject taken up being the physiological analysis of the developmental behavior of the tadpole. The method adopted went farther than the parallel observation of the various stages in the development of behavior with those in the growth of the nervous system. Either a part of the central nervous system of the frog embryo or of the tadpole was destroyed by surgical operation or one of the sensory organs was cut off, and the resultant changes in the development of behavior were observed. In 1940 observations were made of the normal development of the swimming and righting reflexes of the frog (*Rana Guentheri*) and the effect produced upon this development by transection of the various parts of the central nervous system before hatching. The results of this experiment were published in the *Journal of Neurophysiology*. In 1941, the effect of strychnine and other drugs on the developing nervous system of the frog was studied. In the same year, H. T. Chu, assistant in physiology in the Army Medical College, worked in the institute and observed the ciliary movement and the circulation of the cerebro-spinal fluid in the brain ventricles of Anurans. His paper was published in the *American Journal of Physiology*. In 1942, Dr. G. H. Wang made experiments on the effect of the development of the higher nervous centers in embryo on the spinal cord. Preliminary results seemed to demonstrate that the first effect was that of inhibition. Experiments on tadpole behavior after the reconstruction of the nervous system by the method of grafting with the embryonic nervous system were started in May, 1942, the first step being to develop a grafting and feeding technique.

Since 1941, Dr. G. H. Wang has been attempting to propound a theoretical system to embrace all the reflex actions of the spinal cord as studied by Sherrington and his associates.

In the field of comparative neuro-anatomy, research has been carried out on (1) a comparative study of the septum of the forebrain, (2) structure of mesencephalon and rhombencephalon of hedgehog *Erinaceus*, (3) a kind of recurrent fibers in the cerebellar cortex of the monkey, (4) nucleus of the trapezoid body in the mammalian brain, and (5) the central nervous system of Manis. The first mentioned work was by Dr. Y. T. Lu and the last three were by H. T. Chang. The third was published in the *Journal of Comparative Neurology*

THE INSTITUTE OF ASTRONOMY

The institute was founded in 1928 but the construction and equipment of its observatory on the Purple Mountain in the suburb of Nanking were not completed until 1934. After only three years of using this equipment, the institute had to move to Kunming and lost much of the heavier equipment. Since Kunming is noted for the clearness of its sky during the dry season, it was decided to build there a small observatory which was completed in 1938. The spectrohelioscope was again set up and is used for daily observations of sunspots. A Ross camera with 4-inch objective for the study of variable stars was also set up again.

The total solar eclipse of September 21, 1941, was a rare opportunity for the Chinese astronomers. The path of the shadow swept across the country from the Northwest toward the Southeast, covering a distance of over 4,000 kilometers. A number of years ahead of the event, a plan of collaboration was organized by the institute, the National Central University, the University of Nanking, and the Institute of Physics of Academia Sinica. The exigencies of the war demanded the curtailment of the original program, and only two observation parties were sent out, one to Fukien province, and another to Kansu province. Clear sky did not greet the former party, but did greet the latter, the members of which successfully photographed the corona, determined the times of contacts, and found that the light intensity of the corona was .39 of that of the full moon. Coincidentally, it was found that the eclipse expedition made a great impression upon the populace who had formerly never realized that modern science could predict a celestial event with such precision.

On February 2, 1941, a member of the institute found the comet 1941 C. Paraskevopoulos. He made a number of observations and computed the elements of its orbit.

Dr. W. C. Tai joined the institute in the autumn of 1941 and is now engaged in theoretical astrophysics, observational work being impossible under present circumstances. In 1942, he completed two papers, one on the convective equilibrium and color temperature of stars, and the other on the analysis of some peculiar stellar spectra.

THE INSTITUTE OF CHEMISTRY

The institute is now located in Kunming where its laboratory was

completed in July, 1940, with funds partly provided by the British Indemnity Fund. Since the former director of the institute, Dr. Chuang Chang-kung, was unable to come to the interior, H. C. Zen, secretary-general of the academy for the period 1939-40, served as director. In April, 1942, Dr. Woo Sho-chow was appointed to succeed Zen.

The work of the institute falls under three headings:

- (1) Physical and inorganic chemistry,
- (2) Organic chemistry,
- (3) Applied chemistry.

Since 1933, Dr. Woo had been photographing and measuring the ultraviolet absorption spectra of gases. After coming to the interior, he found it impossible to continue this work for gases and had to shift to liquids and solutions. The results obtained from solutions made possible the detection of molecular structure and photochemical behavior of compounds in their solution state. The work was so far confined to the electronic spectra of compounds containing the carbonyl group. D. K. Liu was Dr. Woo's co-worker in this work.

D. K. Liu and H. P. Chung have carefully analysed the contents of the principal rock salt ores of Yunnan. They found no trace of iodine by ordinary methods; and if iodine is present, its amount must be less than eight parts per ten million. Sodium sulphate is present in the salt liquor to the extent of 13-22 per cent. By applying the phase rule to the system $\text{NaCl}-\text{Na}_2\text{SO}_4-\text{H}_2\text{O}$, it was found possible to separate out about three quarters of sodium sulphate by cooling the salt liquor to the neighborhood of 0°C , and then to further reduce the sodium sulphate content to 1-2 per cent by fractional crystallization. Another method of obtaining refined salt is to add calcium chloride to salt liquor so as to precipitate calcium sulphate. It had been suggested that the joint application of both methods would give the best and the most economical results. The separation of potassium sulphate and potassium chloride has also been effected. By successive crystallization, it has been found possible to obtain potassium carbonate of purity about 99 per cent, and then to obtain from the latter pure potassium chlorate and other potassium compounds. Pure chemicals used by Chinese chemists were formerly imported from abroad, and since foreign supply is now either cut off or difficult to obtain, home-made pure chemicals are now very much needed.

Dr. C. K. Chuang, former director of the institute, and his associates have made a further analysis of the Chinese drug *han feng chi*. Besides the alkaloid tetrandrin $\text{C}_{38}\text{H}_{42}\text{O}_6\text{N}_2$ which had been known already, Dr. Chuang found in this drug another alkaloid of composition $\text{C}_{30}\text{H}_{40}\text{O}_6\text{N}_2$, which he named demethyl-tetrandrin, because one OCH_3 radical of tetrandrin was replaced by an OH radical.

Dr. Huang Min-lon joined the research staff of the institute in the spring of 1941. He, Lo Chien-pen and Miss Chu Ju-yung have been engaged in organic synthesis. They have synthesized a series of symmetrically substituted azobenzenesulfonamides, devised an improved method of preparing N1-acetylsulfanilamide, described a color reaction of sulfanilamide and its derivatives containing a free amino group, and found for the sulfanilamide, albucid, uliron, neo-uliron, and dagenan (either in pure state or in tablet form) a method of identification, distinct, specific, and generally applicable, which has been called the micro-acetylation method. They have also carried out synthetic work in the santonin series, and synthesized two new desmotropo-santonins, two new desmotropo-santonous acids, and the bromination products of desmotropo-santonins and desmotropo-santonous acids.

Studies made in applied chemistry have included the purification and thermal treatment of castor oil, the preparation of phosphorus and phosphate fertilizers from the phosphate ores of Yunnan, the preparation of paper pulp from reeds and corn stalks, and the making of silicon iron from Yunnan minerals. The dehydration of castor oil has been thoroughly carried out, more than 20 sulphates and alums having been used as catalysts. With each catalyst, the iodine value of the dehydrated oil as well as its miscibility with mineral oils were determined. Experiments on low temperature distillation of Yunnan lignite have also been performed. The work in applied chemistry was directed by Dr. H. H. Wang and Dr. T. N. Chang who are now associated with industrial firms.

THE INSTITUTE OF ENGINEERING

The institute, after being moved from Shanghai to Kunming, found itself in an entirely different environment where the facilities for experimental work were inadequate. The two experimental plants of the institute, one on

glass-making and another on steel-making, were fortunately moved to Kunming with the institute itself; and work along these two lines could still be carried on. The plant for glass-making was bombed by enemy planes in September, 1940, and soon re-established itself in a village near Kunming. Although it has had to operate on a reduced scale, it has been able to furnish much glassware needed in medical service and in scientific work. Because of the lack of proper raw materials, the glass produced is inferior to that of former days.

The equipment in the experimental plant for steel-making includes a rolling mill. For supplying the wartime need of special kinds of steel, most of the equipment of the plant was loaned to a steel manufacturing plant jointly organized by the Ministry of Economic Affairs and the Yunnan provincial government. The members of the institute also lent their technical service to this plant.

In 1941, the Central Electro-technical Manufacturing Plant of the National Resources Commission asked the institute to make tungsten magnetic steel which was needed in making telephones and electric meters. The tungsten magnetic steel produced in the laboratory of the institute has been found satisfactory, being comparable in quality with the American product. The making of cobalt magnetic steel was also attempted in 1941. The cobalt ores of Yunnan were found to contain 1.5-6.7 per cent cobalt oxide. From these ores, cobalt oxide of purity above 90 per cent was prepared, the remaining impurity being mainly iron oxide. This cobalt oxide can be used as the starting material for making cobalt magnetic steel.

The material testing division of the institute has carried out an extensive series of tests on Yunnan timber, including tangential and radial shrinkage, mechanical properties, specific gravity, and moisture content. For certain selected kinds of timber, dry distillation experiments will also be carried out for the purpose of obtaining acetone, wood alcohol, and acetic acid.

THE NATIONAL RESEARCH COUNCIL

The National Research Council was organized as a part of Academia Sinica in 1935. Its function is to promote and to co-ordinate scientific research in the whole country, the word "scientific" being used in the wider sense, including

the social and historical sciences. Members of the council consist of the president of Academia Sinica, the directors of its research institutes, and thirty members elected by professors of national universities. The term of office of the elected members is 5 years. The council ordinarily meets once a year.

In 1941, the council decided to publish two journals, *Science Record* and *Bulletin of Academic Research*. The former shall contain short communications of original scientific research by Chinese scientists, the language used being English, French, or German. The latter is published in Chinese, and contains general reviews of the significant advances in various fields of study and abstracts of scientific papers by Chinese scientists and of those by foreign scientists on subjects related to China. On account of the difficulties of printing in the interior, the first number of *Bulletin of Academic Research* did not appear until December, 1942, and the first number of *Science Record* in February, 1943.

In 1941, the council recommended that the Academy organize an institute of mathematics as soon as it could be properly equipped with books and periodicals. Unfortunately, it has been impossible to obtain such equipment on account of transportation difficulties.

The Academia Sinica was founded in 1928 in Nanking with the late Dr. Tsai Yuan-pei as its president. After his death in March, 1940, the National Government appointed Dr. Chu Chia-hua acting president. During the period 1939-41, H. C. Zen and Fu Sze-nien successively served as secretary-general. The latter resigned in the autumn of 1941 and Dr. Yeh Chi-sun, professor of physics in the National Tsinghua University, was appointed to the post (to whom thanks are due for this comprehensive report of the work of the Academia Sinica).

NATIONAL ACADEMY OF PEIPING

Research projects completed by the National Academy of Peiping during the past five and a half years have greatly helped the economic reconstruction of China at war.

With the Japanese occupation of Peiping in 1937, the work of the academy, with its headquarters in that northern city, was suspended. Later, however, it succeeded in removing part of its books and equipment and in resuming a large part of its research activities in Kunming, Yunnan.

The National Academy of Peiping consists of nine institutes of physics, radium, chemistry, materia medica, physiology, zoology, botany, geology, and historical studies and archaeology. Notable achievements have been made by each of these institutes during the past five years.

Since its removal to Kunming, the Institute of Physics, whose studies were chiefly on photography, spectroscopy, piezoelectricity and geophysics, has more and more inclined to attack practical problems concerning national reconstruction and development of wartime industries.

With its spectroscopic equipment, a laboratory of spectrum analysis has been set up to meet the need of the budding metallurgical industry in this country. Some routine work was carried out and new techniques were developed.

Particularly noteworthy has been the service rendered by the institute to radio communication. Numerous radio stations both fixed and movable have been established, but almost all of them are of quite small power. The interference between them would be troublesome if they were not crystal-controlled. The institute has stabilized more than 1,000 transmitters with quartz oscillators made in its laboratories.

In addition, the institute has devoted much of its effort to the development of applied optics and geophysical prospecting. A small optical shop was set up in Kunming. Optical machines were built, testing instruments designed and craftsmen trained. After three years' painstaking work, the institute was able to produce most of the optical parts. Achromats, prisms and flats have been supplied to various institutions for educational and research purposes. Microscopes for the general usage of university students are being made for the Ministry of Education. To date, more than 200 microscopes have been completed.

In geophysics, the institute's two main undertakings have been the preparation of a gravity map of China and the precise determination of longitudes and latitudes. As its geophysicists proceeded with their work of gravity determinations throughout the province of Yunnan to the borders of Burma and Indo-China, their attention has been directed to mineral resources and to a study of effective methods of exploitation which have been immediately put into application.

The work of geophysical prospecting was concentrated on the study of metallic ore deposits. To date, five different mining districts have been thoroughly examined by the institute's geophysical field parties employing chiefly magnetic and electrical apparatus. The National Resources Commission's I-Men iron mine was the first one surveyed, the survey lasting six months. Then the An-Ning iron mine, the Lu Tien lead-silver mine, the Kochiu tin mine and, lastly, the Chaotung lignite field were successfully subjected to geophysical investigation.

The results of these studies, made at the request of the respective mining organizations concerned, have not only greatly altered the concepts of the geologists and mining engineers as to the extent and economic value of these deposits, but have also led to possible improvements in the methods of geophysical prospecting.

The Institute of Radium consists of three laboratories—chemistry, radio-activity and X-rays. In the chemistry and radio-activity laboratories a great number of Chinese minerals were examined chemically and radio-actively. Protactinium was studied and its branching ratio redetermined with counters. A detailed study of the absorption co-efficients of B-rays revealed the important fact that it is neither a fixed nor a single value, but depends on the thickness of the absorber and the surrounding conditions of the source under measurement.

In the X-rays laboratory, the work is mainly on crystal analysis. Some improvements of classical methods and techniques have been realized. With an induction furnace, some alloys of tungsten and antimony were prepared and they are being studied with X-rays.

Problems of different branches of chemistry are investigated by the Institute of Chemistry including both pure chemical research as well as research in applied chemistry. Among topics covered in the work for the past five years are: (a) Extraction of dyestuffs from local plants and their application to various textiles, (b) recovery of used engine oils, replacement of Diesel oil by vegetable oil and preparation of a gasoline substitute from molasses and saw dust, (c) analysis of water samples taken from different places in the vicinity of Kunming, (d) molecular rearrangements of organic compounds, (e) syntheses of compounds related to vitamin K, (f) derivatives of sulfanilamide,

(g) preparation of angular methyl group, (h) syntheses of rotenon derivatives.

Research work in the Institute of Materia Medica has been concentrated on the investigation of Chinese drugs, such as Chinese ephedra, *Maohuang*, Chinese corydalis, *Pei-Mu*, *Hsi-Hsin*, *Mu-Fang-Chi*, *Shih-Chan-Chu*, *Yang-Chin-Hua*, *Kou-Wen*, *Ta-Cha-Yeh*, etc. The active principles have been isolated and their constituent properties as well as the pharmacological actions have been studied. Besides, the institute also prepares some materials as ephedrine, vitamin B, etc., on a commercial scale for clinical uses.

The Institute of Physiology has undertaken research in subjects capable of application in daily life, in addition to pure academic work. Investigations on the nutritious values of foodstuffs, experiments on the treatment of chicken cholera by sulfanilamide and typhus by some Chinese medicine from the *Pen-Tsao* have been conducted with satisfactory results. Studies have also been made of the types of Chinese drugs produced in Yunnan and on the basal metabolism of the Yunnanese people.

Research conducted by the Institute of Zoology was formerly restricted to the seashore animals of China. Since its removal to Kunming, this sort of work had to be directed to the limnological fauna of Yunnan. The fauna of the Kunming Lake, the Erh-Hai, Yang-Tsung-Hai and Fu-Sian Lake become material to work on. An experimental station for lacustral biological studies was set up in 1939, under the joint auspices of the institute and the reconstruction commission of Yunnan. The station has been able to make systematic studies of the principal fresh water fauna of Yunnan, particularly the fishes of these inland lakes, their diseases and enemies, together with the chemical and physical properties of the lake waters. Besides aquatic animals, terrestrial animals like Reptilia and Spiders of Yunnan were also collected and worked on.

The work of the Institute of Botany has been concentrated on problems of economic botany since its removal to the interior. Investigations on agricultural and forestry topics, such as the distribution of forests, classification and diseases of farming plants and particularly experiments on cultivating medicinal plants have been under way.

Under the joint sponsorship of the institute and the National Northwest

Agricultural College, a special botanical survey was planned and organized to do research on the plant life of Northwest China as well as on their economic values. In 1940, a botanical garden was brought to completion, inside which experiments have been performed. Botanical parties were despatched to various centers of botanical interest throughout the Northwest, particularly the surroundings of the great western mountain ranges. The entire collection of plant specimens belonging to the institute numbers more than 60,000.

For more than ten years, the Institute of Geology has been cooperating with the National Geological Survey of China. Outstanding among contributions to science and geological work has been the discovery and identification of fossil remains of the well-known *Sinanthropus Pekinensi* or the Peking Man with its contemporary vertebrates excavated from the limestone caves at Chou-Kou-Tien, near Peiping.

Since 1937, extensive field and laboratory studies have been in progress despite the war. Detailed mapping of mineral deposits occupied a major part of the institute's work, though emphasis has also been laid on paleontological studies. The excavation and investigation of a complete fossil Dinosaurs skeleton (*Lufengosaurus Huenei* Young) from Lufenghsien, Yunnan, is among the noteworthy achievements of the institute.

The Institute of Historical Studies and Archaeology consists of three main fields: the study of literary material in ancient Chinese history, the compilation of archaeological materials excavated at Paoki, Shensi, several years ago and the collection of historical materials about the inhabitants living in the border regions of China.

In 1933, a committee was appointed at the request of the Shensi provincial government to start an excavation at Touchitai, near Paoki. The excavation began in 1934 and by 1937, materials of historical significance were obtained there including the remains of many human dwelling places of the Stone Age, relics of ancient city walls and more than 100 tombs belonging to various ancient periods. The first of a series of publications, *Studies of Li-Tripods Excavated at Touchitai*, prepared by Su Ping-ki has just gone to press, while the report of the excavation is now under compilation.

Several important works on the studies of literary materials in ancient Chinese history have been completed within the last three years, namely, *Legendary Period in Chinese Ancient History* and *Tsun-Ko-Tsin-Sze-Hwei-Tien*, (the name index for the holders of the degree of "Tsin-Sze" during the various Chinese dynasties) Papers of other investigations are listed in the institute's publication *Collected Papers of Historical Studies*.

The National Academy of Peiping was founded on September 9, 1929, in Peiping, in accordance with an act passed by the Executive Yuan of the National Government. Under the leadership of Li Yu-ying and Dr. Li Shu-hua, respectively president and vice-president of the academy, is a staff of 120 members. It receives \$420,000 annually from the Government plus a variable monthly subsidy to cover the rising cost of living.

SINO-AMERICAN COOPERATION FOR PROMOTION OF EDUCATION

One of the great organs of educational and cultural enterprises in China is the China Foundation for the Promotion of Education and Culture which has at its disposal the indemnity funds returned to China by the United States Government. Since the suspension of the indemnity payments by the Chinese Government at the end of 1938, the Foundation has been deprived of its major income and has had to depend mainly on the endowment income plus the proceeds from a loan contracted with the Central Bank of China, the Bank of China, the Bank of Communications and the Farmers' Bank of China. Despite financial limitations, the work of the Foundation during the past four years has covered a wide range of activities which may be briefly summarized under three main categories: direct enterprises, joint enterprises and subsidized institutions.

Under direct enterprises, scientific research professorships in China and fellowships both in China and abroad are maintained by the Foundation. The recipients of such professorships and fellowships in 1939-40 are listed as follows:—

Dr. Chi Ping, research professor in zoology, continued to work at the Science Society of China, Shanghai. A paper entitled "Study of the effect of cerebral cortical lesion on the respiratory exchange and its associated phenomena of the albino rats" was prepared and published.

His experimental work on "Comparative study of the calorie production of the albino rat under certain different conditions" was completed in the year and that on "Study on the chronaxie of a certain cerebral motor point of the albino rat at three postnatal growth stages" was nearing completion. The investigation "Observations on the basal metabolism of the albino rat after a cerebral cortical injury at various nursing periods" was still in progress.

Prof. H. Y. Chen, research professor in botany, continued his work at the Botanical Institute of Sun Yat-sen University. Besides directing graduate studies, he actively carried on studies of the Gesneriaceae and Fagaceae. A part of his time was also devoted to writing up the flora of Kwangtung and Hainan Island.

Dr. Chi Li, research professor in archaeology, continued to work on the Yin-hsu potteries at the Research Institute of History and Philology of Academia Sinica. For the first half year, he devoted his full time to finishing up the work on the classification of potteries: (1) revising the formula for the index of dissimilarity; (2) carrying out the porosity test; (3) repairing the standard specimens from Nanking. During the second half year he was drafting a monograph on the studies of Yin-hsu potteries. The monograph was to be divided into three parts: Part I, Descriptive; Part II, Analytical; Part III, Comparative and Historical. The draft of Part I was nearly completed. He also started working on the bronzes recovered from Yin-hsu.

Dr. A. W. Grabau, research professor in geology, continued his work in the Cenozoic Laboratory at Peiping. The fifth volume of his book "Palaeozoic formations in the light of the pulsation theory" was completed and ready to go to press. Another book prepared by him under the title of "The rhythm of the ages" was published by the French Bookstore, Peiping, in January, 1940.

Dr. Ta-kuin Tsing, formerly the Foundation's professor of aerodynamics at Peiyang Engineering College, was reinstated and transferred to the Research Institute of Aeronautics, Tsing-Hua University, in July, 1939. During the year he prepared a set of apparatus for laboratory work on elementary aerodynamics and wrote a textbook on elementary aerodynamics. He is writing another book on "Construction of airplanes."

Among holders of fellowships in China were Tai Chen of Yenching University who worked on the utilization of Chinese flint fire clays in making refractory bricks, and Han-po Ting of the same institution who worked on a further study of the hybrids already obtained between *R. nigromaculata* and *R. plancyi* and the continuation of further hybridization experiments on the Chinese anurans and an experimental study of the Bidder's organ in Chinese toads.

Recipients of foreign fellowships included Shih-ge Lin of Massachusetts Institute of Technology on "Study of automatic control of aircraft," Tsing-nang Shen of Columbia University on "The electrolytic co-deposition of beryllium-magnesium alloys from the fused salts," Paul C. Chang of the University of Cincinnati on "Nature of Fermentation of vegetable tanning materials," Chung-tao Cheng of Berlin University on "Research in Vitamin B1," Chia-wei Chang of University of California on "The causes of development of soil structure," Tso-lin Ho of Innsbruck University (Germany) on "The application of petrofabrics on orogenesis and economic geology," Ling-ting Chong of University of Dijon (France) on "Ornithological fauna of the southwestern provinces of China," Pei-moo Ku of Massachusetts Institute of Technology, on "Air-cooling of in-line aero-engines," Shiou-chuan Sun of Missouri School of Mines on "Concentration of gold and silver ores," Chuk-Ching Ma of Columbia University on "Pure tungsten from Chinese wolframite," Ching-yuan Li of Columbia University on "Economic geology and geomorphology," Ki-chin Hsu of University of Minnesota on "Tungsten, tin, bismuth, molybdenum deposits in the Nanling region and their relation to the orogenic history and igneous activities in Southern China," Tit Wong of Kansas State College on "Manufacture of veterinary biologicals in the control and treatment of animal diseases in China," Yun-pei Sun of University of Minnesota on "Preparation of arsenical insecticides from Chinese 'Hsinshih,' realgar and orpiment," Sidney Hsiao of the U.S. Bureau of Fisheries and Woods Hole Oceanographic Institution on "The relation of environmental factors to flounder migration and to survival of larvae of commercial fish," Ping-yang Liu of Harvard University on "Further studies on typhus rickettsia with special references to its cultivation and vaccine production," and Chi-tang Woo of Iowa State

College on "The secondary micro-organisms in hog cholera and other micro-organisms which produce diseases similar to hog cholera."

In addition, research grants were given to Chia-jui Shen of Southwest Associated University for a study of the brachyuran crustacea of China and the larval development of the Chinese crabs, Libin T. Cheng of the Medical College of the National Central University for a dietary survey of Chinese high school students, Kuo-hao Lin of the National Medical College of Shanghai for a study on the general methods for the synthesis of alpha-amino acids, Liang Li of the same institution for a study on Glycolysis in shed blood, Siang Wu of the Medical College of National Central University for a survey of the growth rate and haematological elements of Chinese, Kuang Wu of Henry Lester Institute of Medical Research, Shanghai, for a study of the biological control of schistosomiasis in China, Chang-shan Lin of Yenching University for experimental studies of mole crickets and H. Liu of the Science Society of China, Shanghai, for a study on the ethnography of the Li tribes of Hainan Island.

The work of the Committee on Editing and Translation also came under the direct enterprises category of the Foundation. During the year 1939-40, its work consisted chiefly in continuing the translations already in progress while a great deal of attention was paid to the reading and correction of manuscripts on hand. Twelve books were translated and the manuscripts of five books were revised. Books published included: *The Elements of Non-Euclidean Plane Geometry and Trigonometry*, *Industrial Evolution*, *History of American Political Theories*, *History of Contemporary Europe*, *Twelfth Night and Medea*.

Soil survey which, in previous years, was entrusted to the National Geological Survey, has been conducted under the direct supervision of the Foundation. Surveys made during the year 1939-40 comprised: (1) Detailed soil survey of Kaiyuan district, Yunnan; (2) Reconnaissance soil survey of Lei-Ma-Ngo-Ping border district, Szechwan; (3) Survey of the area comprising Fushan, Fuchi and Fungtsi; (4) Detailed soil survey of Laochang area, Weiyuan, Szechwan; (5) Reconnaissance soil survey of the northeastern district of Kweichow; (6) Reconnaissance soil survey of Kunyang district, Yunnan.

Under experimental work the following were carried on: (1) Routine analytical work; (2) Field experiments of the soil station; (3) A correlation study of the characteristics of different soil series; (4) A new method for determining soil plasticity and stickiness; (5) A study of the soil physical properties; (6) Trials of rock phosphate as a phosphatic fertilizer; (7) An experiment on the fixation of phosphate in red earths and yellow earths; (8) Variations of the yield of wheat as affected by the time of applying phosphatic fertilizer.

On the Foundation's joint enterprises list are the National Library of Peiping and the Fan Memorial Institute of Biology. During the year 1939-40, the library received as gifts 1,101 volumes of books and 4,652 volumes of periodicals and pamphlets. It acquired through purchase 551 volumes of books and 157 periodicals in 756 volumes. It was frequented by 262,041 readers who made use of 312,300 volumes, averaging 724 readers and 863 volumes per day. The reference section, besides answering oral inquiries, prepared, on its own initiative, "Bibliography on the Foreign Relations of China," "Bibliography on Post-war Reconstruction in Europe" and a number of bibliographies on other topics.

Outstanding among the activities of the Fan Memorial Institute of Biology was the Yunnan botanical expedition organized by the institute and partly financed by the Royal Horticultural Society, England and the Arnold Arboretum of Harvard University, U.S.A. At first, the party was divided into three groups, exploring the mountainous regions of Cingtung, Mengtze, and southwestern Yunnan, respectively. Late in the spring of 1940, the party was redivided into two groups: one group working at Mengtze and Ping-pien and the other group in southeastern parts of Yunnan and places bordering French Indo-China and Kwangsi province.

They obtained during the year over 14,500 numbers of herbarium specimens, 1,000 numbers of seeds and large quantities of algae, fungi, mosses, etc. The Yunnan party also collected for the zoological division over 10,000 specimens of insects.

Research work of the Institute covered a variety of topics. Results of such studies by staff members, published in the Institute's bulletin and other scientific periodicals during the year include the following: Enumeration of

Primula Collected from Northwestern Yunnan, A Study of the Seeds of the Genus Primula with Reference to the Criterion Section, The Studies of Chinese Ferns, Notes on a New Grex of the Section Osproleon of the Genus Orobanche in China, Notes on the Fagaceae of Yunnan, Notes on Five New and Several Other Known Species of Ilex of China, A Catalogue of Birds in the Department of Biology, Chung Kuo College, Peiping, Freshwater Algae from Yunnan Expedition 1935-37, Addition to the Freshwater Algae of Yunnan, The Heonries of Tai-Miao Park, Studies on the Chinese Jackdaw, Variability in the Body Weight of the Brambling, Age and Growth in Some Food Fishes, On the Occurrence of the Yellow-bellied Tit from Western Hills, Peiping, Contributions to the Knowledge of Eastern Asiatic Orchidaceae, A Review of Chinese Gobies, Studies on Chinese Glossogobius, A Review of the Smooth Catfishes, List of Amphibians in the Fan Memorial Institute of Biology, Leguminosae Sinicae II, Karyokinetic Study on *Assulus chinensis* Bunge, Systematical Studies on Chinese *Coridiense* with Particular Reference to the Genitalia of both Sexes.

Subsidized institutions include universities and colleges, research institutes and educational and cultural organizations. Grants made to universities and colleges in the year 1939-40 included \$7,000 to the College of Agriculture and Forestry of the University of Nanking for investigations in plant pathology; \$8,000 to the Botanical Institute of Sun Yat-sen University for investigations of special products of the Southwest, such as tung oil and castor oil of Szechwan and the star anise tree of Kwangsi NC \$50,000 and US \$15,000 to National Yunnan University for the development of mining and metallurgical engineering; NC \$35,000 and US \$8,000 to the College of Medicine of National Central University for books, equipment and special expenses; NC \$8,000 and US \$4,000 to the College of Medicine of West China Union University for animal house and books; NC \$8,700 and US \$1,000 to the United Hospital of the Associated Universities in Chengtu for equipment and special expenses; \$10,000 to National Shanghai Medical College for public health work in Yunnan province; NC \$100,000 and US \$8,000 to National Kweiyang Medical College for equipment and construction; \$7,500 to the College of Medicine of St. John's University for

purchase of necessary equipment and supplies; \$10,000 to Hsiang Ya (Yale-in-China) Medical College for more housing and laboratory facilities; \$15,000 to Boone Library School for maintenance; \$5,000 to Lingnan University for purchase of laboratory equipment and supplies and \$10,000 to Fujen (Catholic) University of Peiping for science equipment.

Grants made to research institutes include \$50,000 to the Biological laboratory of the Science Society of China, \$30,000 to the Academia Sinica for experimenting on the manufacture of chemical glass and \$15,000 for the manufacture of physical apparatus, \$60,000 to the Research Institute of Social Sciences

of Academia Sinica, \$96,000 to the National Geological Survey, and \$10,000 to the Golden Sea Research Institute of Chemical Industry for research in industrial chemistry.

Among educational and cultural organizations benefited by the American Indemnity Funds, the Society for Research in Chinese Architecture received a grant of \$13,000; Chinese Medical Association, \$5,000; Kweichow Provincial Institute of Science, \$60,000; and China Institute in America, US \$6,000 for maintenance and another US \$19,000 for training automotive engineers.

Grants made by the Foundation for the years 1939-40, 1940-41 and 1941-42 are shown in the accompanying tables:

STATEMENT SHOWING APPROPRIATIONS EFFECTIVE FOR FISCAL YEAR 1939-40 AND PAYMENTS ACTUALLY MADE THEREON DURING FISCAL YEAR 1939-40

APPROPRIATIONS PASSED BY BOARD OF TRUSTEES

Recipient	Appropriation	Payment	Amount Reserved
I—DIRECT ENTERPRISES			
1. National Geological Survey (soil survey)	NC \$50,000.00	NC \$46,200.00	NC \$3,800.00
2. Committee on Editing and Translation	28,800.00	28,800.00	
3. Scientific Research Professorships— In Chinese Dollars	37,000.00	37,000.00	
In US Dollars	US \$900.00	US \$900.00	
4. Scientific Research Fellowships and Prizes and Committee on Examination— In Chinese Dollars (amount awarded—NC \$11,000.00)	NC \$10,000.00	NC \$10,946.06	53.94
In US Dollars (amount awarded—US \$17,600.00)	US \$20,000.00	US \$14,000.00	US \$600.00
5. China Institute in America (training in America of Chinese students for motor transportation and motor roads)	15,000.00	12,041.36	2,958.64
	NC \$125,800.00	NC \$122,946.06	NC \$3,853.94
	US \$35,900.00	US \$26,941.36	US \$3,558.64
II—JOINT ENTERPRISES			
1. National Library of Peiping— For maintenance	NC \$135,000.00	NC \$135,000.00	
For purchase of Chinese books	5,000.00	5,000.00	
For purchase of foreign books (appropriated US \$ but paid in NC \$ @ 6.25— US \$8,000.00)	50,000.00	50,000.00	
2. Fan Memorial Institute of Biology— For Institute itself	80,000.00	57,912.26*	
For Lushan Botanical Garden and Arboretum	10,000.00	10,000.00	
	NC \$280,000.00	NC \$257,912.26	

Recipient	Appropriation	Payment	Amount Reserved
III—OTHER INSTITUTIONS.			
1. National Geological Survey (field work)	NC \$96,000.00	NC \$88,000.00	NC \$8,000.00
2. Biological Laboratory, Science Society of China	50,000.00	46,200.00	3,800.00
3. Boone Library School	15,000.00	13,750.00	1,250.00
4. College of Medicine, National Central University— Appropriated in NC \$			
Appropriated in US \$ but paid in NC \$ @ 6.25 (US \$8,000.00)	NC \$35,900.00		
	50,000.00		
5. United Hospital of the Associated Universities in Chengtu— Appropriated in NC \$	85,900.00	78,100.00	7,800.00
Appropriated in US \$ but paid in NC \$ @ 6.25 (US \$1,000.00)	14,950.00	13,200.00	1,750.00
6. University of Nanking— Appropriated in NC \$	13,250.00	12,100.00	1,150.00
Appropriated in US \$ but paid in NC \$ @ 6.25 (US \$1,000.00)			
7. West China Union University— Appropriated in NC \$	33,000.00	30,250.00	2,750.00
Appropriated in US \$ but paid in NC \$ @ 6.25 (US \$4,000.00)	10,000.00	8,800.00	1,200.00
8. Golden Sea Research Institute of Chemical Industries	150,000.00	125,000.00	25,000.00
9. National Kweiyang Medical College— Appropriated in NC \$	60,000.00	50,000.00	10,000.00
Appropriated in US \$ but paid in NC \$ @ 6.25 (US \$8,000.00)	13,000.00	13,000.00	
10. Science Laboratory of Kweichow Province			
11. Institute of Social Sciences, Academia Sinica	143,750.00	130,900.00	12,850.00
12. Society for Research in Chinese Architecture			
13. National Yunnan University— Appropriated in NC \$	30,000.00	30,000.00	
Appropriated in US \$ but paid in NC \$ @ 6.25 (US \$15,000.00)	15,000.00	15,000.00	
14. Academia Sinica— For chemical glass experimental factory	15,000.00	15,000.00	
For making physical instruments	8,000.00	8,000.00	
15. Botanical Institute, National Sun Yat-sen University	15,000.00	15,000.00	
16. Yenching University	10,000.00	10,000.00	
17. Fudan University of Peiping	6,000.00	5,000.00	
18. Chinese Medical Association	7,500.00	7,500.00	
19. Medical School, St. John's University	US \$6,000.00	US \$6,000.00	
20. China Institute in America	5,000.00	5,000.00	
21. Emergency Committee for Far Eastern Students in America			
	NC \$85,350.00	NC \$79,800.00	NC \$5,550.00
	US \$11,000.00	US \$11,000.00	US \$...
TOTAL	NC \$1,241,150.00	NC \$1,140,688.32	NC \$79,403.94
	US \$46,900.00	US \$37,941.36	US \$3,558.64

* Less NC \$22,087.74 paid out of income of the Endowment Fund of Fan Memorial Institute of Biology

APPROPRIATIONS PASSED BY EXECUTIVE COMMITTEE

Recipient	Appropriation	Payment	Amount Reserved
1. Ministry of Education	NC \$30,000.00		NC \$30,000.00
2. C. Z. Waung, Accountant of Director's Office of the Foundation	7,212.00	NC \$7,212.00	
3. National Kweiyang Medical College	8,200.00	8,200.00	
4. Hsiangya Medical College	10,000.00	5,000.00	5,000.00
5. National Shanghai Medical College	10,000.00	10,000.00	
6. S. M. Wang, Assistant Secretary of Director's Office of the Foundation	3,500.00	3,500.00	
7. Fan Memorial Institute of Biology	3,000.00	3,000.00	
8. Huachung College	5,000.00	5,000.00	
9. Lingnan University	5,000.00	5,000.00	
10. C. F. Wu, Yenching University	2,000.00	2,000.00	
11. China Foundation Staff Welfare Fund Account	30.68	27.52	3.16
12. China Foundation Staff Welfare Fund Account	US \$248.35	US \$106.79	US \$141.56
13. China Institute in America (training in America of Chinese students for motor transportation and motor roads)	4,000.00	2,000.00	1,041.36
14. Fan-Hung, Dun Fwu-tang and Liu Hung-wan @ US \$100.00 each	300.00	300.00	
Total	NC \$83,942.68 US \$4,548.35	NC \$48,939.52 US \$2,406.79	NC \$35,003.16 US \$1,182.92

LIST OF GRANTS FOR 1940-41

	NC \$	US \$
Professorships	48,600	900
Fellowships	22,000	19,160
Research Institute of Social Sciences, Academia Sinica	60,000	
Committee on Editing and Translation	29,600	
Soil Survey (entrusted to the National Geological Survey)	50,000	
National Library of Peiping	210,000	
Fan Memorial Institute of Biology	128,000	
China Institute in America		6,000
Biological Laboratory, Science Society of China	50,000	
Golden Sea Research Institute of Chemical Industry	10,000	
Lingnan University	10,000	
National Central University College of Medicine	90,000	
National Geological Survey	96,000	
National Yunnan University	144,000	
University of Nanking, plant pathology work	7,000	
West China Union University	40,000	
Boone Library School	22,000	
Chinese Medical Association	5,000	
Society for Research in Chinese Architecture	15,000	
National Szechwan University, chemical engineering work	12,000	
National Peking University	50,000	
National Kweiyang Medical College	80,000	
Fujen University of Peiping	24,000	
Academia Sinica, for glass factory	15,000	
Botanical Institute, National Sun Yat-sen University	10,000	
Training automotive engineers in U.S.A.	...	12,000
Chengtu Union Hospital	20,000	
National Hsiangya Medical College	10,000	
Medical School, St. John's University	7,500	
Kweichow Science Institute	10,000	
Total	<u>1,275,700</u>	<u>38,060</u>

LIST OF GRANTS FOR 1941-42

	NC. \$	US. \$
Professorships	52,200	900
Fellowships ...	25,000	18,000
Research Institute of Social Sciences, Academia Sinica	60,000	
Committee on Editing and Translation	31,800	
Soil Survey (entrusted to the National Geological Survey)	100,000	
National Library of Peiping	225,000	
Fan Memorial Institute of Biology	140,000	
China Institute in America		6,000
Biological Laboratory, Science Society of China	60,000	
Golden Sea Research Institute of Chemical Industry	10,000	
Lingnan University	15,000	
National Central University College of Medicine	90,000	
National Geological Survey	96,000	
National Yunnan University	140,000	
University of Nanking	15,000	
West China Union University	50,000	
Boone Library School	49,000	
Chinese Medical Association	5,000	
Society for Research in Chinese Architecture	20,000	
National Szechwan University, chemical engineering work	10,000	
National Peking University	50,000	
National Kweiyang Medical College	42,000	
Botanical Institute, National Sun Yat-sen University	15,000	
Automotive engineering ...	...	12,000
Kweichow Science Institute	45,000	
Commission for the Observation of Solar Eclipses	10,000	
National Hsiangya Medical College	20,000	
Medical School, St. John's University	15,000	
National Association of Vocational Education	15,000	
Total	<u>1,406,000</u>	<u>38,900</u>

At the second meeting of the Emergency Committee of the Board of Directors held on June 30, 1942, in Chungking, the China Foundation for the Promotion of Culture and Education decided to give more than \$3,000,000 as grants to various cultural and educational institutions. Presided over by Dr. Wong Wen-hao, the meeting was also attended by Mr. Ku Yu-hsiu, Vice-Minister of Education, and Mr. John S. Service, representing United States Ambassador Mr. Clarence E. Gauss.

The major part of the grants were designated for the following purposes:—

Research Professorship (six persons)	\$132,000
Subsidy for scientific research (30 persons)	\$200,000
Soil Survey	\$180,000
Subsidy to the Kunming Office of the National Library of Peiping	\$120,000
Subsidy to the Fan Memorial Research Institute of Biology	\$200,000
Subsidy for reprinting British and American magazines on technical subjects	\$100,000
Subsidy to the Institute of Social Sciences of the Academia Sinica	\$100,000
Subsidy to the Medical College of the National Central University	\$120,000
Subsidy to the Metallurgical Department of the National Yunnan University	\$200,000
Subsidy to the National Geological Survey	\$174,000

Smaller sums were to be extended to 15 other institutions, including the Dental School of the West China Union University, the School of Agriculture of University of Nanking, the Boone Library School, the Medical College of Cheeloo University, the Hsiangya (Yale-in-China) Medical College, and the Botanical Research Institute of the Chinese Science Society.

Subsidies were also to be given to academical publications to enable them to continue despite the increasing cost of printing. Organizations receiving such appropriations are:—

Institute of History and Philology of the Academia Sinica	\$50,000
Institute of Geology of the Academia Sinica	\$30,000

Department of Geology of the National Peking University ...	\$40,000
National Geological Society	\$30,000

SINO-BRITISH COOPERATION FOR PROMOTION OF EDUCATION

A total of \$18,000,000 in round figures out of British Indemnity remissions was spent for the advancement of education and culture in China during the seven-year period ending in 1941 according to a report recently released by the Board of Trustees for the Administration of the British Indemnity Fund. The amount was derived from interest, receipts from loans made by the Board to productive enterprises.

The remission of the British portion of the Boxer Indemnity dates back to December, 1922, when the British Government declared that all future payments of the Indemnity to Great Britain would be returned to China to be used for purposes beneficial to both countries. From then, instalments paid by the Chinese Government were deposited in the Hongkong and Shanghai Banking Corporation, London. There was an election of a new Parliament, and nothing further was done until 1925 when Parliament passed the China Indemnity Act and appointed an Advisory Committee consisting of eleven members, three of whom were Chinese, Dr. Hu Shih, Dr. V. K. Ting (deceased) and Dr. C. C. Wang, whose principal task was to study how the money might best be utilized.

The committee sent a delegation to China to investigate conditions and actual needs. The result of the investigation was submitted in a report to the British Foreign Office, and among the recommendations was one calling for the establishment of an organization for the administration of the funds. This led to the establishment in April, 1931, of the Board of Trustees for the Administration of the British Indemnity Fund. This Board is under the direct administration of the Executive Yuan with five British and ten Chinese trustees all appointed by the National Government. Dr. Chu Chia-hua is now the chairman.

In 1930, notes were exchanged between Dr. C. T. Wang, then Minister of Foreign Affairs, and Sir Miles Lampson, then British Minister to China. The notes made two important provisions besides that of the organization for the administration of the funds, namely, that the

entire amount of the funds remitted by the British Government was to form a foundation, from which loans were to be made for construction or rehabilitation of railways and for promotion of other productive enterprises, the interest receipts from such loans to be used for the benefit of educational and cultural enterprises; and that a purchasing commission was to be established, and all foreign materials required under loans from the foundation for railways and other productive enterprises were to be purchased in England through the commission. The Chinese Government Purchasing Commission was duly organized in May, 1931, consisting of six members with the Chinese diplomatic representative in London as chairman *ex-officio*, another Chinese member representing the Ministry of Communications and four British members recommended by the British Foreign Office to the Board for appointment by the National Government.

The total amount of indemnity funds remitted by the British Government is £11,180,000 in round figures, of which about £4,000,000 represents deposits accumulated at the Hongkong and Shanghai Banking Corporation from December, 1922 to April, 1931, and about £7,000,000 represents the indemnity instalments payable by the Chinese Government between April, 1931 and 1945. From the accumulated deposits, £465,000 was donated to the Hongkong University, the Universities' China Committee in London and certain other organizations, in accordance with stipulations made in the exchange of notes; the balance of £3,500,000 was entrusted to the Purchasing Commission to be used for purchase of materials.

As to the monthly instalments payable from April, 1931, totalling about £7,000,000 it was specified that one half was to be paid to the Board and the other half to the Purchasing Commission to supplement the accumulated funds for purchase of materials. Payment of these monthly instalments, however, ended at the end of 1938 when the Ministry of Finance announced, with the approval of the British Government, a moratorium due to the seizure of the customs along the coast by the Japanese.

The total amount of indemnity funds received by the Board from its inception in 1931 to the end of 1938 was £7,369,000 in round figures, almost two-thirds of the amount of the British remission.

Except for a small portion, all the money has been loaned to productive enterprises according to the quotas fixed, namely, two-thirds of the entire indemnity funds loanable to railways and of the remaining one third, 40 per cent, was allotted to the Hwai River Commission, 20 per cent to the Kwangtung Conservancy Commission and 40 per cent divided equally among the Yellow River Commission, basic industries and electric power enterprises. The rate of interest is five per cent per annum on all loans.

According to regulations drawn up by the Board governing the disposal of interest receipts for the benefit of educational and cultural enterprises, the funds are distributed among five classes. Class A is allotted 25 per cent of the annual receipts for the establishment of the Central Library and the Central Museum and conservation of historical and cultural sites and antiques; Class B is allotted 25 per cent as grants-in-aid for higher education and research organizations with special attention to the four faculties: agriculture, engineering, medicine and pure sciences; Class C is allotted 15 per cent for educational and cultural activities abroad, laying special emphasis on sending scholarship students to England; Class D is allotted one per cent as prizes for technical manuscripts and textbooks for primary, middle and vocational schools; and Class E is allotted 24 per cent for the establishment of model primary and middle schools, industrial and agricultural vocational schools, midwifery schools and rural schools beginning with the border and other relatively backward provinces to extend gradually to other areas.

During recent years, since most of the capital funds so far remitted had been loaned out, the work of the Board consisted principally in collecting interest from the loans and disposing of it among educational and cultural enterprises. Calculated from the amount of capital loaned out, the interest receipts should be six or seven million dollars a year, which under normal conditions could be utilized to make considerable contributions to education and culture. But the greater part of interest cannot be collected on account of the war while prices have risen so that the work for the advancement of education and culture has been retarded.

For the four years prior to the outbreak of war, disposal of interest receipts was

entirely in accordance with the following classification:—

Under Class A over ten grants were made for conservation of cultural and historical sites and antiques. Of the latter, the most important is compilation and photo-engraving of Buddhist writings found at Tunghuang. This is the least conservation work that can be done, since the greater part of these invaluable writings have become scattered and taken out of the country. Next in importance is the projected construction of the Central Museum and the Central Library, for which \$1,500,000 each was granted for construction of buildings payable over several years when the Board made its disposal of interest receipts. Prior to the evacuation of Nanking, construction had already been started on the Central Museum, and was about to begin on the Central Library, for which a suitable site had been procured. But for the war, both buildings would have long been completed. At the outset the idea had been to first build the Central Museum and the Central Library on an imposing scale at the National Capital, and then to build a museum and a library on a smaller scale at each of the provincial capitals and municipalities. The building of the Chungking Branch of the Central Library was constructed with a small part of the grant for the construction of the Central Library. The budget estimate was only about \$50,000, but the actual cost exceeded the amount owing to the increased cost of building materials. Under normal conditions an amount between \$50,000 and \$100,000 should suffice for the construction of a small museum or library, and a yearly grant of a million and twenty or thirty thousand dollars could build fifteen or sixteen such buildings at the average cost of \$80,000 each. Thus in two or three years, every important metropolis in the country would be provided with a museum and a library. The above project would most probably have been brought to completion had it not been for the war.

Grants made to higher education and research organizations under Class B may be divided into those for construction, for equipment and for professorships. So far, most institutions of higher education, whether national, provincial or private, have been subsidized by the Board, as have also the more important of the research organizations.

The sending of students to England under Class C is considered one of the

most important of the Board's activities. So, the scheme of holding annual scholarship examinations was inaugurated in the third year of the Board's establishment, one year earlier than the actual disposal of interest receipts. The object of this scheme is to train a number of specialists to help strengthen the faculty of institutions of higher learning. Up to the present 148 students have been sent in seven groups to specialize principally in the fields of science, agriculture, engineering and medicine. A hundred odd have already returned with excellent records of scholarship, and most of them have joined the faculties of the various universities, in accordance with the Board's expectations. The Eighth Annual Scholarship Examinations scheduled for 1940 were suspended when the European War assumed extensive proportions. As soon as conditions improve and permit sending of students to England again, the Board will continue to follow the original scheme.

Under Class D concerning textbooks, prizes were offered for textbooks for mass education, primary school singing and history, junior middle school history and geography, etc., but the manuscripts submitted were small in number and their content not especially remarkable. The chief difficulty seems to lie in the nature of the subject, and to produce a good song-book for the primary school pupils is especially no mean task.

Class E comprises a comparatively large number of enterprises. Recently the greater portion of grants under this class was used for special education in the five provinces: Hunan, Hupeh, Anhwei, Kiangsi and Fukien, owing to the urgent need for such work existing in these areas. At the same time, however, other projects under this class, such as training obstetricians, vocational education of agriculture and industries, primary school education in the interior, etc., were by no means neglected. For industrial vocational education the Board cooperated with the Ministry of Education and Nanking municipal government in establishing the Central Vocational School of Technology, assuming expenses for equipment. As for agricultural vocational education, two schools in Hunan were given grants. For the training of obstetricians, the Board passed grants from year to year to midwifery schools in fourteen provinces. Unfortunately, a few of the schools could not make use of the grants on

account of the war, and subsequently the money was diverted to other purposes. Most of the subsidy for primary and middle school education was given to the northwestern provinces, especially Kansu. Likewise, the several grants made to the Ministry of Education in aid of free education were allotted to that province in particular, in view of the fact that Kansu occupies a commanding position in the Northwest and offers a good working center.

Since the outbreak of the war, despite the difficulties caused by the diminished interest receipts, all activities of the Board have been maintained as far as possible and interest receipts disposed of in accordance with the standards set for apportionment modified to suit the wartime requirements. These activities may be divided into the following categories:

First, the Board has contributed to conservation of cultural antiques in two ways: rescue of antiques and compilation and photo-engraving of Han manuscripts. The Han manuscripts found in Chuyen and Buddhist engravings in Tunghuang are among the nation's most valued discoveries. In the past the Northwest Science Expedition was prevented by various circumstances to complete the work of compilation. After the Lukouchiao incident of July 7, 1937, the manuscripts had been first shipped to Shanghai from Peiping and then to Hongkong, and were in danger of mutilation or loss during the considerable time spent since their disinternment in moving about over thousands of kilometers. Hence the work of compilation and photo-engraving could not be delayed any longer. The work was completed in the winter of 1941 when the results were published.

Following the outbreak of the war, books of both private and public libraries in the occupied areas have mostly become scattered, and not a few have been acquired by foreign collectors. Unless something was done in time, it would be necessary for future students of Chinese classics to go abroad for references. The Board, therefore, has made an arrangement with the Central Library jointly to undertake the purchase of old books.

Second, the Board started a scheme for subsidizing individual scientific workers. At the beginning of the war, there was unemployment among educational circles throughout the country. Professors of the universities in North China were faced with the problem of

subsistence when the institutions were closed, and many scientific workers of various organizations were released for reasons of financial retrenchment. Fresh graduates of universities were unable to find positions under such conditions. From the standpoint of education and technology, all these constituted an extremely grave problem. The Board tackled the problem in three ways: (1) Professorships were established in the universities in the interior to provide living expenses for teachers of North China, and at the same time to assist these universities in strengthening their faculties, (2) Subsidies were granted to unemployed scientific workers of various organizations, (3) Junior Research Fellowships were placed in various universities and research organizations for the benefit of recent college graduates who were interested in scientific research. All the three schemes are being continued, involving about thirty professors, over one hundred scientific workers and seventy junior research fellows.

Although this scheme was adopted to meet the exigencies of the war, plans had been laid long before, and it will be continued even after the war, for the aim is to give those who can accomplish, or who may be expected to accomplish, something in scientific research, subsidies for long terms or even for life, so that they may devote themselves to the pursuit of knowledge and the development of science in the country.

Third, since the war the Board has inaugurated several enterprises under its direct administration. At Tsunyi was established the China Institute of Sericulture and at Peipei near Chungking the China Institute of Geography. An institute of sericultural research had been established by the Chekiang provincial Government but was brought to a close by the war. As Szechwan and Kweichow provinces have been an important silk-producing area in the west, the Board decided to utilize the time when the war was in progress to make a scientific study of sericulture in West China as a basis for its future development. The Institute of Geography had been planned for by the Academia Sinica but lack of funds had delayed its establishment. The Board, being always interested in promoting the study of geography and geodesy, finally established the China Institute of Geography, and further intends to make separate institutes of Geodesy and Oceanography, which are

for the present incorporated as departments of the Institute of Geography. Other enterprises are the Kansu Science Education Institute at Lanchow, Hohsi Middle School at Suchow, Kansu, Huangchuan Middle School at Sining, Chinghai, and Chienkiang Middle School at Anshun, Kweichow. Two other schools are now under preparation—one to be in Paan, Sikang, and the other in Nanchiao, Yunnan. Though the above enterprises were handicapped by the limited interest receipts of the recent years, the Board has exerted its utmost to carry out all the plans previously adopted regardless of difficulties, especially as the Government is actively promoting construction of the West, the Northwest and the Southwest. In 1939, the Board sent out the Szechwan-Sikang Science Expedition which made a scientific survey of western and northern parts of Szechwan and the eastern and central parts of Sikang.

INTERNATIONAL CULTURAL SERVICE

In the field of cultural exchange between China and the West, considerable contributions have been made by the International Cultural Service, a recently-established organization in charge of a committee of Chinese scholars and administrators in Chungking appointed by the Ministry of Education. Outstanding among its achievements has been the program of bringing in publications from the United States and England on microfilm. The following announcement about this program was recently made by Dr. T. L. Yuan, Director of the National Library of Peiping and Executive Secretary of the International Cultural Service.

"Since the outbreak of the Pacific War, China has been cut off from the intellectual world of the West, and because of their weight, books and magazines from abroad have not been transported into the country. A solution has now been found, however, by the use of microfilm. Some time ago a program for the bringing in of periodicals from the United States on microfilm was initiated by the China Foundation for the Promotion of Education and Culture, and about the same time a program for the production and shipment of such microfilms was inaugurated by the Cultural Relations Division of the Department of State in Washington. These programs have now been combined as a joint enterprise under the direction of the International Cultural Service of China, a committee

of Chinese scholars and administrators in Chungking appointed by the Ministry of Education.

"The use of microfilm to solve the transportation problem into China has never before been tried on so large a scale. For several years past the possibilities of microfilm have been explored by certain libraries in the United States, and by using non-inflammable safety film of the ordinary moving picture size, librarians found that they could store enormous volumes of old and perhaps unused records and newspaper files in a relatively compact and permanent form, thus saving a great deal of space in over-crowded archives and book-stacks. Microfilm was also found to be most useful in the reading of rare books or manuscripts. A scholar whose library lacked a certain rare volume could write to the library which possessed it, and obtain a microfilm copy for his own use at very little cost, and without making a trip to see the original work. Thus many rare books and inaccessible newspaper files have been copied and stored on microfilm in the leading libraries.

"More recently the outbreak of the war has led to the microfilming of a great number of books in the British Museum, copies on film being taken for safety to the United States, while many of the most treasured Chinese rare books have been copied on microfilm in the Library of Congress, Washington, D.C. Now the war has created a new use for microfilm, and Chinese universities and research workers are beginning to be supplied with publications from the United States and soon, it is hoped, from England. By reducing the weight of the published materials and putting 1,800 pages reading matter on to 100 feet of film which weighs less than one pound, it is now possible to span the gap of ten thousand miles between the Western publisher and the Chinese reader and bring books to China by airplane.

"This new program is a cooperative one in every sense of the word. Microfilms to be sent from the United States are produced at the Library of Congress in Washington under the direction of the Department of State and sent to the American Embassy in Chungking, whence they go to the Chinese committee which is now known as the International Cultural Service of China. Its members, appointed by the Ministry of Education, are as follows:

"Dr. Y. H. Ku, Vice-Minister of Education, Chairman; Dr. H. C. Zen, Director of the China Foundation, Vice-Chairman; Dr. T. L. Yuan, Director of the National Library of Peiping, Executive Secretary; Dr. Yeh Chi-sun, Secretary-general of the Academia Sinica, Treasurer; Dr. T. F. Tsiang, Director of the Political Department of the Executive Yuan; Dr. Han Lih-wu, Secretary-general of the Board of Trustees for the Administration of the British Indemnity Funds; Dr. Chen Ko-chung, Director of the National Bureau of Compilation and Translation; Dr. Wu Tsun-sheng, Director of the Department of Higher Education of the Ministry of Education; Mr. Liu Chi-hung, Director of the Department of Social Education; Dr. Wei Hsueh-jen, Dean, College of Science, University of Nanking; and Mr. Chiang Fu-tung, Director of the National Central Library; Mr. O. E. Clubb, Second Secretary, and Dr. J. K. Fairbank of Harvard University, Special Assistant to the American Ambassador,

who are cooperating with the committee on behalf of the Embassy.

"Under the direction of Dean Wei Hsueh-jen, a simplified and improved type of reading projector has been made locally and will be produced in quantity. Two reading libraries have been opened, and others are planned in Chengtu, Kunming, and other centers. Over 210 items have already been received on microfilm from Washington, D.C.

"The Central Microfilm Library is housed on the third floor, College of Science, University of Nanking, Chiu-ching Middle School. It is open from 2 to 5 p.m. on week days and in the morning by special arrangement. A branch library is being opened at the university center at Sha Ping Pa. Another one will soon be opened at the National Central Library.

"The office of the International Cultural Service of China is situated in room 5, second floor, Chiu-ching Middle School Administration Building."

APPENDIX

TABLE I—PROPERTY LOSSES OF MIDDLE SCHOOLS, PRIMARY SCHOOLS AND INSTITUTIONS OF SOCIAL EDUCATION IN THE WAR AREAS (UP TO THE END OF DECEMBER, 1940)

Localities	Losses
Chekiang	\$ 3,972,775
Kiangsi	397,274
Hupei	553,510
Szechwan	106,467
Kwangsi	632,300
Yunnan	91,000
Shansi	1,303,052
Shensi	44,220
Fukien	1,790,300
Kiangsu	43,479,398
Anhwei	9,063,760
Hunan	19,616,015
Kwangtung	6,362,464
Hopei	22,775,264
Shantung	44,146,957
Honan	12,992,782
Chahar	2,447,905
Suiyuan	994,748
Nanking	5,246,915
Shanghai	8,704,882
Peiping	13,128,308
Tientsin	7,164,051
Tsingtao	2,920,469
Weihaiwei	756,022
TOTAL	\$ 208,690,838

TABLE II
RELIEF FOR COLLEGE TEACHERS AND STUDENTS FROM THE WAR AREAS
(UP TO SEPTEMBER, 1942)

A—TEACHERS AND STAFF

(1) Classified according to Courses

(2) Classified according to Work

Course	Number of Persons	Work Assigned	Number of Persons
Arts (Arts, Law, Commerce, Education)	348	Tentative research work in translation, compilation and supervision	558
Scientific Studies (Pure Science, Engineering, Medicine, Agriculture)	235	Registered college teachers	33
Others	61	In cultural institutions and administrative organizations	
		Local educational assistance and guidance	7
		Social education work	8
		Others	38
Total	644	Total	644

B—STUDENTS

Kind of Activity	Number of Students
Sent to study in existing colleges or as guest students	5,565
Sent to the wartime service training corps	480
Total	6,045

TABLE III
RELIEF FOR STUDENTS STUDYING ABROAD
(Up to September, 1942)

Country	Given Living Allowance	Given Return Passage Fee	Total
Great Britain	38	38	76
Germany	62	147	209
United States	83	118	201
France	15	106	121
Egypt		28	28
Turkey		1	1
Japan		1	1
Italy	2	5	7
Switzerland	5	5	10
Canada		1	1
Belgium	9	10	19
India		1	1
Denmark		1	1
Total	214	462	676

TABLE IV
RELIEF FOR RETURNED STUDENTS
(Up to September, 1942)

Work Assignment	Number of Students
Sent to institutions of higher learning or research	24
Sent to Middle Schools	2
Sent to do compilation work	143
Sent to provincial administrative offices	34
Sent to universities	22
Total	225

TABLE V
RELIEF FOR MIDDLE SCHOOL STUDENTS FROM THE WAR AREAS
(September, 1942)

Category	Number of Students
Students already enrolled in national middle schools	38,290
Students already enlisted in the Sikang Student Camps	60
Students registered by the Third Teachers' Service Corps and sent to study in the various schools	3,218
Students registered by the Chungking Bureau of Guidance for Students from War Zones and sent to study in various schools (not including those sent to the national middle schools and to continuation classes)	789
Students registered and distributed to various schools as guest students by provincial education bureaus	8,796
Students registered in Kunming and sent to various schools	228
Students registered in Hongkong and sent to various schools	389
Total	51,770

TABLE VI
RELIEF FOR TEACHERS AND STAFF OF PRIMARY AND SECONDARY
SCHOOLS FROM THE WAR AREAS
(Up to September, 1942)

Work Assigned	Teachers and Staff of Middle Schools	Teachers and Staff of Primary Schools	Administrative Educational Personnel	Total
In National Middle Schools	1,825			1,825
In Primary and Secondary Teachers' Service Corps*	752	1,550		2,302
In Provincial Schools	3,537	8,336	66	11,939
In other educational institutions	8	228		236
Registered teachers and compilers	86	45		131

* The figures for teachers and staff and the enrolment in the Teachers' Service Corps are of December, 1940.

TABLE VII
RELIEF FOR SOCIAL EDUCATION WORKERS
(Up to September, 1942)

Distribution	Number
Social Education Workers' Corps	1,028
Circuit Theaters	92
Circuit Carts	5
Experimental Circuit Singing Corps	
Social Workers sent to bureaus of education, provincial and municipal	928
Total	2,053

CHAPTER XI

INDUSTRY AND LABOR

INDUSTRIAL POLICY AND ADMINISTRATION

I. Wartime Industrial Policy.—China's wartime economic reconstruction aims at meeting military needs and improving the people's livelihood. It has been proceeding along four main lines, namely, the development of the interior, the gradual attainment of self-sufficiency in the production of both military and non-military materials, the promotion of economic enterprises, and the introduction of a planned economy in the construction of a permanent economic order.

Based on principles laid down in the *Program of Armed Resistance and National Reconstruction*, China's wartime industrial policy provides: (1) the achievement of self-sufficiency in the production of national defense materials in the shortest possible time, (2) the maintenance of factories producing articles of military and daily use, (3) assistance in the removal of such factories in the first stages of hostilities from coastal regions and later from places in or close to the war areas, (4) promotion of the establishment of new factories producing articles of military and daily use, (5) financial and technical assistance to such factories, and (6) prohibition of labor strikes, lockouts, etc.

II. Industrial Administration.—The highest organ in charge of economic affairs in China is the Ministry of Economic Affairs. According to its organic law, the Ministry is responsible for the direction and supervision of the execution of matters pertaining to economic affairs by the authorities in the various strata of local government. It has the power to suspend or countermand any order or disposition of a local government concerning economic affairs if such order or disposition is regarded by the Ministry as contrary to existing laws or regulations, or as having exceeded the powers granted to the local authorities.

Among the departments under the Ministry of Economic Affairs is the department of industry, which is in charge of: (1) matters pertaining to the

planning and control of state-owned industries, (2) matters pertaining to the protection, promotion, direction and supervision of private industries, (3) matters pertaining to the collection, experimentation and examination of manufactured goods, (4) matters pertaining to the granting of patents and licenses, (5) matters pertaining to the testing and promotion of native products, (6) matters pertaining to the registration and examination of factories, (7) matters pertaining to the registration and examination of industrial technicians, (8) matters pertaining to the registration and supervision of industrial or labor organizations, (9) matters pertaining to industrial standardization, (10) matters pertaining to the manufacture, examination and promotion of tools for weights and measures, (11) matters pertaining to industrial investigation, and (12) other matters pertaining to industrial administration.

The National Resources Commission and the Industrial and Mining Adjustment Administration are the two subsidiary organs of the Ministry of Economic Affairs in charge of state-owned and private industries, respectively. Both organs are now headed by the Minister of Economic Affairs.

The National Resources Commission came into existence in April, 1935, as a result of the reorganization of the National Defense Planning Committee. The National Defense Planning Committee was founded in November, 1932, under the National Military Council. Its function was to investigate the nation's natural resources and to formulate policies pertaining to national defense. After its reorganization, it was renamed the National Resources Commission and put under the National Military Council. It was placed under the Ministry of Economic Affairs when the latter was inaugurated in January, 1938. According to its organic law, the functions of the Commission are:

- (1) To develop, operate and control basic industries;
- (2) To develop, operate and control important mining enterprises;

- (3) To develop, operate and control electrical power enterprises; and
- (4) To administer other enterprises as designated by the Government.

The National Resources Commission is composed of the following units: (1) department of industry, (2) department of mining enterprises, (3) department of electrical enterprises, (4) technical division, (5) economic research division, and (6) purchasing division. It controls a number of subsidiary organs.

The Industrial and Mining Adjustment Administration was reorganized from the Industrial and Mining Readjustment Commission of the National Military Council in March, 1938, shortly after the creation of the Ministry of Economic Affairs. It comprises three departments and a number of other units. The more important ones are its departments of field work and finance. The former is in charge of: (1) the removal of equipment of industrial and mining enterprises, (2) the readjustment of the supply and demand of electric power, (3) the assistance to the development of industrial and mining enterprises, (4) the supervision and co-ordination of co-operation and mutual aid among private industrial and mining enterprises, (5) the recruiting and training of industrial and mining personnel, (6) the planning, examination, inspection, direction and supervision of industrial and mining readjustments, and (7) the settlement of industrial disputes. The finance department is in charge of matters pertaining to capital, loans and investment for industrial and mining development.

The development of state-owned enterprises is limited to the following categories:

- (1) Those enterprises relating to national defense;
- (2) Those enterprises which require large-scale equipment which private interests are not in a position to undertake;
- (3) Those enterprises which require wholesale planning and control;
- (4) Those enterprises which are urgently needed but do not produce a profit or are less remunerative;
- (5) Those enterprises which supply power and fuel for the development of industries; and
- (6) Those enterprises specially designated by the Government.

These principles aim at the development of heavy industries and mines which are essential to the prosecution of the war and the industrialization of the country. The Government does not neglect, however, private interests in the course of the economic development of the interior. As a matter of fact, encouragement and assistance are given to private enterprises. Important laws and regulations governing wartime industries include:

- (1) *Regulations Governing the Control of Agricultural, Mining, Industrial and Commercial Enterprises in Time of Emergency*, promulgated in October, 1938.
- (2) *Regulations Governing the Encouragement of and Assistance to Industrial and Mining Enterprises in Time of Emergency*, promulgated in December, 1938, and revised in December, 1941.
- (3) *Law Governing the Encouragement and Promotion of Industries*, promulgated in April, 1934, and revised in June, 1938.
- (4) *Provisional Regulations Governing the Encouragement of and Assistance to Industrial Techniques*, promulgated in September, 1932, and revised in January, 1941.
- (5) *Supplementary Regulations Governing the Encouragement of and Assistance to Industrial Techniques*, promulgated in November, 1940.
- (6) *Regulations Governing the Encouragement of the Inflow of Capital for the Development of Industries*, promulgated in November, 1941.
- (7) *Regulations Governing the Encouragement of and Assistance to Investments from Overseas Chinese for the Development of Economic Enterprises*, promulgated in November, 1938, and revised in May, 1939.
- (8) *Provisional Regulations Governing the Granting of Small Industrial Loans*, promulgated in February, 1939, and revised in September, 1942.

In 1942, the Ministry of Economic Affairs promulgated a set of regulations governing wartime economic administration as a step to meet the changed situation following the outbreak of the

Pacific War in December, 1941. Stipulations relating to industrial development include: (1) increase of production for both military and non-military uses, (2) increase of fuel production, (3) further development of the electric power industry, and (4) control of industrial materials.

III. Provincial Industries.—Various provinces have set up all kinds of factories and promote the establishment of private ones to meet local needs. Fourteen of them have established provincial development corporations to undertake programs of developing provincial enterprises.

Up to August, 1942, 110 factories had been established by provincial governments. Their distribution was as follows: Kweichow 24, Hunan 20, Sikang 2, Kiangsi 20, Chekiang 6, Kwangtung 11, Shensi 6, Fukien 6, Honan 1, Shansi 11, Kansu 3. More are being set up.

The Ministry of Economic Affairs constantly directs and supervises the development of provincial enterprises. It has promulgated a set of regulations governing the direction and supervision of provincial industrial and mining development. These regulations stipulate:

1. Principles:

- (a) Important industrial and mining enterprises relating to national defense should be undertaken by the Central Government.
- (b) Private interests should not be infringed upon in undertaking provincial enterprises.
- (c) Emphasis should be given to inter-provincial trade.

2. The enterprises are confined to:

- (a) Processing, marketing and supply of local products,
- (b) Commodities relating to the people's livelihood, and
- (c) Goods for inter-provincial trade.

3. Provincial enterprises are prohibited from engaging in:

- (a) Monopolies without special permission from the Central Government,
- (b) Purchases without a mandate from the Central Government of those commodities which the Central Government has been purchasing,
- (c) Price and commodity control, and
- (d) Retail business.

4. The following activities are also prohibited:

- (a) Lowering the prices for purchasing commodities in such a way as to affect the producers' legitimate interests,
- (b) Raising the selling prices so as to affect the local market,
- (c) Intervening or hindering legitimate business of other business enterprises, and
- (d) Other illegal activities.

5. Provincial enterprises should be entirely independent. The management of these enterprises should be separated from the ordinary administrative work of the provincial governments. Private capital may be solicited.

STATE-OWNED INDUSTRIES

The development of state-owned industries is placed in the hands of the National Resources Commission, which controlled 98 industrial plants in 1942.

China's heavy industry program was mapped out in 1936, with the southwestern provinces as the base for industrial development. Planned action began in July, 1936, when a 3-year plan was adopted for the establishment of mining and manufacturing enterprises in the three central provinces of Hupeh, Hunan and Kiangsi. These establishments were either under construction or still in a preparatory stage when the Sino-Japanese war broke out in 1937. The central provinces soon felt the menace of war, and the construction work there had to be either suspended or removed to Szechwan, Kwangsi and Yunnan. New enterprises had also to be set up in the interior. The National Resources Commission was confronted with insurmountable difficulties in the removal of these plants into the interior and in the construction of new ones. The situation was afterwards aggravated in consequence of the Japanese blockade of the seacoast. All imported machinery and materials had to come into China through French Indo-China, later through Burma, and now only by aerial transportation from India to Kunming. Means of transportation of such supplies as machines, tools and building materials, and skilled labor were comparatively deficient in the western provinces. In spite of all these difficulties and handicaps, the Commission has attained substantial success in its program.

The progress made regarding the creation of new enterprises may be seen in the following table:

TABLE 1.—THE DEVELOPMENT OF HEAVY INDUSTRIES IN CHINA (1936-100)

Year	New Factories	Percentage Increase
1936	16	100
1937	42	262
1938	53	331
1939	54	337
1940	55	343
1941	78	487
1942	98	612

The number of industrial plants has been increased six times in six years, while the increase of production has also been remarkable.

Statistics show that the production from January to June, 1942, registered a general increase over the same period in 1941. The 1941 figure was also higher than that of 1940. Production figures in the first half of 1942 cannot be taken as a basis for estimating the production of the whole year, which may be more than double the first half-year's figure.

The following is a review of the main industries undertaken by the National Resources Commission:—

I. Electrical Power.—The development of electrical power industries in the interior aims at: (1) laying the foundation of electrical power industry in the interior, (2) helping in the industrialization of the interior, and (3) developing hydraulic power enterprises.

The National Resources Commission now controls 20 power stations, distributed in important industrial centers in Szechwan, Kweichow, Yunnan, Kwangsi, Sikang, Hunan, Chekiang, Shensi, Kansu and Chinghai. Fourteen of them are already operating. In the southwestern provinces, hydraulic power is abundant and is being thoroughly investigated and developed. A hydraulic power survey has been created to carry on the work of two hydro-electric power projects: one at Lungchih and the other at Shantubo, both in Szechwan. Other projects are being developed in Yunnan, Kweichow and Szechwan.

The 14 power plants now operating were generating 13,400 kilowatts at the end of 1941. The output was scheduled to be increased by 10,000 kilowatts by the end of 1942.

The following table shows the percentage increase of output of some of the plants:

TABLE 2.—PERCENTAGE INCREASE OF THE OUTPUT OF 13 STATE-OWNED POWER PLANTS (1940-100)

NAME OF PLANT	1941	1942
Lungchih Hydraulic Power Plant	100	552
Minkiang Power Plant	226	530
Tzeliutzing Power Plant	1,120	2,220
Ipin Power Plant	650	976
Wanhsien Hydraulic Power Plant	102	109
Kunhu Power Plant (Yunnan)	246	247
Kweiyang Power Plant	111	125
West Hunan Power Plant	122	154
Sian Power Plant	90	81
Paoki Branch, Sian Power Plant	265	323
Lanchow Power Plant	144	108
Hanchung Power Plant	155	169
East Chekiang Power Plant	96	83
TOTAL	160	219

A program for the creation of electrical networks has been adopted by the National Resources Commission. Preliminary work has been started in the Kunming, Tzeliutzing and Minkiang areas, and will be extended to eastern Szechwan, western Szechwan and Central Hunan.

The six plants which have not yet begun operation are: Luhsien, Central Hunan, Liuchow, Tienshui and Sichang power plants and the Sikang Hydraulic Power Plant.

II. Metallurgy.—The National Resources Commission controls eight iron and steel factories, namely, the Tze Yu Steel Works, the Iron and Steel Removal and Re-erection Commission, the Wei Yuan Iron Works, the Ling Kiang Iron Foundry, the Yunnan Iron and Steel Works, the Kiangsi Iron Refinery, the Electric Refining Plant, and the Tze Ho Iron Works.

The 100-ton iron blast furnace and the 1.5-ton electric furnace belonging to the Iron and Steel Removal and Re-erection Commission have been operating since November, 1941. Four other blast furnaces will soon begin operation. This Commission is under the joint control of the National Resources Commission and the Ministry of Military Affairs. It possesses the essential part of the Hanyang Iron Works, formerly in Hanyang, Hupeh, and now reinstalled in Chungking, weighing about forty thousand tons of machinery and materials.

The Wei Yuan Iron Works was scheduled to be completed by the end of 1942. The Tze Ho Iron Works' 15-ton blast furnace was nearing completion at the end of 1942.

The Tze Yu Steel Foundry and the Ling Kiang Iron Foundry were both scheduled to begin production in 1942, while the Yunnan Iron and Steel Works began operation in the spring of 1943. The construction of the Electric Refining Plant was completed in May, 1943.

Two electrolytic copper refineries are in operation, one in Chungking and one in Kunming. The one in Chungking treats crude metal from northwestern Szechwan and Sikang and produces copper of 99.95 per cent purity mainly for military use. The Yunnan copper refinery treats northern Yunnan copper.

China's metallurgical industry is still young. Large-scale production begins in 1943, particularly of iron and steel. The production of pig iron in 1941 was increased by 45 per cent over 1940, while the production in 1942 was increased by three and a half times as compared with 1941 and seven times as compared with 1940.

III. Machinery.—The most important machine making factory under the control of the National Resources Commission is the Central Machine Works, which was first located in Hunan and later moved to Kunming. It produces turbo-generator sets, boiler plants, gas engines, gas producers, machine tools, textile machines, and engines and parts of vehicles, totalling 120 kinds. Other tools such as gear cutters and tooth wheels produced by this factory are by far the best ever produced in China. It is also engaged in manufacturing various kinds of machines. A branch factory of the Central Machine Works in Ipin, Szechwan, has been operating since November, 1941.

Machine works have been established in Kansu, Kwangtung, and Kiangsi. The one in Lanchow is expected to play an important role in the development of the Northwest.

The increase of machinery production may be seen in the following table:

TABLE 3.—PERCENTAGE INCREASE OF MACHINERY PRODUCTION (1939=100)

Kind	1940	1941	1942
Prime movers	2020	2851	3678
Machine tools	206	180	380

IV. Electrical Manufacturing.—Of the electrical manufacturing factories the National Resources Commission has opened, the Central Electrical Manufacturing Works is the most important. It has four different factories, namely,

the wire and cable factory, the vacuum tube and lamp bulb factory, the telephone factory, and the power machinery factory. They are located in Kunming and Kweilin. Branch factories have also been established in Chungking and Lanchow. The products of these factories consist of copper wire, galvanized iron wire, cables, vacuum tubes, lamp bulbs, military and ordinary telephone sets, telephone switchboards, motors, generators, transformers, switch-gears, batteries, and dry cells. A major portion of these products are for the use of the Ministries of Military Affairs and Communications.

The Central Radio Manufacturing Works, located in Kweilin with branch factories in Chungking and Kunming, manufactures radio materials. Since it started operation in 1937, it has been supplying radio transmitting and receiving sets, including hand generators, to the Ministry of Military Affairs, broadcasting station equipment and radiophone sets to the Ministry of Communications and other government organs; and broadcasting receiving sets and amplifiers to the general public.

Another important enterprise is the Central Insulator Works, located at Yuanling, Hunan, with a branch factory at Ipin, Szechwan. It began production in 1938, turning out both high and low voltage insulators. The Ipin branch factory is equipped with up-to-date machinery and has been producing all kinds of goods since October, 1941. One insulator factory is being erected in Kansu to meet the needs of the Northwest.

The production of wires and cables, transformers, radio transmitting and receiving sets, batteries and dry cells has been increasing all the time, while that of other electrical goods fluctuates from time to time due to the lack of raw materials and the insufficient means of transportation.

TABLE 4.—PERCENTAGE INCREASE OF PRODUCTION OF ELECTRICAL APPLIANCE MATERIALS (1938=100)

Kinds of Products	1939	1940	1941	1942
Copper and iron wire	100	545	1427	1025
Lamp bulbs	2952	377	830	887
Vacuum tubes	993	6165	613	2391
Motors	12475	8458	14987	26666
Transformers	1525	1650	2650	6000
Radio transmitting and receiving sets	1194	1576	2053	2140
Broadcasting receiving sets	304	744	2176	2225
Batteries	100	366	1052	1250
Dry cells	208	888	835	466

V. Chemical Industry.—Besides working oil wells in various parts of the country, the National Resources Commission has opened 10 alcohol plants, five in Szechwan, one each in Yunnan, Kweichow, Kansu, Shensi and Sikang. Among them the Tzechung, Neikiang and Luhsien plants are the largest. These plants have an aggregate annual productive capacity of more than 3,000,000 gallons of ethyl-alcohol. The Tzechung Alcohol Works produces absolute alcohol.

Besides, the Commission has set up a vegetable oil cracking plant in Chungking known as the Tung Li Oil Works. In this plant, wood oil is treated for the production of gasoline substitute and Diesel oil. This plant is the first of its kind ever established in China and has now achieved successful results.

Furthermore, the Commission has established a low-temperature coal distillation plant in West Szechwan, where bituminous coal of satisfactory quality is produced in large quantities. This plant produces gasoline substitute, Diesel oil, crude phenol and semi-coke. The gasoline substitute produced there possesses high octane number and is good for aviation.

The Chemical Supplies Plant in Kunming produces soda ash, caustic soda, sodium sulphide, and fire extinguishing chemicals, while the Kiangsi Acid Manufacturing Plant is capable of producing four tons of different kinds of acids daily.

The increase of production of the chemical works operated by the National Resources Commission may be seen in the following table:

TABLE 5.—PERCENTAGE INCREASE OF PRODUCTION OF CHEMICAL INDUSTRIES

Products	1938	1939	1940	1941	1942
Alcohol	100	367	858	1754	2716
Lubricating oil	100	468	608	500	
Soda ash	100	422	844		

PRIVATE INDUSTRIES

I. Removal of Factories.—The removal of privately-owned factories following the outbreak of the war in 1937 was completed in 1940, when 70 per cent of the 639 refugee factories resumed operation in the interior. Four hundred and forty-eight factories received direct assistance from the Ministry of Economic Affairs. A main portion of them moved into the interior in 1938. More than

116,000 tons of equipment and materials and 12,164 skilled workers were brought to the western provinces.

The removal of factories may be divided into four periods. The first period extended from July, 1937, to January, 1938. The removal during this period was under the direction of a special committee jointly organized by the National Resources Commission, the Ministries of Military Affairs, Finance, and Industry (now Economic Affairs). One third of the equipment belonging to the refugee factories had been moved to Hankow in this period. The second period began after the fall of Nanking in December, 1937, and ended in September, 1938, when the fighting extended to Central China. During this period, Hankow was the nation's military and political center, where one third of the removed factories resumed work to produce urgently needed goods, and the rest continued to trek westward. Many factories originally located in Hankow and its neighboring districts joined the migration. The third period began with the opening of the second stage of the present Sino-Japanese war, extending from October, 1938, to December, 1939. In this period, over three-fourths of the refugees factories had proceeded to Szechwan, Hunan, Kwangsi, and Shensi. The fourth period covers the resumption of work of these factories since 1939. Four main routes were followed by the refugee plants, namely, from Hankow to Szechwan via Ichang, from Hankow to Kwangsi via the Tungting Lake in Hunan, from Hankow to western Hunan via Changteh, and from northern cities to Paoki and other Shensi cities via the Lunghai Railway.

The factories that received assistance from the Ministry of Economic Affairs may be divided into two main categories: (1) factories producing military goods, such as machine shops, chemical plants, metallurgical works, factories making communication and transportation apparatus, and medical plants, and (2) other factories producing daily necessities. Assistance to the first kind of factories included: (1) financial grants for their removal, (2) exemption from taxation, (3) reduction of transportation fees by state-owned transportation and communication organs, (4) granting of priority in using transportation facilities, (5) appropriation of expenses for building new plants, (6) guarantee for securing bank loans, and (7) granting of rewards. For the

second kind of factories, assistance included: (1) exemption from taxation and inspection, (2) extension of transportation facilities, and (3) allotment of land for building new plants.

Statistics concerning the removal of factories may be seen in Tables 6, 7 and 8:

TABLE 6.—NUMBER OF FACTORIES REMOVED TO THE INTERIOR

Szechwan	254
Hunan	121
Kwangsi	23
Shensi	27
Other provinces	214
TOTAL	639

TABLE 7.—THE INCREASE AND DISTRIBUTION OF SKILLED WORKERS IN THE REMOVED FACTORIES

KINDS OF WORKERS	1938	1939	1940
Machine making	797	5,588	5,968
Chemical	125	1,376	1,408
Iron and steel	313	860	360
Electrical manufacturing	161	684	744
Textile	135	1,603	1,688
Food	12	549	580
Educational supplies	184	606	635
Other industries	50	270	404
Mining	15	377	377
TOTAL	1,793	11,913	12,164

TABLE 8.—REFUGEE FACTORIES NOW OPERATING IN THE INTERIOR

KINDS OF INDUSTRIES	NO. OF FACTORIES	TONNAGE OF MACHINERY	NO. OF SKILLED WORKERS MIGRATED
Iron and steel	2	37,242	360
Machine making	230	18,587	5,968
Electrical manufacturing	41	5,375	744
Chemical	62	9,756	1,408
Textile	115	32,116	1,688
Food	46	3,213	580
Educational supplies	81	1,665	635
Other industries	54	1,964	404
Mining	8	7,457	377
TOTAL	639	117,375	12,164

The migration of factories, from the coastal regions and war areas to the interior may be taken as the prelude to China's wartime industrial mobilization. Before the outbreak of the present hostilities, the majority of modern industries were concentrated in a few coastal cities, such as Shanghai, Canton and Tientsin. The area which is known as Free China today was mainly agricultural, where very few factories were established. There was not a single blast furnace and not a single coal mine which annually produced more than 100,000 tons of coal. Of more than 5,000,000 spindles which China possessed before the war, only 17,000 were in the interior. The migration of factories opened the chapter of the industrialization of the interior, where there are now 2,000 privately-owned factories operating with modern means of production.

II. Government Assistance to and Supervision of Private Industries.—The Ministry of Economic Affairs encourages and assists the establishment of private industrial enterprises as a means to supplement state-owned industries in the process of the industrialization of the country. It gives financial assistance, offers technical advice, and supplies raw materials and technical personnel.

One of the most important regulations for the assistance to private industries is the *Regulations Governing the Encouragement of and Assistance to Industrial and Mining Enterprises in Time of Emergency*, revised and promulgated on December 12, 1941. The points concerning industrial enterprises in these regulations are:

1. The following industries are to be assisted:

(a) Electrical,

- (b) Mechanical,
 (c) Chemical,
 (d) Metallurgical,
 (e) Textile,
 (f) Processing or manufacturing of agricultural products.

2. The assistance may include one or several of the following methods:

- (a) The interest and profit of these industries will be guaranteed by the Government. The rate of such guarantee is five per cent on paid-up capital and six per cent on debentures, to be compensated by the Government if any loss is sustained. The highest rate is 10 per cent. The period is from five to seven years.
- (b) The difference between the production cost of the year and the market price of the products of the year will be the basis for the Government to give financial assistance as provided for in (a).
- (c) Government loans to private industries will be charged a low rate of interest. Assistance will be given in securing bank loans.
- (d) Export and interport duties may be exempt.
- (e) Interport duties on raw materials may be reduced.
- (f) Freight rates charged by state-owned communication enterprises may be reduced.
- (g) Government-owned land may be let to the factories for five years free of charge. From the sixth year on, a low rental may be charged, but it may not exceed 50 per cent of the prevailing rental in the locality where the factory is located.
- (h) The Government assists in purchasing power equipment and other raw materials.
- (i) The Government assists in training or recruiting technical personnel.

- (j) Assistance may be sought from organs in charge of communication regarding the transportation of machinery, raw materials, finished products, and daily necessities for the workers.

3. Factories applying for guarantee of interest and profit and financial assistance are limited to those having a paid-up capital of \$200,000 or more.

4. The Ministry of Economic Affairs may dispatch officials to inspect factories receiving such aid from the Government or station officials in these factories for constant inspection and auditing.

Financial assistance to private factories includes the extension of loans, investment, and assistance in securing bank loans. Three principles are observed: First, loans are chiefly for the increase of production and the development of productive capacity. Second, investments are given to such industries as to promote better production and to function as model factories. Third, loans may be secured from the Joint Board of the Four Government Banks.

Industrial loans were first limited to cover the cost of removal of factories. Later, the sphere was extended to the construction of factories in the interior, the resumption of operation, transportation and marketing, and the construction of air-raid shelters for the machinery. The amount of loans extended by the Industrial and Mining Adjustment Administration has been increasing from year to year. It was \$20,162,545 in 1941. Chemical, mechanical, and metallurgical industries received the lion's share of the loans. Security loans from the government banks reached \$25,150,000 by the end of 1941, while investments from the Industrial and Mining Adjustment Administration in the same period amounted to \$10,877,532. Small industrial loans handled by the Ministry of Economic Affairs amounted to \$564,000 by the end of 1941, as seen in Tables 9, 10 and 11.

TABLE 9.—FINANCIAL ASSISTANCE TO INDUSTRIAL AND MINING ENTERPRISES
 A.—Classified by Nature of Loans and Investments

	1937	1938	1939	1940	1941
Loans	26,812.50	4,408,026.36	6,604,834.86	14,317,026.93	20,162,545.39
Removal	26,812.50	1,161,764.36	928,367.02	609,386.75	154,131.14
Construction		1,728,087.00	2,567,867.84	6,717,753.32	9,732,440.25
Resumption of Work		158,475.00	43,550.00		
Transportation		58,200.00	1,313,410.00	4,052,235.00	6,593,034.00
Recruiting of Labor			1,540.00	41,540.00	41,540.00
A.R.P. Construction				2,225,000.00	3,641,400.00
Others		1,321,500.00	1,752,110.00	671,110.00	
Investments		176,337.10	3,877,237.85	7,428,194.39	10,877,532.61
Security Loans		4,400,000.00	4,960,000.00	10,210,000.00	25,150,000.00
TOTAL	26,812.50	8,984,368.46	15,442,072.71	31,955,246.39	56,190,078.00

SOURCE:—The Industrial and Mining Adjustment Administration

TABLE 10.—FINANCIAL ASSISTANCE TO INDUSTRIAL AND MINING ENTERPRISES
 B.—Classified by Industries

INDUSTRIES	Iron and Steel	Coal Mining	Mechanical	Electrical Manufacturing	Chemical	Textile	Food	Educational Supplies	Public Utilities	Others	TOTAL
1937— Loans	...	...	3,172.50	6,700.00	0,040.00	...	...	...	...	10,000.00	26,812.50
1938— Loans	660,000.00	500,000.00	436,947.66	357,870.00	1,496,916.70	384,792.00	43,800.00	91,200.00	85,000.00	371,500.00	4,408,026.36
Investments Security Loans	...	...	...	...	...	176,337.10	...	...	...	...	176,337.10
1939— Loans	...	...	1,000,000.00	...	700,000.00	...	...	...	2,700,000.00	...	4,400,000.00
Investments Security Loans	...	650,000.00	980,804.00	189,472.10	2,615,016.76	563,152.00	107,800.00	124,480.00	120,000.00	744,110.00	6,604,834.86
1940— Loans	1,415,450.00	834,000.00	2,814,401.68	336,052.50	5,549,370.75	1,602,542.00	134,000.00	164,050.00	410,000.00	1,057,160.00	14,317,026.93
Investments Security Loans	1,000,000.00	...	...	46,329.80	4,717,520.96	1,487,798.44	61,545.10	...	115,000.00	...	7,428,194.39
1941— Loans	1,200,000.00	...	1,250,000.00	300,000.00	2,280,000.00	...	...	...	5,260,000.00	...	10,210,000.00
Investments Security Loans	2,090,000.00	2,640,804.58	3,508,759.81	573,800.00	6,642,000.00	1,180,540.00	822,000.00	194,000.00	1,250,620.00	1,259,110.00	20,162,545.39
Investments Security Loans	1,000,000.00	...	1,000,000.00	...	6,915,020.97	1,847,511.64	...	...	115,000.00	...	10,877,532.61
Investments Security Loans	2,000,000.00	...	1,050,000.00	450,000.00	5,050,000.00	3,600,000.00	...	1,500,000.00	10,000,000.00	1,500,000.00	25,150,000.00

SOURCE:—The Industrial and Mining Adjustment Administration

TABLE 11.—SMALL INDUSTRIAL LOANS EXTENDED BY THE MINISTRY OF ECONOMIC AFFAIRS (1939—1941)

KINDS OF INDUSTRY	1939		1940		1941	
	No. of Factories	Loans in Dollars	No. of Factories	Loans in Dollars	No. of Factories	Loans in Dollars
Textile	4	40,000	7	98,000	6	162,000
Leather Tanning	2	47,000	3	100,000	...	...
Paper Making	2	55,000	2	35,000	3	95,000
Mechanical	...	...	5	69,000	6	132,000
Printing	4	26,900	4	36,000	2	20,000
Medical	1	10,000	2	20,000	3	40,000
Alcohol	1	5,000	2	50,000	...	...
Soap and Candles	...	...	1	30,000	1	30,000
Farm Tools	1	7,000	...	...	2	45,000
Others	...	...	5	148,000	3	40,000
TOTAL	15	190,900	31	586,000	26	5,64000

SOURCE:—The Ministry of Economic Affairs

The percentage distribution of industrial loans may be seen in the following two tables:

TABLE 12.—PERCENTAGE DISTRIBUTION OF INDUSTRIAL LOANS

Loans for removal and re-establishment of factories	7.8%
Loans for construction and equipment	49.3%
Loans for construction of air-raid precaution establishments	13.5%
Other loans	29.4%

TABLE 13.—PERCENTAGE DISTRIBUTION OF INDUSTRIAL LOANS BY INDUSTRIES

Chemical	21.26%
Electrical power	20.70%
Machinery	19.93%
Metallurgical	19.37%
Textile	14.04%
Food and other industries	4.7%

These figures show the Government's efforts in promoting and assisting in the development of private industries. They also show that in extending financial help, preference was given to: (1) industries manufacturing articles of military use, (2) industries manufacturing daily necessities, and (3) industries that could contribute to the productivity and manufacturing capacity of the interior.

Loans for the construction of air-raid precaution establishments included those for the construction of branch factories and air-raid shelters for machinery. Thirty Chungking factories have built such shelters with financial and technical assistance from the Industrial and Mining Adjustment Administration.

The Industrial and Mining Adjustment Administration invests in various kinds of industries with a view to promoting new industries and improving the existing factories. Such investments aim at: (1) promoting new industries through government effort, (2) assisting in the establishment of such industries that private interests cannot afford to establish independently, (3) establishing such industries as are related to the people's livelihood through government assistance and effort, and (4) erecting important enterprises with the cooperation of other government organs.

The Administration has a wood alcohol distillation plant at Loshan and a model cotton mill at Suining, both being in Szechwan. The former is capitalized at \$1,445,444, producing wood alcohol and acetic acid through low-temperature distillation; the latter promotes the use of the newly-invented Yeh Tsing jennies. Investments were made in many factories, including the China Development Company, the Kien Kuo Paper Mill, the Central China Cement Plant, the Szechwan Oil Cracking Plant, the Kien

Cheng Hydraulic Lime Company, the Kiangsi Cement Works, and the Yun Feng Paper Mill.

For the supply of raw materials and machines, the Industrial and Mining Adjustment Administration created a Supplies Bureau in 1939. Before the Burma campaign, the Administration purchased a total of 5,800 tons of metals, chemical and electrical materials. It now purchases all kinds of materials from India and other countries, to be sent in by aerial transportation. More than 1,000 factories were benefited in 1941. Of them, 76 per cent were private factories. The Supplies Bureau is also engaged in the purchase and supply of materials within this country. Special attention is directed to the distribution of motors, prime movers, machine tools, and small tools.

The Ministry of Economic Affairs is paying increasing attention to the supply of electric power. Among modern factories in the interior, many have their own power plants. But the majority of the factories have to rely on the public power plants for electricity. The Ministry is therefore adopting steps to enlarge existing power plants and to build new ones. Many plants are sheltered in dugouts or protected by reinforced concrete, while others are divided into several units and put up in different places in order to minimize the danger from air raids.

The supply of skilled workers to private factories is another function undertaken by the Industrial and Mining Adjustment Administration. Nearly 2,000 skilled workers and technicians had registered with the Administration by June, 1942. Big factories are also training skilled workers under the direction and supervision of the Administration. The first batch of 300 persons completed a course of one year in March, 1942.

III. Number of Factories and Their Production.—Free China has today a total of nearly 2,000 privately-owned factories registered with the Ministry of Economic Affairs. The distribution of these factories may be seen in the following two tables:

TABLE 14.—GEOGRAPHICAL DISTRIBUTION OF PRIVATELY-OWNED FACTORIES IN FREE CHINA

(Registered with the Ministry of Economic Affairs up to May 1942).

Province or Municipality	No. of Factories
Chungking	584
Szechwan	352
Kweichow	49
Yunnan	49
Kwangsi	173
Kwangtung	13
Hunan	368
Hupei	9
Fukien	23
Kiangsi	55
Shensi	170
Kansu	63
Sikang	7
TOTAL	1,915

TABLE 15.—PERCENTAGE DISTRIBUTION OF PRIVATELY-OWNED FACTORIES BY INDUSTRIES

Metallurgical	7.10
Machinery	28.55
Electrical appliance	3.15
Chemical	27.24
Textile and clothing	22.72
Food	5.15
Printing	2.85
Others	3.24
TOTAL	100.00

Since March, 1941, the Ministry of Economic Affairs has been conducting a nation-wide registration of private factories. Returns up to December, 1942, indicated that there were nearly 2,000 private factories using mechanical power for production. Details of these factories are, however, not yet available.

An analysis may be based, however, on the 1941 statistics. By the end of 1941, 1,310 private factories had registered with the Ministry of Economic Affairs. They may be classified into eight groups, totalling 37 kinds. This figure already registered a 4-time increase over the pre-war period. Most of these factories were concentrated in the Chungking area, totalling 451. Hunan ranked second and Szechwan (excluding Chungking) third. The reason for the better industrial development of Szechwan and Hunan was that the two provinces have greater communication and transportation facilities. Chemical factories constituted the largest number, 381. Machinery factories came second.

TABLE 16.—NUMBER OF PRIVATE FACTORIES REGISTERED WITH THE MINISTRY OF ECONOMIC AFFAIRS (1938—1941)

KINDS OF INDUSTRY	1938										1941										TOTAL
	Chungking	Hunan	Szechwan	Kwangsi	Shensi	Kansu	Kiangsi	Kweichow	Yunnan	Chekiang	Fukien	Hupeh	Kwangtung	Sikang	Kiangsu	Ninghsia	Honan	Anhui	Shans	Suiyuan	
Metallurgical	16	31	26	5	11	3	4	10	3	1	1	1	1	1	1	1	1	1	1	1	
Machinery	210	63	10	64	11	1	3	7	3	1	1	1	1	1	1	1	1	1	1	1	
Electrical Manufacturing	27	3	3	6	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
CHEMICAL—																					
Acids	7	10	9	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	
Liquid Fuel	17	15	50	5	5	1	2	4	1	1	1	1	1	1	1	1	1	1	1	1	
Pottery	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Cement	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Rubber	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Paper	3	13	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Leather	29	5	2	4	3	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Paints and Lacquer	4	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Dyeing	2	2	8	1	2	4	1	2	1	1	1	1	1	1	1	1	1	1	1	1	
Matches	12	4	4	2	3	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	
Medicine	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Starch	17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Candles and Soap	4	1	7	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	
Fats	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Cosmetics	42	74	46	11	30	24	14	6	6	1	2	5	1	2	4	3	1	1	1	1	
Textile and Clothing	4	5	4	7	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
FOOD, DRINKS AND TOBACCO—																					
Rice Hulling	4	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Wheat Flour	4	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Sugar	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Salt	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Wine	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Biscuits and Candies	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Can	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tobacco	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Condiments	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tea	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Printing and Stationery	17	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Others—																					
Water Works	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Saw Mills	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tooth Brushes	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Packing	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Coal Briquettes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Hog Bristles	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Ice	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

The operation of these factories is under the constant direction and supervision of the Industrial and Mining Adjustment Administration. Following the outbreak of the Pacific War in December, 1941, special efforts have been made to accelerate steel production and the technical improvement in iron and steel smelting. The Yu Hsin Iron and Steel Works, the China Development Company, the Jen Ho Iron Works, the China Steel Refining Plant, and the Ho Chi Iron and Steel Works have all been using Bessemer converters. The China Development Company's 10-ton open-hearth furnace is also operating.

Free China had 195,000 spindles for cotton spinning by August, 1942, an increase of eight times the total spindles of 1938. The annual paper production in the interior amounted to 65,000 reams in 1942, six times the pre-war figure. The annual production of cement amounted to 300,000 barrels, while that of hydraulic lime approached 20,000 piculs.

The production of private industries may be seen in the following table:

TABLE 17.—INDEX NUMBERS OF THE PRODUCTION OF PRIVATE INDUSTRIES (1940=100)

KINDS OF PRODUCTS	1941	1942
Iron	259	555
Steel	122	146
Prime movers	200	214
Machine tools	127	133
Acids	105	237
Caustic soda	300	324
Bleaching powder	348	458
Alcohol	104	111
Machine-spun cotton yarn	253	261
Wheat flour	139	145

Refined iron, steel, machine tools, hydrochloric acid, bleaching powder, alcohol, hydraulic lime, lamp bulbs and pencils which were not produced in the interior before the outbreak of the war, are now produced in considerable quantities to meet local needs. The production of cotton yarn, wheat flour, soap, matches, machinery, and leather has been greatly increased.

The main difficulties that the private industries encounter at present, like the state-owned enterprises, are: (1) lack of a part of industrial materials, (2) insufficient transportation and communication facilities, and (3) lack of technical personnel.

IV. A Review of Private Industries.—

(1) Metallurgy.—Free China has three factories producing steel and more than 14 factories producing iron. The largest metallurgical works are the Yu Hsin Iron and Steel Works, the China Development Company, the China Steel Plant, and the Jen Ho Iron Works. They use electric, Bessemer, and open-hearth furnaces. The Jen Ho's 1.5-ton Bessemer furnace and the China Development Company's 10-ton Martin furnace were only erected in the summer of 1942.

The largest iron works are the China Development Company, the Jen Ho Iron Works, the Fu Chang Iron Works, the Kien Yu Company, and the Hsin Chi Chu Kiang Iron Works. The China Development Company's 30-ton furnace is the largest furnace built by private factories.

(2) Machinery.—Machinery production by private factories in Free China may be grouped into five main categories, namely, military materials, machine tools, prime movers, industrial machines, and metals of daily use.

Owing to the fact that the construction of most of the arsenals has been completed, private factories are producing less military goods than before. They are, however, still turning out bayonets, gas masks, machine gun parts, and shells,

The production of machine tools, such as lathes, boring, planing and grinding machines has been greatly increased. More than 1,000 lathes of various kinds were produced in 1941. The Hsun Chang Machine Works and the China Automobile Manufacturing Company have done much to improve the technique of machine making. In 1941, a total of 1,422 machine tools were made, excluding small tools.

The Hsun Chang, Hung Shung, and Ming Sung Machine Works also manufacture steam engines. In 1941, a total of 56 steam engines were produced by these factories totalling 6,416 h.p. Other kinds of prime movers produced by Free China factories include gas engines, Diesel engines, boilers, and water turbines. Industrial machines are being produced on a large scale, including cotton and wool spinning and weaving, sewing, paper making, oil cracking, iron and steel refining, rice hulling, printing, and fire fighting machines.

Shipbuilding factories include the Ming Sung Industrial Company and the San Peh Steam Navigation Company. They both build and repair ships. The Hsin Chung Engineering Company manufactures Diesel oil and gas engines for automobiles.

Products for daily use include needles, oil lamps, safes, medical apparatuses, and educational supplies.

At the end of 1941 there were 379 machine factories in Free China producing more than 120 kinds of machinery, parts and supplies.

(3) Electrical Manufacturing.—Electrical manufacturing includes the manufacture of power engines, radio, telegraph and telephone sets, batteries and cells.

There are three factories manufacturing power engines, namely, the Watson Electric Manufacturing Company, the Ta Hua Electric Manufacturing Company, and the Hua Cheng Electric Manufacturing Plant, the first two being in Chungking and the third in Hengyang, Hunan. The China Development

Company, the China Radio Company, and the Tien Shen Manufacturing plant are turning out portable generators. The Hua Cheng and Ta Hua Plants as well as the Shang Chwan Industrial Company are manufacturing motors. Five factories make transformers, and a number of others manufacture electric wires, bulbs, switchboards, and other electrical materials.

The China Machine Works, the Jih Hsin Electric Batteries Works, the Yung Shen Industrial Plant, the Hsin Hua Company, and a number of other plants are turning out batteries and cells.

(4) Chemicals. Chemical products include: (1) acids and alkali, (2) paper, (3) leather, (4) alcohol, (5) oil, fats, and related products, (6) cement, (7) pottery and porcelain, (8) matches, (9) fire bricks, (10) dyes, and (11) miscellaneous chemical products.

Free China had 24 acid and soda manufacturing plants by the end of 1941. Their names and capacity of production are as follows:

TABLE 18.—MONTHLY PRODUCTION OF ACIDS AND SODA IN FREE CHINA
(Unit: Tons)

NAME OF PLANT	Sulphuric Acid	Hydrochloric Acid	Nitric Acid	Caustic Soda	Soda Ash	Sodium Sulphide	Bleaching Powder
Tien Yuan Electrical and Chemical Manufacturing Plant	...	30	...	150	...	...	165
Ke Tai Chemical Works	...	...	...	...	...	10	...
Yu Lien Chemical Works	...	...	...	...	40	...	...
China Acid Manufacturing Co.	40	...	...	...	...	...	...
Tsaichiachang Acid Manufacturing Cooperative	8	0.5	...	...	...	...	...
Ching Hwa Dyeing Works	...	...	...	...	...	20	...
Jui Hwa Co.	...	...	...	...	15	...	...
Kwang Yi Chemical Plant	55	...	...	...	...	...	...
Hsin Hwa Chemical Mfg. Plant	...	...	...	...	3	...	...
Yu Chwan Chemical Plant	8	3	0.6	...	...	...	...
Kien Yeh Chemical Co.	5.5	...	...	...	...	...	...
Yuan Chi Yung Yuan Sulphuric Acid Works	5	...	...	...	...	...	...
Yu Min Soda Works	...	...	...	...	30	...	...
Tung Yi Soda Works	...	...	...	...	50	...	...
Kai Chi Soda Works	...	...	...	...	30	...	...
Kai Yu Soda Works	...	...	...	...	35	...	...
Ta Chung Acid and Soda Co.	8	...	...	...	...	...	...
Ta Li Acid Manufacturing Plant	4	1.5	...	...	...	...	...
Kunming Acid Manufacturing Plant	7	...	...	...	...	...	...
Kiangsi Sulphuric Acid Works	7.5	...	...	...	...	...	...
Chekiang Chemical Works	25	7	1.2	...	...	...	...
Chi Cheng Acid Works	8	3	2	...	...	...	...
TOTAL	181	45	3.8	150	167	30	165

NOTE.—Except Ta Chung (Kweichow), Ta Li (Yunnan), Kunming, Kiangsi, Chekiang, and Chi Cheng (Shensi), all other factories are in Szechwan. Kiangsi and Chekiang plants are provincial enterprises.

Free China has 14 modern paper mills. Half of them are privately owned. They are producing printing paper, newsprint, wrapping, tobacco and match paper. There are scores of native paper mills. The production of the private paper mills may be seen in the following table:

TABLE 19.—PRIVATE PAPER MILLS IN FREE CHINA

NAME OF MILL	Location	Daily Production in Tons
Lung Chang Paper Mill	Szechwan	4
Kien Kuo Paper Co.	Szechwan	3.5
Kia Lo Paper Mill	Szechwan	2
Cheng Chung Paper Mill	Szechwan	1
Chung Yuan Paper Mill	Szechwan	0.5
Tungliang Paper Co.	Szechwan	1
Southwest Paper Mill	Kweichow	1
Yun Feng Paper Mill	Yunnan	1.5
Yi Shen Paper Co.	Shensi	1
TOTAL		15.5

NOTE.—Lung Chang has been reorganized into the Central Paper Mill, now under the control of the Central Trust.

More than a dozen leather tanning factories are turning out both sole and upper leather. The Han Chung Leather Manufacturing Plant is producing leather fit for aviation use. The Government is helping several factories producing glue for industrial use since such materials cannot be imported. The production of the existing leather tanning plants at the end of 1942 was as follows:

TABLE 20.—MONTHLY PRODUCTION OF PRIVATE LEATHER TANNING FACTORIES IN FREE CHINA

(Unit: Sheets)

NAME OF PLANT	Location	Sole Leather	Upper Leather	
Hua Sheng Chang Chi Leather Mfg. Plant	Szechwan	900		
Han Chung Leather Manufacturing Plant		900	1,700	
Chiu Hsin Leather Manufacturing Plant		1,700	300	
Kwang Hwa Leather Manufacturing Plant		600	1,500	
Ta Cheng Leather Manufacturing Plant		80	600	
West China Reconstruction Co.		200	600	
Erh Min Leather Manufacturing Plant		150	1,200	
Ching Hsin Leather Manufacturing Plant		300	450	
Northwest Chemical Leather Manufacturing Plant		Shensi	1,000	1,200
Tung Tsai Leather Manufacturing Plant			300	
Jung Hsin Co. (Sian Leather Plant)	600			
Feng Chi Leather Manufacturing Plant	Kansu	120	350	
Kien Hwa Leather Manufacturing Plant		200	150	
Others		800	1,000	
TOTAL		7,850	9,050	

Alcohol manufacturing is a new enterprise in the interior. Free China produces more than 7,000,000 gallons of alcohol a year. Szechwan alone produces 5,000,000 gallons. A portion can be used as gasoline substitute. Forty-three alcohol distilleries were operating at the end of 1942. They are:

TABLE 21.—PRIVATE ALCOHOL FACTORIES IN FREE CHINA

NAME OF PLANT	Location	Daily Production in Gallons
Shang Chwan Industrial Co.	Szechwan	1,500
Pao Ta Tung Li Alcohol Plant	Shensi	300
Pao Ho Tung Li Alcohol Plant	Shensi	100
Tzechung Li Ho Chemical Works	Shensi	250
Fu Hsin Alcohol Mfg. Co.	Szechwan	1,500
Ta Chang Manufacturing Plant	Szechwan	400
Chu Chwan Alcohol Plant	Szechwan	200
Sheng Cheng Synthetic Gasoline Plant	Szechwan	350
Ta Cheng Chemical Works	Szechwan	400
Fu Hwa Alcohol Plant	Szechwan	300
Yung Chwan Alcohol Plant	Szechwan	350
Hsing Min Alcohol Plant (Ta Hwa Co.)	Szechwan	1,500
Chung Hsin Alcohol Plant	Szechwan	430
Si Hwa Tung Li Alcohol Plant	Shensi	300
Pao Chi Liquid Fuel Plant	Shensi	50
Kien Kuo Alcohol Plant	Szechwan	200
Chu Feng Industrial Co.	Szechwan	600
Kwangsi Alcohol Plant	Kansu	120
Lanchow Pharmaceutical Plant	Kansu	
Jung Hsin Industrial Co.	Kansu	20
First Branch, Yung Chwan Alcohol Plant	Szechwan	350
New China Synthetic Gasoline Plant	Szechwan	500
Kwang Ta Alcohol Plant	Szechwan	400
Central China Alcohol Plant	Szechwan	200
Ta Chi Alcohol Plant	Szechwan	100
King Chwan Alcohol Plant	Szechwan	1,000
Chung Chwan Chemical Works	Szechwan	1,200
Neikiang Chemical Works	Szechwan	120
Fu Jen Alcohol Plant	Szechwan	300
Kwang Lun Alcohol Plant	Szechwan	600
Yao Hwa Alcohol Plant	Szechwan	300
Central Chemical Works	Szechwan	100
Kwangyuan Branch, Ta Hwa Cotton Mill	Szechwan	500
Tzechung Co-operative's Alcohol Plant	Szechwan	800
Lu Ho Alcohol Plant	Shensi	300
New Asia Alcohol Plant	Shensi	300
Tsaichiapo Alcohol Plant (Jung Hsin Co.)	Shensi	1,000
Yimencheng Alcohol Plant	Shensi	300
Ta Hwa Alcohol Plant	Shensi	1,000
Pingliang Hsin Min Alcohol Plant	Kansu	50
Chemical Plant, Jung Hsin Co.	Kansu	120
National Defense Alcohol Plant (1st)	Szechwan	1,000
National Defense Alcohol Plant (2nd)	Szechwan	1,000
TOTAL		19,410

Sugar refining is an allied industry with alcohol distilling. Seven modern sugar refineries were operating at the end of 1941. Their names and capacities are:

TABLE 22.—DAILY PRODUCTION OF PRIVATE SUGAR REFINERIES

NAME OF PLANT	Location	Production (in Metric tons)
China Sugar Refining Co.	Szechwan	10
Ta Hwa Industrial Co.	Szechwan	4
To Kiang Sugar Co.	Szechwan	4.5
Hwa Yuan Sugar Plant	Szechwan	3
Tzechung Co-operative	Szechwan	15
Kweichow Sugar Plant	Kweichow	0.2
West Hunan Sugar Plant	Hunan	0.15
TOTAL		36.85

About 20 vegetable oil plants are producing gasoline and kerosene substitutes, totalling more than 30,000 gallons a month. About ten more factories were scheduled to produce gasoline and kerosene substitutes in 1942, with a productive capacity of 50,000 gallons. Diesel oil substitute is also produced.

TABLE 23.—PRIVATE OIL REFINING PLANTS IN FREE CHINA

NAME OF PLANT	MONTHLY PRODUCTION	
	Gasoline & Kerosene Substitutes (Gallons)	Diesel Oil Substitute (Tons)
China Oil Refining Plant	5,000	
Ta Ming Oil Refining Plant	3,000	
Kien Cheng Oil Refining Plant	3,500	
Hsin Yuan Oil Refining Plant	950	
Kien Kuo Oil Refining Plant	900	
Southwest Chemical Plant	24,000	
China Vegetable Oil Plant (Chungking)	300	40
China Vegetable Oil Plant (Kweiyang)	400	30
China Vegetable Oil Plant (Hengyang)	1,000	15
Chung Fu Oil Refining Plant of the China Reconstruction Co.	12,000	90
Hsin Chung Oil Refining Plant	1,500	2.5
Chang Ning Chemical Works	3,600	13
Ta Hwa Oil Refining Plant (Chungking)	3,750	30
Ta Hwa Oil Refining Plant (Pengshui)	1,850	15
Ta Hwa Oil Refining Plant (Yunyang)	1,850	15
Ta Hwa Oil Refining Plant (Shihchu)	1,850	15
Ta Hwa Oil Refining Plant (Wanhsien)	1,850	15
Ta Hwa Oil Refining Plant (Fengtu)	1,850	15
Ta Hwa Oil Refining Plant (Kwangan)	900	7.5
Tien Yuan Oil Refining Plant	1,850	15
Ta Lu Chemical Works		10
Yu Kang Jung Chi Oil Refining Plant		15
Mei Ya Company's Oil Refining Plant		25
Ming Sung Industrial Company's Oil Refining Plant		20
Kai Yuan Liquid Fuel Plant		4
TOTAL	71,900	392

Four factories are manufacturing resin sandarach gum. They are : and turpentine by extracting oil from

TABLE 24.—SANDARACH GUM EXTRACTION FACTORIES IN FREE CHINA

NAME OF PLANT	Monthly Production	
	Resin (Piculs)	Turpentine (Pounds)
Nanchwan Branch, China Vegetable Oil Plant	300	1,500
Cheng Hsin Sandarach Gum Plant	210	900
Kai Kien Resin Plant	600	3,000
San Ho Chemical Works	300	1,500
TOTAL	1,410	6,900

Animal fats, vegetable oil, and caustic soda are the chief materials for the manufacturing of soap in China. Since the interruption of the import of soda from abroad, the Tien Yuan Electrochemical Manufacturing Plant, under government assistance, has been manufacturing liquid caustic soda. Soap factories in Free China turn out 60,000 boxes of soap every month. One of the by-products of the soap industry is glycerine. Two factories are producing six tons of glycerine a month by this method. Several other factories produce glycerine by other methods. Free China produces 100,000 packages (six candles a package) of candles a month. (See Tables 25, 26, and 27.)

TABLE 25.—MONTHLY PRODUCTION OF SOAP FACTORIES

NAME OF FACTORY	Monthly Production in Boxes
Yung Hsin Chemical Works	4,500
Southwest Chemical Plant	5,000
Li Min Soap Factory	4,000
Ta Hwa Soap Factory (Chungking)	3,000
Kai Li Development Co.	1,300
Soap and Candles Co-operative	1,500
Lungmenhao Soap Co-operative	1,000
Hsien Chi Ta Lai Soap Factory	1,000
Ta Hsin Chemical Works	600
Kiang Nan Soap and Candles Factory	900
Han Chang Soap Factory	800
Pai Lin Soap Factory	800
Tien Lun Soap Factory	700
Mei Teh Industrial Co.	600
Ming Sung Industrial Company's Oil Refining Plant	200
Yung Min Soap Manufacturing Plant	300
Pai Li Soap Factory	900
Chang Kiang Soap Factory	500
Mei Lien Soap Factory	200
China Chemical Works	300
Ta Chang Soap Factory	600
Kweichow Chemical Works	1,000
Kuo Min Soap Factory	500
Jung Hsin Industrial Company's Lanchow Pharmaceutical Plant	300
Shensi Development Corporation's Chemical Plant	1,500
Others	28,000
TOTAL	60,000

TABLE 26.—MONTHLY PRODUCTION OF GLYCERINE

NAME OF PLANT	Monthly Production in Tons
Southwest Chemical Works	4
Yung Hsin Chemical Works	2
China Oil Refining Plant	1
Chang Kiang Pharmaceutical Plant	0.1
TOTAL	7.1

TABLE 27.—MONTHLY PRODUCTION OF CANDLES

NAME OF PLANT	Monthly Production in Packages
Kweichow Chemical Works	5,000
Kiang Nan Soap and Candles Factory	6,000
Yi Hsin Industrial Works	7,000
Yi Hwa Domestic Industrial Works	25,000
Southwest Chemical Works	30,000
Yung Min Soap Manufacturing Plant	7,000
Pai Li Factory	7,000
Shensi Development Corporation's Chemical Plant	5,000
Lungmenhao Soap Cooperative	5,000
TOTAL	97,000

There are 11 cement manufacturing plants in Free China. Their names and productive capacity are as follows:

TABLE 28.—DAILY PRODUCTION OF CEMENT

Name of Plant O. C.	Location	Daily Production (Barrels)
Szechwan Cement Plant	Szechwan	900
Central China Cement Plant	Hunan	600
Kunming Cement Plant	Yunnan	100
Kweiyang Cement Plant	Kweichow	50
Kien Hwa Cement Plant	Shensi	5
Kien Cheng Hydraulic Lime Plant	Szechwan	(100 piculs)
Kwangsi Cement Plant	Kwangsi	300
Kiangsi Cement Plant	Kiangsi	100
Kia Hwa Cement Plant	Szechwan	50
Kwangyuan Cement Plant	Szechwan	50
Yunnan Cement Plant	Yunnan	50
TOTAL		2,205*

*Excluding hydraulic lime

More than 10 factories are producing materials for electrical and chemical uses under high temperatures. Most important among them are fire bricks. The production of fire bricks may be seen in the following table:

TABLE 29.—MONTHLY PRODUCTION OF FIRE BRICKS

NAME OF PLANT	Location	No. of Fire Bricks
Ta Hsin Fire Brick Plant	Szechwan	30,000
Teh Shon Pottery Plant	Szechwan	25,000
Kwang Ta Porcelain Plant	Szechwan	10,000
Kien Hsin Porcelain Plant	Shensi	40,000
China Pottery Co.	Hunan	40,000
Yung Sheng Porcelain Plant	Szechwan	10,000
Weiyuan Fire Brick Plant	Szechwan	10,000
China Development Co.	Szechwan	20,000
Kweichow Pottery and Porcelain Plant	Kweichow	3,500
Others		10,000
TOTAL		198,500

Of Free China's five modern glass factories, the Jui Hwa Glass Manufacturing Plant is the largest, producing 10,000 pieces of glassware every day. The glass department of the Kien Hwa Electrical Manufacturing Plant makes more than 40,000 electric bulbs a month. Native glass factories are numerous and are distributed throughout the country. There are only four enamelware manufacturing factories in Free China. The largest one is the Cheng Si Enamel-Ware Manufacturing Plant, manufacturing 15,000 medical plates, 18,000 cups and more than 10,000 miscellaneous enamelled goods every month.

There are 74 match manufacturing factories in Free China with an aggregate annual production of 100,000 boxes of matches. The southwestern provinces are self-sufficient in matches, while Szechwan sends about 20,000 boxes a year to the northwestern provinces. The largest match raw material manufacturing factory is the China Match Raw Material Plant, supplying over half of the raw materials needed in the interior. The production of matches may be summarized in the following table:

TABLE 30.—ANNUAL PRODUCTION OF MATCHES IN FREE CHINA

(Unit: Boxes; 1 box=7,200 packages)

PROVINCE	No. of Factories	Annual Production
Szechwan	37	50,000
Sikang	1	1,200
Kweichow	9	5,000
Hunan	2	1,800
Kiangsi	3	10,000
Fukien	1	
Shensi	5	3,300
Kansu	4	2,660
Chinghai	1	
Kwangtung	4	
Anhwei	3	
Yunnan	4	14,000
TOTAL	74	87,960

Other chemical plants include rubber, paint, dyeing, and pharmaceutical manufacturing factories. Among them the best known is the Chung Nan Rubber Manufacturing Plant, which has factories in Chungking, Kunming, Kweiyang, and Kwangyuan. Its main work is to remake automobile tires from worn-out ones with a monthly capacity of remaking 2,000 tires.

(5) Textiles.—Free China's textile industry may be classified into four kinds, namely, cotton, wool, silk, and ramie, but the most important is cotton spinning and weaving.

Cotton mills are largely concentrated in Szechwan and Shensi. Of the 16 large factories, only five are in other provinces. Most of the spindles were removed from coastal and war provinces

and reinstalled in the interior. Up to August, 1942, a total of 170,000 spindles had been set up, eight times the pre-war total in the interior. Free China had about 25,000 spindles in June, 1943. About 10 small cotton mills are operating with small spinning and weaving machines. China manufactures most of the looms.

Details of cotton spinning may be seen in the following table:

TABLE 31.—COTTON MILLS IN FREE CHINA

NAME OF MILL	Location	No. of Spindles
Yu Hwa Cotton Mill	Chungking	23,000
Shun Hsin Cotton Mill	Chungking	10,000
Shasi Cotton Mill	Chungking	6,400
Yu Feng Cotton Mill	Chungking	25,000
Yu Feng Cotton Mill	Hochwan, Szechwan	15,000
Shun Hsin Cotton Mill	Paoki	8,000
Ta Hwa Cotton Mill	Sian	20,000
Ta Hwa Cotton Mill	Kwangyuan, Szechwan	5,000
Sienyang Factory	Sienyang, Shensi	5,000
Kwangsi Textile & Mechanical Plant	Kweilin	2,300
Yu Tien Cotton Mill	Kunming	16,700
Jung Hsin Co.	Tsaichiapo, Shensi	1,200
Yunnan Textile Plant	Kunming	5,000
Hunan Cotton Mill	Ankiang	10,000
Chekiang Cotton Mill	Chekiang	5,000
Ministry of Military Affairs Textile Factory	Chungking	10,000
TOTAL		167,600

NOTE: (1) The last four mills are government-owned.

(2) Shasi had 2,200 spindles, Jung Hsin Co. 2,000, and Yu Feng 5,000, scheduled to be installed in 1942.

Eleven factories are engaged in dyeing, handling 130,000 bolts of cloth a month. They are:

TABLE 32.—DYEING FACTORIES IN FREE CHINA

NAME OF PLANT	Location	Monthly Capacity (No. of Bolts Dyed)
Chungking Dyeing Plant	Chungking	16,000
Ho Hsing Dyeing Plant	Chungking	14,000
Tung Hsin Mechanical Dyeing Plant	Chungking	12,000
Yu Teh Dyeing Plant	Chungking	12,000
Yu Hwa Cotton Dyeing & Weaving Plant	Chungking	6,000
Ta Min Dyeing and Weaving Plant	Peipei, Szechwan	15,000
Yi Hwa Dyeing & Weaving Co.	Chengtu	3,000
Chu Hsin Dyeing & Weaving Co.	Yuanling, Hunan	12,000
Cheng Ta Mechanical Dyeing Plant	Yuanling, Hunan	12,000
Li Tai Industrial Works	Sian	12,000
Tung Hwa Dyeing Plant	Sian	16,000
TOTAL		130,000

There are six wool spinning and weaving factories in Free China. The best ones are the China Wool Spinning and Weaving Mill, the Min Chih Spinning and Weaving Mill, and the Chwan Kang Wool Spinning and Weaving Mill.

Two silk factories and two ramie factories are operating.

(6) Food, Drinks and Tobacco.—There are 21 flour mills in the interior, producing 20,000 bags of flour a day. Nine others were scheduled to begin operation in 1942. They are:

TABLE 33.—FLOUR MILLS IN FREE CHINA

NAME OF MILL	Location	Daily Production in Bags
Fo Hsin Flour Mill	Szechwan	400
Fu Hsin Flour Mill	Szechwan	1,800
Fu Min Flour ...	Szechwan	800
Sui Feng Flour Mill	Szechwan	300
Kien Cheng Flour Mill	Szechwan	400
Chao Feng Flour Mill	Szechwan	400
Yun Li Industrial Company's Wanhsien Flour Mill	Szechwan	160
Yun Li Industrial Company's Paisha Flour Mill	Szechwan	200
China Food Industry Company	Szechwan	1,200
Tien Cheng Flour Mill	Szechwan	500
Hochwan Flour Mill	Szechwan	400
Sienfeng Flour Mill	Shensi	5,000
Hwa Feng Flour Mill	Shensi	3,400
Fu Hsin Flour Mill's Paoki Branch	Shensi	2,000
Ta Hsin Flour Mill	Shensi	1,200
Hwo Ho Flour Mill	Shensi	500
San Tai Flour Mill	Shensi	400
Siang Feng Flour Mill	Shensi	400
Ta Hsin Flour Mill	Kweichow	500
Kwangsi Flour Mill	Kwangsi	500
Hsin Hsin Flour Mill	Hunan	150
Lantien Flour Mill	Hunan	200
Kia Nung Flour Mill	Yunnan	500
Jung Hsin Flour Mill	Kansu	500
TOTAL		21,750

Nine factories are producing rolled tobacco in the interior. Szechwan tobacco is widely used, while tobacco paper is

also largely manufactured in Free China. The distribution and production of tobacco factories may be seen in Table 34:

TABLE 34.—ROLLED TOBACCO PRODUCTION IN FREE CHINA

NAME OF FACTORY	Location	Daily Production in Boxes
Nanyang Brothers Tobacco Co.	Szechwan	25
Chu Yi Tobacco Co.	Szechwan	20
Ta Tung Tobacco Co.	Szechwan	1
Kweichow Tobacco Co.	Kweichow	7
Kwangsi Tobacco Co.	Kwangsi	18
Tai Feng Tobacco Co.	Shensi	30
Hwa Hsin Tobacco Co.	Shensi	10
China Hwa Lung Tobacco Co.	Kansu	5
Hwa Sung Tobacco Co.	Kiangsi	3
TOTAL		119

(7) Electrical Power.—The Ministry of Economic Affairs is helping private power plants to expand their capacities. Among those aided are the Chungking Power Plant, the Chengtu Power Plant, and a number of power stations belonging to private factories.

The Ministry's policy in developing electrical power is to create electrical power networks to meet the demand of the scattered industries. The development of industrial areas is the wartime policy of industrial reconstruction, hence the creation of electrical power networks in decentralized localities is needed.

INDUSTRIAL COOPERATIVES

The Chinese Industrial Cooperatives was founded in Hankow in the fall of 1938. Its mission is to assist in economic reconstruction by the production of daily necessities for both military and non-military uses and to establish a sound cooperative basis for small industries to be scattered throughout the country.

To fulfill this mission, the Chinese Industrial Cooperatives have been following a plan calling for the creation of three zones of industrial cooperatives. First, a zone of heavy industry should be created in the interior. Second, a middle zone should be created stretching from Kansu in the Northwest to Fukien in the Southeast in a large arc along the fighting line. Here there is no immediate danger of fighting, but constant enemy air attacks necessitate the decentralization of the cooperatives. Third, a zone of "guerilla" cooperatives should be created in the war and occupied areas. These cooperatives should be small and mobile in order to meet the changing situation.

In accordance with this plan, a "big offensive" was launched late in 1938, and in a period of less than a year, more than 1,000 cooperatives were organized. The first one was established in September, 1938, in Paoli, Shensi. The C.I.C. now controls 1,590 societies with a membership of 22,680. Its status has been fixed as a social organization under the Executive Yuan.

The following review is confined to the organization, growth, financial condition, education and welfare, international interests, and other activities of the C.I.C.

I. Organization.—The highest governing body of the C.I.C. is the Board of Directors, of which the president is Dr. H. H. Kung, Vice-President of the Executive Yuan and concurrently Minister of Finance, who from the very beginning has been the chief sponsor of the movement. To assist the president is a standing committee of three who give much time in advising the staff in regard to policies and plans.

In charge of actual administration is the Central Headquarters, formerly in Hankow and now in Chungking. Under the direction of a secretary-general are departments of field work, finance, and promotion, and a service section. The department of field work is in charge of organization, engineering, and supply and marketing. The department of finance controls accounting, auditing and loans. The department of promotion look after promotion, coordination, education and welfare, and research and statistics. The service section takes care of general correspondence and files, business and personnel registration.

The direction of the cooperatives throughout the nation is placed in the hands of 86 depots in 18 provinces. These depots are divided among seven regions, each with a regional headquarters, namely:

- (1) Northwest: Comprising Shensi, Kansu, Ningsia, Chinghai and Hupeh;
- (2) Chwan-Kang: Comprising Szechwan and Sikang;
- (3) Southwest: Comprising Hunan and Kwangsi;
- (4) Tien-Chien: Comprising Yunnan and Kweichow;
- (5) Southeast: Comprising Kiangsi, Kwangtung and Fukien;
- (6) Tsin-Yu: Comprising Shansi and Honan; and
- (7) Che-Wan: Comprising Chekiang and Anhwei.

The organization of an individual cooperative is democratic. The main points of the revised model constitution of the Chinese Industrial Cooperatives, relating to organization and management, are:

- (1) Membership is open to all qualified workers up to the maximum number justified by the economic condition of the business.

- (2) The minimum number of members in each cooperative is seven.
- (3) Each member has only one vote, irrespective of the number of shares he may hold.
- (4) Interest on share capital is limited.
- (5) Distribution of net earnings is made on the basis of a bonus on wages.
- (6) The liability for loans in ratio to the share capital of each cooperative must not exceed 20:1.
- (7) Supreme authority in each cooperative is vested in the Central Meeting which elects a Board of Directors and a Supervisory Committee.
- (8) The Board of Directors has to conduct the business efficiently and cooperatively, subject to principles laid down by the Central Meeting. The Supervisory Committee audits accounts and supervises the work of the Board of Directors. The Central Meeting decides on the division of profits at the end of the year, approves the election of new members, expels members when necessary, and fixes salaries and wage scales. (The Board of Directors may hire a manager, but in the smaller cooperatives usually one of the members, who is on the Board of Directors, serves as manager).
- (9) The net profit at the end of the year, after reduction of a maximum of ten per cent for depreciation and interest on share capital, is divided as follows:
 - 20-30 per cent for reserve funds;
 - 10 per cent for emergency uses or contribution to the C.I.C.;
 - 10 per cent to the staff as bonus;
 - 10 per cent for Common Welfare Fund; and
 - 40-50 per cent to members and workers as bonus.

When seven or more persons wish to organize an industrial cooperative, they draw up a plan and budget, to be submitted to the C.I.C. depot in their locality for study and investigation. Upon approval of the plan, the depot organizes and registers the new society as one of the cooperatives and extends to it all possible financial and technical assistance. The depot may extend loans out of the C.I.C. funds, or it may introduce it to a bank for loans, in which case the guarantee of the depot is usually required. The relationship of the depots to the cooperatives is general supervision, direction and advice.

The cooperatives are encouraged to organize themselves into a federation which handles the supply and marketing for the member cooperatives as well as educational and welfare work with the help of the C.I.C. regional headquarters. Local federations are expected to form regional federations, and from the regional federations a National Federation will be established. The National Federation will then take over the functions now performed by the present C.I.C. Central Headquarters, thus bringing to the full realization the highest ideal of the movement, i.e., the cooperatives will govern themselves through their own federation.

The present policy of the C.I.C. may be summarized as follows:

- (1) Equal attention is being paid to the increase of the number and the improvement of the quality of the cooperatives. A deliberate policy of consolidation has caused the reorganization of many cooperatives and the dissolution of others.
- (2) Structure for marketing is being enlarged and strengthened.
- (3) Rural and war area cooperatives are being developed. Concrete results have been achieved in the Shansi-Honan and Chekiang-Anhwei regions.
- (4) Basic industries are being developed to achieve self-sufficiency and to promote better light industries.
- (5) More loans are being secured from both central and provincial government banks.

- (6) More promotion committees are being organized both at home and abroad to get more assistance.
- (7) The watchword for the development of industrial cooperatives in 1942 was "double the membership and triple the production."

The principles for the organization of new industrial cooperative societies are:

- (1) Investigations must be made regarding the supply of raw materials, labor, capital and production tools as well as communications and transportation facilities before the organization of any new cooperatives.
- (2) Greater efforts should be exerted for the organization of medium and small-size cooperatives of basic industries, such as metallurgical, machinery and chemical industries, as a step to help develop light industries and handicrafts.
- (3) The organization of industrial cooperative unions should be completed to facilitate the transportation, marketing, storage and the purchase of materials. Standardization should be achieved.

For the readjustment of the existing societies, the C.I.C. has adopted the *Regulations Governing the Readjustment of Industrial Cooperatives in Different Localities*. The main points of these regulations are:

- (1) Cooperatives engaged in handicrafts should be scattered and developed in the homes of the members in order to reduce the cost of production. The C.I.C. supplies materials and collects finished products.
- (2) Cooperatives engaged in machine industries should be grouped together in order to achieve better coordination, but they should be located in safe places to avoid unnecessary losses.

- (3) Cooperatives engaged in the production of goods involving seasonal changes should engage themselves in other work during leisure periods.
- (4) Cooperatives engaged in similar work in the same locality should be amalgamated if they are short of capital and are not able to continue production.
- (5) Cooperatives whose organization is not sound and too difficult to reform should be dissolved.
- (6) Cooperatives, after readjustment, should be given adequate financial assistance.
- (7) Different regional headquarters should create structures for marketing as soon as possible, and the different depots should promote and supervise the organization of cooperative unions. Marketing funds needed by cooperative unions will be supplied by the headquarters.

The above-mentioned measures have been put into force since the beginning of 1941, and are the causes for the decrease in the number of cooperatives at the end of 1941 and in the first half of 1942.

II. The Development of the C.I.C.—There were 1,590 industrial cooperatives with a total membership of 22,680 at the end of June, 1942. This registered a decrease of 270 societies and 6,604 members as compared with June, 1941. The figures have been decreasing since June, 1941, due to continued readjustments and reorganization.

Of the 1,590 societies, 433 are in southeastern provinces of Kiangsi, Fukien and Kwangtung, while 325 are scattered in the northwestern provinces of Shensi, Kansu, Ningsia and Chinghai. Szechwan and Sikang have 247, Hunan and Kwangsi 246, and Yunnan and Kweichow 158. There are 118 in the frontline provinces of Shansi and Honan, and 63 in Chekiang and Anhwei.

Most of the cooperatives are engaged in textile work, numbering 584 or 36.7 per cent of the total number of societies. Chemical works rank second. Mining projects and machine shops draw considerable attention of the cooperatives. (See Tables 35, 36 and 37.)

TABLE 35.—THE DEVELOPMENT OF C.I.C. (DECEMBER 1938-JUNE 1942)

YEAR	No. of Societies	No. of Members	SHARE CAPITAL		Loans Outstanding \$	Monthly Production \$
			Subscribed \$	Paid-up \$		
1938 (December)	69	1,149	16,292	10,206		
1939 (June)	724	9,534	163,188	91,842		
1939 (December)	1,284	15,625	416,108	236,122	2,607,302	
1940 (June)	1,612	21,330	714,006	488,214	5,469,862	5,783,450
1940 (December)	1,789	25,632	1,219,347	843,245	6,000,850	9,392,154
1941 (June)	1,867	29,284	1,835,793	1,357,858	12,520,365	14,246,595
1941 (December)	1,737	23,088	2,348,084	1,972,204	13,893,045	14,478,892
1942 (June)	1,590	22,680	5,645,558	4,553,392	15,727,857	24,022,944

Source: The Chinese Industrial Cooperatives

TABLE 36.—CLASSIFICATION OF C.I.C. BY REGIONS (JUNE 1942)

REGION	No. of Societies	No. of Members	SHARE CAPITAL		Loans Outstanding \$	Monthly Production \$
			Subscribed \$	Paid-up \$		
Northwest	325	4,019	1,214,715	728,194	3,618,041	5,774,845
Chwan-Kang	247	4,800	2,194,775	1,921,432	3,152,112	4,411,285
Southeast	433	5,395	715,755	572,963	3,519,715	1,774,616
Southwest	246	3,485	408,868	327,055	2,155,441	9,471,517
Tien-Chien	158	2,497	839,324	785,124	2,082,444	2,027,765
Tsin-Yu	118	1,610	183,748	167,217	616,597	327,052
Che-Wan	63	874	88,373	51,407	583,507	235,864
TOTAL	1,590	22,680	5,645,558	4,553,392	15,727,857	24,022,944

NOTE:—Provinces included in the Regions are as follows:—

- Northwest—Shensi, Kansu, Ningsia and Chinghai.
- Chwan-Kang—Szechwan and Sikang.
- Southeast—Kiangsi, Fukien and Kwangtung.
- Southwest—Hunan and Kwangsi.
- Tien-Chien—Yunnan and Kweichow.
- Tsin-Yu—Shansi, Honan and Hupeh.
- Che-Wan—Chekiang and Anhwei.

Source: The Chinese Industrial Cooperatives

TABLE 37.—CLASSIFICATION OF C.I.C. BY INDUSTRIES (JUNE, 1942)

INDUSTRIES	NUMBER OF COOPERATIVES								Percentage	No. of Mem- bers	Loans Out- standing \$	Monthly Production \$
	Northwest	Chwan-Kang	Southeast	Southwest	Tien-Chien	Tsin-Yu	Che-Wan	TOTAL				
Machine and Metal Works	12	7	20	6	4	3	5	57	3.6	1,011	1,600,786	1,458,340
Mining	73	8	21	1	...	8	...	111	7.1	972	196,836	42,883
Textile	101	141	44	142	97	45	14	584	36.7	10,449	5,233,985	12,157,056
Tailoring	32	20	35	22	15	23	12	159	10.0	1,718	1,209,852	2,768,038
Chemical	40	46	160	31	13	22	10	322	20.2	4,494	4,083,906	3,310,663
Foodstuff	15	6	25	5	7	9	3	70	4.4	707	610,965	1,008,249
Stationery Supplies	7	6	17	1	4	6	2	43	2.7	749	929,090	901,431
Carpentry and Masonry	22	5	63	8	4	1	3	106	6.7	1,090	589,739	453,744
Transportation	2	...	2	3	...	...	...	7	0.4	67	46,750	15,400
Miscellaneous	21	8	46	27	14	1	14	131	8.2	1,423	1,225,948	1,907,140
TOTAL	325	247	433	246	158	118	63	1,590	...	22,680	15,727,857	24,022,944
PERCENTAGE	20.4	15.6	27.2	15.5	9.9	7.5	4.0	...	100	...	...	...

Source: The Chinese Industrial Cooperatives

Thirty-three cooperative unions have throughout the country. The distribution been organized in the seven regions of these unions may be seen in Table 38.

TABLE 38.—DISTRIBUTION OF INDUSTRIAL COOPERATIVE UNIONS (DECEMBER, 1942)

REGION	No. of Unions	Location
Northwest	8	Paoki, Tienshui, Lanchow, Nancheng, Ankang, Shuangshihpu, Fengsiang, Lungshien
Chwan-Kang	9	Chungking, Wanhsien, Kwangyuan, Liangshan, Jungchang, Santai, Kiangtsin, Kikiang, Chengtu
Southwest	5	Shaoyang, Supu, Chiyang, Liukiang, Hengyang
Southeast	5	Changting, Hoping, Namyung, Meihsien, Yungan
Tien-Chien	3	(Not reported)
Tsin-Yu	3	Chenping, Laohokow, Lushan
Che-Wan	0	
TOTAL	33	

III. Capital and Loans.—The total capitalization of the C.I.C. was estimated at \$25,000,000 by June, 1942. Of this amount, 35 per cent was supplied by the Government, about 20 per cent from paid-up capital, and the rest mainly by loans from banks. The Executive Yuan has approved the appropriation of \$60,000,000 for the development

of the C.I.C., to be allocated in monthly instalments. Beginning from July, 1942, a sum of \$5,000,000 has been paid each month.

The C.I.C. is receiving loans from both central and local government banks. The following table shows the total loan situation:

TABLE 39.—LOANS EXTENDED TO THE C. I. C. (UNIT: DOLLARS)

NAME OF BANK	Amount of Loans	To Be Used in
Joint Board of the Four Government Banks	5,000,000	All regions
Bank of China	5,200,000	\$2,000,000 in Chwan-Kang Reg., \$1,000,000 each in Northwest, Southwest, and Tien-Chien Regs., \$200,000 in Southeast
Joint Board's Hongkong Office	1,000,000	Southeast
Farmers' Bank of China	500,000	Northwest
Kwangtung Provincial Bank	5,500,000	Southeast
Shensi Provincial Bank	500,000	Northwest
Kansu Provincial Bank	500,000	Northwest
Chungking Municipal Cooperative Bank	1,000,000	Chungking
Kincheng Bank	200,000	Northwest
Hunan Provincial Bank	100,000	Southwest
Chekiang Provincial Bank	400,000	Che-Wan Region
Yunnan Provincial Cooperative Bank	3,000,000	Tien-Chien Region
TOTAL	22,900,000	

IV. Education and Welfare.—Educational and welfare features of the C.I.C. distinguish the industrial cooperatives from ordinary factories. Members of the cooperatives and their families are taught to be self-reliant, self-respecting and efficient workers. The C.I.C. depots sponsor programs of general and cooperative education and give technical training to applicants, especially refugees, preparatory to organizing them into cooperative societies. Youngsters between 12 and 16 are recruited and trained especially as technicians. Primary schools are opened for the children of the cooperative members with a view to training them as cooperators.

Welfare features of the C.I.C. include the establishment of nurseries, hospitals, clinics, schools, consumers' cooperatives,

and recreational centers. A typical industrial cooperative community is composed of, among other things, a recreational hall, a library or reading room, a nursery, one or two primary schools, and a clinic. There are five full-fledged C.I.C. hospitals, and more will be opened.

The highest training organ of the C.I.C. is the Advanced Class for the Training of Industrial Cooperative Personnel, jointly managed by the C.I.C. and the University of Nanking now in Chengtu. Regional headquarters separately train both administrative and technical personnel.

The progress of the educational and welfare program of the C.I.C. may be seen in the following two tables:

TABLE 40.—TRAINING OF C. I. C. PERSONNEL

YEAR	Administrative Personnel	Technical Personnel	Training of Members	TOTAL
1939	485	216	70	771
1940	148	95	1,139	1,382
1941	195	224	734	1,153
1942		140	516	656
TOTAL	828	675	2,459	3,962

Source:—The Chinese Industrial Cooperatives

TABLE 41.—WELFARE PROJECTS OF THE C. I. C.

REGION	Hospitals	Clinics	Nurseries	Consumer's Coops	C. I. C. Hostels	C. I. C. Cafeterias	Clubs	C. I. C. Primary Schools
Central Hdqrs.	...	1	...	1	...	...	...	...
Northwest	2	5	2	4	3	3	4	5
Southwest	...	2	1	...	1	...	11	3
Southeast	1	3	1	2	1	...	4	1
Chwan-Kang	1	4	1	2	2	4	4	1
Tien-Chien	...	2	...	1	...	...	2	...
Tsin-Yu	...	4	...	...	1	...	3	4
Che-Wan	1	2	...	...	...	...	2	...
TOTAL	5	23	5	10	8	7	30	14

Source: The Chinese Industrial Cooperatives

V. Other Activities of the C.I.C.—Other activities of the C.I.C. include transportation and marketing of the finished products, technical improvement, the organization of industrial cooperatives in war areas and in rural districts as well as for wounded soldiers, the manufacture of army blankets, and assistance in the promotion of general welfare enterprises.

Structures for the transportation and marketing of the finished products have been created throughout the C.I.C. regions. The Executive Yuan has appropriated \$5,000,000 for this purpose. The distribution of this fund is as follows: \$1,500,000 for the Central Headquarters, \$900,000 for the Northwest Region, \$850,000 for the Chwan-Kang Region, \$600,000 for the Southeast Region, \$450,000 for the Southwest Region, \$300,000 for the Tien-Chien Region, and \$200,000 each for the Tsin-Yu and Che-Wan Regions. Sales offices have been opened in all regions with general sales headquarters at Chungking.

Constant improvement in the technique of production is the keynote with the C.I.C. It is realized that C.I.C. products must stand on their own merits, especially after the termination of the war, when certain factors now favorable to small industries and decentralized industries during wartime will disappear and when competition will be keen. The Central Headquarters of the C.I.C. maintains an engineering section whose function is to study possible improvements in the technique and methods of production. An experimental laboratory in the Northwest, conducted with the cooperation of the Shensi provincial government, has achieved notable results along the line of chemical and mining industries. The Southeast Technical Research Institute at Kanhsien, Kiangsi, has done much to improve paper-making and tanning. At Chengtu, experiments are being made to improve production and technique in textile. Other examples of C.I.C. technical improvements include charcoal-burning engines in the Southeast and the water-wheels of the Northwest. These improvements are not in the form of spectacular inventions. Rather they are the introduction and adoption of simple techniques and methods which have done a great deal to accelerate and improve production as well as cut down the cost of production under tremendous difficulties.

The Executive Yuan has set aside \$4,000,000 for the organization of industrial cooperatives in war areas. Of the sum, \$490,000 are for the Northwest Region, \$1,630,000 for the Tsin-Yu Region, \$1,340,000 for the Che-Wan Region, and \$40,000 for the Taian Depot in Shantung now temporarily under the Tsin-Yu Regional Headquarters. The Tsin-Yu and Che-Wan regional headquarters are specially charged with the mission of developing war area industrial cooperatives. Other regional headquarters are also developing war area cooperatives to meet the needs in the frontline provinces.

For the development of industrial cooperatives in rural districts, the C.I.C. has adopted a set of regulations, aiming at the coordination between agricultural and industrial enterprises in the interior. The principles for the organization of industrial cooperatives in rural areas, as provided for in these regulations, are:

- (1) To industrialize existing rural handicrafts,
- (2) To improve the processing of rural products and by-products,
- (3) To develop small-scale electric power and heavy industries,
- (4) To increase the farmers' income through the increase of production,
- (5) To utilize local raw materials, and
- (6) To develop household handicrafts and small industries.

For the relief of wounded soldiers and the families of frontline soldiers, the C.I.C. organizes special cooperatives to enable them to earn a living with the cooperation of the Friends of the Wounded Society, the Chinese Red Cross Society, and organs in charge of wounded soldier affairs. One of the best things these societies do for the members, particularly for the wounded soldiers, is to give them a trade together with a sense of security, which often enables the disabled soldiers to get married and settle down. The C.I.C. sees the tremendous significance of these cooperatives, providing employment for a group of men who would otherwise remain idle and useless and pointing to a way in which the millions of Chinese soldiers can be rehabilitated after the conclusion of the war.

TABLE 42.—INDUSTRIAL COOPERATIVES OF WOUNDED SOLDIERS AND FAMILIES OF SOLDIERS

Regions	No. of Societies	No. of Members
Northwest	4	100
Chwan-Kang	3	85
Southeast	23	667
Southwest	19	393
Tien-Chien	2	55
TOTAL	51	1,300

The C.I.C., has manufactured 3,000,000 army blankets for the Ministry of Military Affairs. The Northwest Regional Headquarters supplies the major portion of these blankets, while the Szechwan-Sikang Regional Headquarters is responsible for the rest. The Ministry of Military Affairs takes an active part in directing supervising and the production of the blankets.

VI. International Interest.—One of the distinguished features of the C.I.C. movement is the widespread international interest it has aroused from the very beginning. This interest was crystallized in the formation of promotion committees, first in Hongkong, then in Manila and later in the United States and Great Britain. In the United States, the C.I.C. Promotion Committee is an important participating organization in the United China Relief, Inc., while in Great Britain, plans are being formulated for a campaign to raise funds and capital for the C.I.C. Contributions from both foreign friends and overseas Chinese have produced gratifying results in accelerating the development of the C.I.C. Promotion committees have also been organized within China, such as in Chengtu, Sian, Nancheng, and a number of cities in the Southwest and the Southeast.

CONTROL OF INDUSTRIAL MATERIALS

The control of industrial materials has been enforced over iron and steel, cement, caustic soda, machine tools, and dyes. The Industrial and Mining Adjustment Administration is on charge of the control.

The control of machine tools and dyes is limited to the registration of the materials in use or in stock, while that of iron and steel, cement, and caustic soda is wider in sphere. The following is a review of the control of iron and steel, cement, and caustic soda.

I. Iron and Steel.—The control of iron and steel is based on the *Regulations Governing the Control of Iron and Steel*, promulgated by the Ministry of Economic Affairs on January 4, 1940. It was first placed in the hands of the Iron and Steel Control Commission, which was merged with the Industrial and Mining Adjustment Administration in February, 1942.

Measures for the control of iron and steel are: (1) registration of the production, supply and consumption of iron and steel, (2) suppression of hoarding and speculation and fixing of iron and steel prices, and (3) increase of production.

The Industrial and Mining Adjustment Administration started to register stocked iron and steel in Chungking as from May 1, 1942. In two months' time, 583 iron and steel mining enterprises and dealers registered with the Administration. In the first six months of 1942, the amount of iron and steel approved for transportation in 11 interior provinces totalled 21,800,51 metric tons, valued at \$2,028,633,680. Priority rating has been adopted for the purchase of iron and steel. All purchases should be first approved by the Administration and should be accompanied by licenses issued by the Administration.

The control of the production of iron and steel has achieved the following results: steel production increased by two times at the end of 1941 as compared with February 1940, when the control was enforced, and iron by more than two times. National defense enterprises have the priority to purchase all kinds of iron and steel materials. The prices of iron and steel registered very little increases.

II. Cement.—The control of cement was transferred to the Industrial and Mining Adjustment Administration in January, 1942, when the Cement Control Commission was abolished. Measures for the control of cement are: (1) direction and supervision of the production and consumption of cement, and (2) the fixing of distribution.

As a result of the control, the production of cement was increased to a considerable amount in 1942 in comparison with 1941. The Szechwan Cement Plant produced 55,248 barrels of cement in the first half of 1942, 14,745 barrels more than in the second half of 1941. The Central China Cement Plant

produced 32,303 barrels, about 3,000 barrels more than the second half of 1941, while the Kunming Cement Plant produced 4,000 more. The Kweichow Cement Plant began production in March, 1942, while the Kiangsi, Kwangsi, and Kia Hwa cement factories were all scheduled to begin operation in the fall of 1942. Three other plants are producing more cement and hydraulic lime. Tables 43 and 44 show the production and distribution of cement and hydraulic lime produced by five large cement factories.

TABLE 43.—PRODUCTION AND SALE OF CEMENT AND HYDRAULIC LIME PRODUCED BY FIVE LARGE CEMENT FACTORIES IN THE FIRST SIX MONTHS IN 1942

(Unit: Barrels)

NAME OF PLANT	Production	Sale
Szechwan Cement Plant	55,248	50,441
Central China Cement Plant	32,303	44,473
Kunming Cement Plant	9,903	9,013
Kweichow Cement Plant	689	685
Kien Cheng Hydraulic Lime	3,813	4,118
TOTAL	101,956	108,730

NOTE:—Central China and Kien Cheng sold more than they produced as shown in this table because a portion sold was produced in 1941.

TABLE 44.—THE DISTRIBUTION OF CEMENT IN FIRST SIX MONTHS OF 1942

(UNIT: BARRELS)

ITEMS	Szechwan Cement Plant		Central China Cement Plant		Kunming Cement Plant		Kweichow Cement Plant		Kien Cheng Hydraulic Lime Plant		Total	
	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount	Percentage
Military Works	30,080	59.63	1,978	4.45	1,992	22.10	36	5.26	2,784	6.61	36,870	33.8
Communication	4,949	9.81	1,652	30.68	1,005	11.15	364	53.14	20	0.49	19,990	18.28
Hydraulic Engineering	1,670	3.31	..	..	305	3.3	10	1.46	63	1.53	2,048	1.78
Industrial Uses	12,278	24.34	1,369	3.09	788	53.12	182	26.57	963	2.37	19,580	18.00
Schools	29	0.06	6	0.01	12	0.13	2	0.29	..	..	49	0.4
Banks	324	0.64	5	0.01	317	3.52	63	9.19	100	2.43	809	0.64
Others	1,111	2.21	27,463	61.76	594	6.59	28	4.09	188	4.57	29,384	27.02
TOTAL	50,441	100.00	4,374	100.00	9,013	100.00	685	100.00	4,118	100.00	108,730	100.00

III. Caustic Soda. The control of caustic soda was enforced in November, 1941, and was further tightened after the outbreak of the Pacific War in December, 1941. The principle is to give preference to soap

and candle manufacturing factories, paper mills, and oil refining and dyeing plants. Purchases are to be made only upon the presentation of licenses from the Industrial and Mining Adjustment Administration.

The distribution of caustic soda under the control of the Administration in the first six months of 1942 was as follows:

TABLE 45.—DISTRIBUTION OF CAUSTIC SODA, JANUARY-JUNE 1942

KINDS OF FACTORY	Amount Allotted in Kilograms
Paper making	113,200
Dyeing	40,880
Soap making	124,910
Oil refining	22,920
Others	37,950
TOTAL	339,860

Soda manufacturers are making every effort to increase the production of liquid caustic soda under the supervision of the Industrial and Mining Adjustment Administration to meet the increasing demand for caustic soda, which was largely imported before the Pacific War broke out.

LABOR CONDITIONS

I. WARTIME LABOR POLICY AND ADMINISTRATION

The highest guiding principle for wartime labor administration and the formulation of a wartime labor policy is stated in Article XXV of the *Program of Armed Resistance and National Reconstruction*, which stipulates that the people should be mobilized through the formation and strengthening of all kinds of people's organizations, including labor organizations.

Based on this principle, the Ministry of Social Affairs has been following a wartime labor policy which includes: (1) strengthening labor union structure, (2) promoting and encouraging social welfare, (3) organizing workers in war and guerilla areas, and (4) bringing about closer cooperation with the international labor movement.

Following the promulgation of a number of separate regulations governing wartime labor administration, the *National General Mobilization Act* was enforced on May 5, 1942. Several articles in the Act are connected with labor administration. Concerning the utilization of manpower during wartime, the Act provides that the Government, whenever necessary, may restrict the number of staff members and workers employed by government organs, public bodies, firms and shops, and private households, and may order

the people to report to government organs concerned on the duties and abilities of people in their service or in their employment, and may conduct investigations. (Articles XII and XIII.) Article X provides that the Government, in conscripting the people for National General Mobilization affairs, should make appropriate distribution in accordance with their age, sex, physique, education, skill, experience, and their original occupations. Article XI authorizes the Government to effect or readjust the acceptance or resignation of positions, employment and unemployment, and salaries and wages.

Regrading labor itself, the Government, in accordance with Article XIV of the Act, may issue ordinances to prevent or settle labor disputes, and may strictly prohibit lockouts, strikes, go-slow strikes and other acts hampering production.

A labor policy was formulated in October, 1942, at the First National Social Administration Conference, the first of its kind ever held in China. The draft was adopted at the Conference and has been sent to the Supreme National Defense Council for approval and adoption. This draft is the first complete program for the realization of Dr. Sun Yat-sen's labor policy. The full text reads:

A DRAFT OUTLINE OF LABOR POLICY

I. Aims of the Labor Policy.

- To strengthen labor organizations,
- To raise the workers' social position,
- To improve the workers' livelihood,
- To readjust the distribution of workers,
- To promote cooperation between workers and employers,
- To increase production,
- To meet the needs for national defense, and
- To strengthen international labor cooperation.

II. Sphere of Application of the Labor Policy.

- To those who are employed in a fixed profession or enterprise with the exception of those responsible for the direction and supervision of the organization.
- To those laborers who are engaged in manual work without an employer.

III. Outline of the Labor Policy.

1. Labor organizations.

- Special and ordinary labor organizations shall be separately formed.
- The various kinds of labor organizations may extend their organization from *hsien* or municipal organizations to national unions.
- Both vertical (such as provincial, *hsien*, or municipal) and horizontal (such as organizations of various industries) organizations should be set up.
- The organization of labor unions may include both the employees and workers with the exception of those responsible for the direction and supervision of the organization.
- Employees of firms and shops may organize unions.

2. Workers' rights.

- The workers possess the right of holding meetings and organizing unions.
- The labor unions possess the right of collective bargaining.
- The labor unions possess the right of striking.

Workers in military industries do not possess the right of organizing unions. Special unions of public enterprises do not possess the right of striking and collective bargaining. Special unions of privately-owned public utility and communication enterprises possess the right of collective bargaining but not the right of striking.

3. Labor conditions.

- Wages:
 - An equal reward for an equal amount of work should be taken as the principle for fixing wages.
 - The lowest equitable wage rate shall be fixed by competent authorities with the cost of living in their respective localities at the time of fixing as a basis.
- Working hours:
 - Eight hours a day and forty-eight hours a week shall be taken as the principle.

- There shall be a rest for twenty-four consecutive hours every week.
- Women and child workers shall not be engaged in night shifts.
- There should be fixed holidays, and wages shall be paid on these days.

(3) Protection of women and child workers:

- Women and child workers shall not be engaged in heavy or dangerous work.
- Leaves and medical assistance shall be granted to women workers during childbirth.
- Chances for apprentices and child workers to receive citizen's or supplementary education shall not be hampered.

(4) Labor efficiency:

- Scientific management shall be adopted.
- Work contests shall be held.
- A standard rate for production shall be fixed.
- Training of laborers and apprentices shall be given.

(5) Distribution of laborers:

- Registration and statistics of laborers shall be made.
- The supply and demand of labor shall be readjusted.
- Vocational guidance shall be given to the workers.

(6) Labor service:

- Voluntary labor service from both sexes shall be enlisted.
- Labor service during leisure time shall be promoted.
- Labor conscription shall be promoted.

(7) Labor insurance:

- Health and accident insurance shall be first instituted.
- Insurance shall be extended to the aged and disabled and to the unemployed.

(8) Labor welfare :

- (a) Health and safety equipment shall be installed for the workers.
- (b) Educational and cultural measures for the workers shall be adopted.
- (c) Protection for women and child workers shall be given.
- (d) Nurseries shall be established.
- (e) Labor cooperative, savings and other welfare measures shall be adopted.
- (f) Recreational and physical education for the workers shall be promoted.
- (g) Legal procedure shall be simplified for workers involved in cases of litigation and fees charged for such cases shall be reduced.
- (h) Organs in charge of state-owned enterprises shall grant subsidies for special labor unions to start labor welfare projects.

(9) Factory and mine inspection :

- (a) The central inspection system shall be adopted for factory and mine inspection.
- (b) The lowest standard for safety and health equipment in factories, mines and other important working places shall be fixed.

(10) Cooperation between workers and employers :

- (a) A standard collective contract shall be written.
- (b) Factory committee system shall be promoted.

(11) International labor cooperation :

- (a) The Three People's Principles shall be publicized among international workers to enable them to understand the spirit of China's national reconstruction.
- (b) China shall participate in meetings convened by the International Labor Office.
- (c) China shall ratify international labor conventions

which fit her national conditions.

- (d) China shall assist in affairs engaged in and promoted by the International Labor Office.

Draft regulations governing the enforcement of the Labor Policy in wartime was also adopted at the First National Social Administration Conference. The full text of these regulations follows :

DRAFT REGULATIONS GOVERNING THE ENFORCEMENT OF THE LABOR POLICY IN TIME OF EMERGENCY

(NOTE: Unless specially provided for in these regulations, provisions in the *Outline of the Labor Policy* shall be applicable.)

I. The strengthening of labor organizations shall be based on the *Law Governing the Organization of Public Bodies in Time of Emergency* and other related laws and regulations.

- (1) The basic units of various labor unions shall be strengthened.
- (2) All workers shall join labor unions.
- (3) Competent authorities shall appoint qualified persons to be secretaries of labor unions.

II. Members of both ordinary and special labor unions may not declare strikes.

III. Labor conditions :

- (1) Wages :
 - (a) The Government shall restrict or investigate the payment of wages.
 - (b) The Government shall plan and enforce the partial payment in kind so as to stabilize the workers' livelihood.
- (2) Working hours :
 - (a) The Government shall fix the working hours in accordance with the nature of the industries, local conditions, and wartime needs, but the working hours may not be more than 12 hours a day.
 - (b) A rest of 24 consecutive hours shall be given every two weeks.
 - (c) With the permission of competent authorities, women workers may be engaged in night shifts.

II. LABOR WELFARE

Labor welfare projects adopted by the Ministry of Social Affairs may be grouped into : (1) factory inspection, (2) labor insurance, (3) construction of public facilities for the workers, and (4) miscellaneous measures.

Labor legislation is new in China. The Chinese *Factory Law* was promulgated in 1929 and was revised in 1942. The *Factory Inspection Law* was promulgated in 1931. A number of other regulations were adopted by the former Ministry of Industry regarding factory inspection.

Following the outbreak of the present war in 1937, factory inspection was not practised to a great extent until 1941, when the Ministry of Social Affairs was placed under the Executive Yuan. A number of college graduates were given three months of special training, and beginning in February, 1942, they have been inspecting factories in the Chungking area. During the inspection, special attention is paid to health conditions, safety, accident prevention measures, child labor, and general living conditions of the workers. The inspection will be extended to the entire nation, as more personnel becomes available. Equal attention is being given to the inspection of mines.

Special regulations have been adopted to protect the interests of the workers during air-raids. Their wages are to be paid despite the interruption of work. They will be given special allowances if they sustain material losses.

Social insurance was scheduled to be instituted in 1943, according to a resolution reached at the First National Social Administration Conference. The Ministry of Social Affairs is preparing to create a Central Social Insurance Bureau in 1943 to start health and accident insurance. Insurance for the aged and disabled and for unemployment will be started after the first two kinds of insurance are instituted. Funds will be appropriated by the National Treasury, and personnel will be trained. Social insurance bureaus will be established in provinces and municipalities whenever necessary.

The Ministry of Social Affairs has prepared a draft *Social Insurance Act*, which has been sent to the Legislative Yuan through the Executive Yuan for deliberation. Meanwhile, insurance measures have already been applied to salt workers in Szechwan.

IV. Provisions in the *National General Mobilization Act* shall be applicable in controlling labor.

V. Varied measures concerning labor insurance may be adopted in accordance with the needs of workers, medical and other facilities.

VI. Labor welfare measures should be first adopted for the increase of workers' efficiency and the improvement of workers' livelihood.

VII. In factory and mine inspection attention should be paid to the health and safety of workers.

VIII. To promote international labor cooperation, workers, with the permission of competent authorities may set up an organization in order to participate in the international labor movement prior to the formation of a national labor union and to make necessary associations with labor organizations in the democratic countries such as Great Britain, the United States, and the U.S.S.R.

The highest administrative organ of social affairs in China, including labor affairs is the Ministry of Social Affairs. Specially created for the mobilization of manpower, as required in the *National General Mobilization Act*, is the Labor Bureau of the Ministry. It administers : (1) matters pertaining to the investigation, registration and statistics of manpower, (2) matters pertaining to requisition and classification of manpower, (3) matters pertaining to the coordination of the restriction and readjustments in relation to the acceptance of positions, dismissal, employment, wages and salaries, (4) matters pertaining to the coordination of the restriction of the various organs and public bodies in employing workers, (5) matters pertaining to the investigation and restriction of the number and ability of the workers employed in private households, (6) matters pertaining to the enactment of plans for and the practice of the mobilization of manpower, (7) matters pertaining to the promotion of labor service, (8) matters pertaining to the control of workers and employers, (9) matters pertaining to the legal protection of the interest of conscripted laborers, (10) matters pertaining to the coordination of organs related to the mobilization of manpower, and (11) other matters pertaining to the mobilization of manpower.

The Ministry of Social Affairs is also directing and supervising factories in undertaking matters regarding labor welfare. In March, 1942, the Ministry ordered the four largest cotton mills in Chungking to set aside a portion of the profits they made in 1941 as funds for the promotion of labor welfare. Through the assistance of the Industrial and Mining Adjustment Administration a number of welfare projects have been started in these factories. A special commissioner was sent to the Kansu Oil Mining Bureau to direct and supervise welfare work. A special committee has been formed to look after the welfare of the workers in the Yunnan tin mines. Special attention has been directed to the welfare of highway and salt workers.

Instructions have been given to provincial and municipal authorities for the introduction of labor welfare projects, such as the laborers' model villages and schools.

The Ministry has opened several laborers' welfare societies in Chungking to serve as models for provincial and municipal authorities to start labor welfare projects. These labor welfare societies are composed of workers' dormitories, barber shops, laundry houses, recreational centers, schools for workers and their families, reading rooms, wall papers, and other services such as vocational, legal and medical guidance and advice. The Ministry of Social Affairs has ordered provincial and municipal governments to open such societies in their respective localities.

Marking another step in promoting the welfare of employees and workers of industrial and mining enterprises, the National Government promulgated on January 26 a set of regulations governing the appropriation of a welfare fund. These regulations, known as *Regulations Governing Employees' and Workers' Welfare Fund*, contain 14 articles, covering welfare projects to be undertaken by both government-owned and privately-owned industrial and mining as well as other enterprises.

Any enterprise, according to this law, should set aside from one to five per cent of its total capital as an employees' and workers' welfare fund at the time of its inauguration. A sum equal to from two to five per cent of the total amount of salaries and wages plus allowances earned by the employees and workers should be set aside by the employers every month for the promotion of welfare

projects, while one-half of one per cent of the salary or wages plus allowances of each individual employee or worker will be taken. From five to ten per cent will be taken from the yearly profit. From 20 to 40 per cent will be taken from money realized through the sale of scraps.

For the workers who are not hired by any particular employee, labor unions concerned should appropriate 30 per cent from the total membership fee for the welfare fund. Competent government organs may grant subsidies for the promotion of labor welfare.

For the preservation and use of the welfare fund, various enterprises should create committees for the promotion of the welfare of the employees and workers. Such committees should include representatives of the labor unions concerned. Their organic laws are to be drafted by the Ministry of Social Affairs. Welfare funds should not be used for other purposes.

A fine of not more than \$1,000 will be imposed on those who do not appropriate funds for the promotion of the welfare of their employees and workers in accordance with these regulations. A fine of not more than \$500 will be imposed on those who do not report to the Ministry of Social Affairs regarding the disposal of the welfare funds. Any one misusing the funds will be punished according to law.

This set of regulations is the first of its kind adopted since the outbreak of the war in 1937. Prior to the promulgation of this law, the Ministry of Social Affairs had been directing and supervising local administrations, factory and mine authorities, and labor unions in undertaking labor welfare projects. Instructions were given to various factories to start welfare projects with funds appropriated out of profits made.

III. MODEL LABOR UNIONS

The Ministry of Social Affairs has selected 11 districts as centers for the establishment of model labor unions. Special attention is being paid to the organization and training of the members of these unions, welfare projects, and wartime service.

These model labor unions are distributed in Chungking, Chengtu, Wanhsien, Neikiang, Loshan, Kweilin, Kukong, Kweiyang, Kunming, Sian, and Hengyang.

The organization of model labor unions has achieved encouraging results. Most of the 64,055 members of the 19 unions have completed training courses. Labor welfare projects include the establishment of 12 clinics, eight vocational guidance institutes, 47 workers' clubs, co-operatives, dramatic clubs, and reading rooms, six schools for the workers and their families, and measures for the settlement of industrial disputes. Workers' service corps have been organized by all the unions, including 23 air-raid service corps. The model unions also help in raising funds for different purposes and in enforcing laws and regulations relating to the stabilization of wages and the mobilization of manpower.

IV. CONTROL OF SKILLED WORKERS

The control of skilled workers is one of the most important steps that the Government has taken in its wartime labor administration. This step was taken due to two reasons: (1) shortage of skilled workers, and (2) labor poaching and turnover as a result of the shortage of skilled labor.

In view of the increasing rate of labor turnover following the outbreak of the war in 1937, the Industrial and Mining Adjustment Administration in September, 1938, ordered employers not to poach workers from other factories and workers not to change their employment without the consent of the employers and not to resort to sabotage under whatever conditions. To enforce these regulations, factories were advised to submit labor registration cards, with photographs attached, to the Administration. Laborers are forced to go back to their original factories in case they leave without the consent of their employers. In accordance with an order issued by Generalissimo Chiang Kai-shek, the Administration in October, 1939, again ordered factories in all cities not to hire workers already in employment and workers not to leave their original factories. Regulations prohibiting labor poaching are numerous. Among them is one issued by the Industrial and Mining Adjustment Administration prohibiting the recruiting of workers in industrial centers such as Chungking, Sian, Paoki, Yuanling, Hengyang, Kweilin, Kweiyang, and Kunming. These regulations are applicable not only to private factories but to government enterprises.

Labor turnover was particularly serious in Szechwan in the first few years of the

war. In 1939, member factories of the Association of Factories Moved to Szechwan made an agreement not to poach workers from one another. The agreement stipulates that, if the workers of a certain factory shift to another factory without permission, the former factory may request the latter to send them back and may petition the Association to impose on the violating party a penalty of \$500 for each worker poached if they fail to comply with the request within three days. Upon the receipt of the petition, the Association may request, through the Industrial and Mining Adjustment Administration, the local government concerned to collect the fines for the Association. As the amount of fine was small, it was not as effective as expected. The practice of labor poaching was still serious. The Industrial and Mining Adjustment Administration was forced to regulate wages and other treatment for different kinds of workers, first in textile mills, in order to check such malpractice. In addition, the Administration allowed textile mills to send representatives to visit each other for the purpose of checking whether the workers of one factory have been poached by the other.

In Kwangsi, the checking of labor poaching is handled by the Association of Factories Moved to Kwangsi, which has been authorized by the Kwangsi provincial government to send the violators to the authorities for punishment. The Association of Factories Moved to Shensi has promulgated a set of regulations prohibiting labor poaching with the approval of the Shensi Provincial Government. Registration is required for the employment, transfer and dismissal of laborers.

Labor poaching has been particularly serious in Kunming, where a large number of refugee factories have resumed operation. A committee for the control of skilled labor has been formed, composed of representatives of both government and private factories with the mayor of Kunming as chairman. The Kunming Municipal Government has adopted the *Rules Governing the Registration of Skilled Mechanics* for the special purpose of controlling skilled workers in the machinery industry.

The control of skilled labor was not put on a nationwide basis until April 9, 1942, when the *Regulations Governing the Control of Industrial Skilled Labor in Time of Emergency* was promulgated by the Ministry of Economic

Affairs. At the same time, the Ministry designated the seven industrial centers of Chungking, Kunming, Kweilin, Kweiyang, Sian, Chengtu, and Wanhsien as areas for the immediate enforcement of these regulations. The main points of these regulations are:

1. Skilled workers of the following industries are to be controlled:

- (1) Metallurgical,
- (2) Machinery,
- (3) Electrical manufacturing,
- (4) Chemical,
- (5) Textile,
- (6) Food,
- (7) Printing and stationery supply,
- (8) Other industries as designated by the Ministry of Economic Affairs.

2. The control of skilled labor will be enforced if the skilled workers are engaged under one of the following conditions:

- (1) In industrial enterprises,
- (2) Unemployed,
- (3) Newly coming from war areas,
- (4) Having received special training,
- (5) Operating workshops by themselves.

3. Skilled workers are required to possess certificates issued by the committee for the control of skilled labor of their respective localities after registration. Those who do not possess such certificates are not allowed to work in any factory or to conduct their own business.

4. Employment and recruiting of skilled laborers should first be approved by the local committee.

5. Those violating the provisions of these regulations are subject to punish-

ment, no matter whether the violators are employers or laborers.

Simultaneously promulgated with the *Regulations Governing the Control of Skilled Labor* was the *Regulations Governing the Organization of Committees for the Control of Skilled Labor in Time of Emergency*. According to these regulations, committees should be placed under *hsien* or municipal governments in *hsien* or municipalities where the control is enforced. *Hsien* magistrates or municipal mayors should be chairmen of these committees, and members of the committees include police commissioners, representatives of the Ministry of Social Affairs, the National Resources Commission, and the Industrial and Mining Adjustment Administration. These committees control:

1. Matters pertaining to the investigation and registration of skilled workers,
2. Matters pertaining to the distribution of skilled workers,
3. Matters pertaining to the assistance in recruiting skilled workers,
4. Matters pertaining to the suppression of unauthorized shifting of skilled workers, and
5. Other matters pertaining to the control of skilled workers.

Methods for obtaining more skilled workers include: (1) relief and recruitment of skilled workers in the war areas, (2) exemption from military service, and (3) training. A special institute for the training of skilled workers has been established to train all kinds of skilled workers, especially those for national defense industries.

V. WAGES

Wartime changes in wage rates, the real income and real wages of the workers may be seen in the following five tables:

TABLE 46.—WARTIME CHANGES OF THE RATE OF WAGES IN CHUNGKING

(Base Period: January-June, 1937)

YEAR	INDEX (Jan.-June, 1937=100)		LINK INDEX (Each Preceding Year=100)	
	Industrial Workers	Occupational Workers	Industrial Workers	Occupational Workers
	1937	103.7	104.7	
1938	141.9	154.9	136.8	147.9
1939	233.7	360.0	164.7	232.4
1940	346.9	897.1	148.8	349.2
1941	595.1	1962.6	111.6	218.8

SOURCE:—The Ministry of Social Affairs

TABLE 47.—REAL INCOME OF WORKERS IN CHUNGKING

YEAR	INDEX (Jan.-June, 1937=100)		LINK INDEX (Each Preceding Year=100)	
	Industrial Workers	Occupational Workers	Industrial Workers	Occupational Workers
1937	102.9	103.5	...	...
1938	179.8	167.4	174.4	161.7
1939	225.9	315.0	125.7	188.3
1940	437.0	718.2	193.5	228.0
1941	1017.6	1650.8	232.9	229.9

Source:—The Ministry of Social Affairs

TABLE 48.—CHANGES OF REAL INCOME OF WORKERS IN CHUNGKING

Period	Length	MONTHLY INCREASE(%)	
		Industrial Workers	Occupational Workers
1st	22 months	3.26	4.44
2nd	14 "	6.06	7.72
3rd	17 "	5.93	6.81
4th	8 "	7.10	4.40

Source:—The Ministry of Social Affairs

TABLE 49.—INDEX NUMBERS OF WAGES OF INDUSTRIAL WORKERS IN CHUNGKING

(Weighted Aggregate Average; January-June 1937=100)

YEAR	INDEX			LINK INDEX		
	Wage Rate	Real Income	Real Wage	Wage Rate	Real Income	Real Wage
1937	103.7	102.9	101.5			
1938	141.9	179.8	154.6	136.8	174.7	152.3
1939	233.7	225.9	117.8	164.7	125.7	76.2
1940	246.9	437.0	79.5	148.4	193.5	67.5
1941	595.1	1,017.6	55.3	171.6	232.9	69.5
1942						
January	744.9	1,429.2	53.7	105.3	115.1	116.1
February	802.8	1,367.9	49.6	107.8	95.7	92.4
March	823.7	1,417.1	46.5	102.6	103.6	93.6
April	935.8	1,708.9	49.8	113.6	120.7	107.2
May	981.1	1,893.9	48.2	104.9	110.8	96.9
June	1,061.5	1,997.1	50.6	108.2	105.5	104.9
July	1,070.7	2,055.6	56.6	100.9	102.9	111.9
August	1,093.6	2,389.7	55.3	109.4	116.3	97.8

Source: The Ministry of Social Affairs

TABLE 50.—INDEX NUMBERS OF WAGES OF OCCUPATIONAL WORKERS IN CHUNGKING

(Weighted Aggregate Average; January-June 1937=100)

YEAR	INDEX			LINK INDEX		
	Wage Rate	Real Income	Real Wage	Wage Rate	Real Income	Real Wage
1937	104.7	103.5	101.1			
1938	154.9	167.4	145.0	148.0	151.7	143.4
1939	360.0	315.0	183.0	232.4	188.3	126.2
1940	897.1	718.2	143.9	249.2	228.0	78.6
1941	1,962.6	1,650.8	92.1	218.8	229.9	64.0
1942						
January	2,826.3	2,300.5	91.5	106.1	97.0	83.1
February	2,849.0	2,220.8	86.0	100.8	96.5	94.1
March	2,956.6	2,327.3	81.4	103.8	104.8	94.6
April	3,237.4	2,608.6	80.7	109.5	112.1	99.2
May	3,494.8	2,828.5	86.6	108.0	108.4	94.9
June	3,713.9	2,985.2	81.2	106.3	105.5	105.9
July	3,880.3	3,114.0	86.3	104.5	104.3	106.3
August	4,050.6	3,269.1	84.4	104.4	105.0	97.0

Source: The Ministry of Social Affairs

The differences between the wage rates of industrial and occupational workers in Chungking is great. It was only 1.0 in 1937, but rose to 13.0 in 1938, 126.3 in 1939, 550.2 in 1940, and 1367.5 in 1941. The wage rates of occupational workers are, therefore, three times those of industrial workers. The difference was still increasing in 1942. In July, 1942, it was 2809.6.

The workers' real income is, however, greater than their nominal wages, for during wartime they get all kinds of allowances, such as rice and housing allowances. The real income of occupational workers is still larger than that of industrial workers, but the difference is not so great as the rate of wages. Five years of war may be divided into four periods in reviewing the wage situation. They are: (1) from July, 1937, to April, 1939, before the May bombings of

Chungking in 1939, (2) from May, 1939 to June, 1940, ending with the fall of Ichang, (3) from July, 1940, to December 1941, ending with the outbreak of the Pacific War, and (4) from December, 1941, to the end of 1942. With the only exception of the 4th period, *i.e.*, after the outbreak of the Pacific War, the rate of increase of the real income of professional workers was greater than that of industrial workers. The reason is that factories have begun to pay more to their workers than ever before in view of the expected industrial boom following the interruption of a portion of the imported goods and in consequence of the great profit they made in 1941.

The following facts may summarize the wage situation of both occupational and industrial workers. First, wages did not increase much before April, 1940, as commodity prices rose

only slightly. Second, the increase of wages became rapid after April, 1940, when commodity prices began to soar with unabated speed. The year 1941 clearly demonstrated this. Third, the difference between the wage changes of occupational and industrial workers is chiefly due to the difference of their forms of labor. The change of the wages of occupational workers is greater because they are loosely organized and are not as easily controlled as industrial workers.

The changes of real wages of occupational and industrial workers registered no great differences before 1939. As the increase of real income of occupational workers has been quicker than that of industrial workers since 1941, index numbers of real wages of occupational workers are larger than those of industrial workers. Before March, 1940, index numbers of real wages of industrial workers were above 100. Since April, 1940, they have been declining and have been fluctuating around 50 since 1941, indicating that the standard has dropped by 50 per cent as compared with the prewar period. Index numbers of real wages of occupational workers were still above 100 by September, 1940, but slumped somewhat in 1941. Since January, 1942, they have been fluctuating between 70 and 80.

The Ministry of Social Affairs began to regulate wages in December, 1940. On January 15, 1941, the Executive Yuan promulgated *Regulations Governing the Stabilization of Wages*, to be enforced first in Chungking and extended to other cities. The main points of these regulations are: (1) the formulation of a legal wage scale, (2) living conditions of the workers and the indices of commodity prices to be taken as the basis for the regulation of wages, and (3) restriction of labor turnover.

As this measure was not practical, the Ministry of Social Affairs called a meeting of representatives of government organs and other organizations concerned in Chungking on May 17, 1941, to discuss questions relating to wage stabilization in the wartime capital. It was decided that the Bureau of Social Affairs of Chungking should be responsible for the fixing of wages and that the real wage index numbers of Chungking workers in the period of January-June, 1937, should be taken as the basis for the stabilization of wages. In November, 1941, the Joint Office for the Stabilization of Wages in Chungking was created upon the suggestion of the Bureau of

Social Affairs with members appointed by the municipal government from various organizations concerned. On June 17, 1941, five cities in Szechwan were ordered to start the regulation of wages.

The regulation of wages was extended to the entire nation on January 15, 1943, following the adoption of the *Program for Strengthening Price Control*, prepared by Generalissimo Chiang Kai-shek and adopted by the People's Political Council in October, 1942, and again by the 10th Plenary Session of the Kuomintang Central Executive Committee in November, 1942. Wages and transportation charges were to be stabilized simultaneously with commodity prices in accordance with the *Regulations Governing the Enforcement of the Program for Strengthening Price Control*, announced by the Generalissimo in a circular telegram to central and local authorities concerned on December 17, 1942.

The Ministry of Social Affairs on December 19, 1942, sent a circular telegram to provincial and municipal governments in relation to the stabilization of wages. The main points of this telegram are:

- (1) Wages prevailing on November 30, 1942, should be taken as the highest rate for the fixing of wages.
- (2) Areas for the restriction of wages are to be the same with those for price control.
- (3) The restriction of wages are to be extended to the following occupations: salt, cooking oil, textile, machinery, fuel, paper, printing, flour, sugar, barber, knitting, rickshaw and sedan chair, junk transportation, carpentry, masonry, and stone work.
- (4) A committee should be organized in each locality to decide wage rates. It is to be composed of representatives of local Party headquarters, local government, local *Sun Min Chu I* Youth Corps, the chamber of commerce, the labor union, and other related organs. The local competent administrative organs are the final authority in deciding the rates. Such organs are the reconstruction department or the social affairs bureau of the provincial governments, and the *hsien* governments.

- (5) The organization and control of industrial, commercial, labor, and other related public bodies at places where the restriction of wages is enforced should be strengthened.
- (6) The above-mentioned regulations shall replace the *Regulations Governing the Stabilization of Wages*.

VI. LABOR ORGANIZATIONS

China had 4,033 registered labor unions with a total membership of 1,053,656 at the end of 1942. Of them, 3,905 were ordinary unions with 942,243 members, and 122 special unions with 114,414 members. Of the ordinary unions, occupational unions numbered 3,492 while industrial unions numbered only 129. (See Table 51.) China has about 3,000,000 workers. Before the outbreak of the present war, there were 872 registered labor unions with a total membership of 743,764. Most of them were in big cities.

Several sets of regulations have been promulgated for the control of labor unions in wartime. Among them are the *Regulations Governing the Organization of Public Bodies in Time of Emergency*, and the *Provisional Regulations Governing the Control of Labor Union in Time of Emergency*. The *National General Mobilization Act* is applicable whenever provisions in it are involved.

The *Provisional Regulations Governing the Control of Labor Unions in Time of Emergency* were promulgated by the Executive Yuan on August 21, 1941. The main points are:

- (1) The control of labor unions should be first applied to occupational unions and then extended to industrial unions.
- (2) The control covers the following matters:
 - (a) Compulsory participation in the unions by qualified workers,
 - (b) Strengthening of the organization of basic units of the unions,
 - (c) Training of officers and members of the unions,
 - (d) Dispatch of government officials to direct and supervise the work of the unions, and

(e) Readjustment of the work and personnel of the unions whenever necessary.

(3) Labor unions should take the following as the center of activities:

- (a) Assisting the Government in the stabilization of wages,
- (b) Assisting the Government in the investigation of the workers' cost of living,
- (c) Directing their respective members in technical improvement and in the increase of production,
- (d) Promoting labor welfare projects,
- (e) Initiating wartime services,
- (f) Assisting the Government in the requisition of labor.

(4) The Government may subsidize labor unions for the prosecution of work, or order the related entrepreneurs to make appropriations.

(5) Unions of workers of state-owned, educational, communication, and public utility enterprises are not subject to the control of these regulations.

(6) Any one violating these regulations is subject to punishment.

Places where the control has already been enforced include 26 municipalities and *hsien* in Szechwan, 17 municipalities and *hsien* in Kwangtung, 14 municipalities and *hsien* in Hunan, five municipalities and *hsien* in Honan, four municipalities and *hsien* in Shensi, two municipalities and *hsien* in Kwangsi, and one each in Kweichow, Yunnan, and Chinghai.

The Ministry of Social Affairs is paying great attention to the training and organization of workers. In Chungking, a Workers' Service Corps was organized in 1940, comprising 31,375 workers from 26 labor unions. An Auxiliary Capital Air Raid Service Corps of 2,500 workers was also organized. Over 10,000 workers helped in transporting foodstuffs to Chungking under the direction of the Ministry. Organization has been completed among salt, railway, and highway workers throughout Free China.

TABLE 51. REGISTERED LABOR UNIONS IN CHINA (December, 1942)

PROVINCE	GRAND TOTAL		ORDINARY UNIONS							SPECIAL UNIONS					GRAND TOTAL
	Unions	Members	Provincial Unions	Hsien or Municipal Unions	Industrial Unions	Occupational Unions	Unions of Various Kinds of Workers	Others	Total	Railway	Highway	Seamen's	Junk	Total		Members
Hunan	733	194,030	..	27	34	640	2	..	703	..	..	..	30	174,908
Fukien	230	49,681	..	12	4	195	..	..	211	..	..	..	18	43,131
Szechwan	993	86,163	..	82	39	845	..	3	983	..	..	..	10	85,517
Chekiang	447	69,274	..	17	5	405	..	..	429	..	..	..	12	64,826
Honan	133	36,059	..	3	4	125	..	..	132	..	..	..	1	34,819
Kwangsi	125	40,919	..	10	6	101	..	..	117	..	..	..	8	37,074
Sikang	82	5,120	..	0	..	73	..	..	82	..	..	..	..	5,120
Kweichow	145	11,058	..	7	..	135	..	..	143	..	..	..	2	10,517
Kiangsi	192	27,010	..	20	1	167	..	..	189	..	..	..	3	21,360
Shensi	65	14,827	..	4	7	53	..	..	65	..	..	..	..	14,827
Kiangsu	2	184	..	..	..	1	..	..	1	..	..	..	..	184
Anhui	173	41,103	..	11	..	161	..	..	172	..	..	..	1	41,037
Hopei	168	201,284	..	4	1	160	..	..	165	..	..	..	3	199,602
Kwangtung	60	30,795	..	1	..	51	..	2	54	..	..	..	6	22,682
Yunnan	95	27,880	..	4	0	77	..	..	92	..	..	..	3	23,104
Kansu	130	11,220	..	9	11	101	..	2	130	..	..	..	..	11,220
Ningsia	80	1,635	..	6	..	23	..	..	30	..	..	..	..	1,635
Chinghai	11	2,239	..	..	..	..	..	9	11	..	..	..	..	3,230
Hankow	57	63,398	..	..	3	52	..	..	55	..	..	..	1	51,782
Canton	64	73,179	..	..	..	63	..	..	63	..	..	..	1	72,669
Peiping	8	4,537	..	..	3	6	..	..	8	..	..	..	..	4,537
Chungking	64	26,672	..	..	..	58	..	1	63	..	..	..	1	26,672
Directly registered with Central Government	26	35,389	..	..	..	..	..	7	7	..	..	..	..	2,964
GRAND TOTAL	4,033	1,053,656	2	226	129	3,492	31	24	3,905	6	2	13	101	942,243	
										6			19	114,414	

SOURCE: The Ministry of Social Affairs

Among the unions registered with the Ministry of Social Affairs is the Chinese Seamen's Union, which has its headquarters in Chungking and 12 branch unions, 154 sub-branch unions, and 437 small units, with a total membership of 37,667. This union is constantly fighting for the better treatment of Chinese seamen, especially those on foreign ships. Another organization is the Chinese Association of Labor, composed of 52 group members and 225 members, totalling more than 350,000 persons. It acts unofficially as the national organization for workers, as the National Labor Union is not yet established. Its chief purpose is to raise the cultural level of Chinese laborers in China and to promote labor welfare.

VII.—CHINA AND THE I.L.O.

China became a member of the International Labor Organization in 1919 after

she had signed the Treaty of Saint-Germain. She participates in all activities of the I.L.O. and sends delegates to all sessions of the International Labor Congress.

The National Government appointed Mr. Li Ping-heng and Dr. Yui Chun-chi, government delegates; Mr. Chu Hsueh-fan, workers' delegate; and Mr. Kinnwei Shaw, employers' delegate, to attend the Special Session of the International Labor Conference held in New York in October, 1941. At the meeting Mr. Chu was elected a member of the Governing Body of the International Labor Office.

The I.L.O. established its China Branch in 1930. It was in Shanghai before the outbreak of the Pacific War in 1941, but is now functioning in Chungking.

The war has necessarily changed the picture of Chinese mining industry as well as increased the knowledge of the nation's mineral deposits. Established mining enterprises in the "occupied" territories have been mostly lost to China at least for the duration of the war. The intensified studies made in the southwestern and northwestern provinces, however, have opened a new chapter hitherto unknown in Chinese mineral exploitation.

MINING LAW

The Chinese *Mining Law* as promulgated on May, 26, 1930, was revised for the third time on July 22, 1938, to meet wartime demands. The high lights of the law are:

1. All mineral resources within the boundary of the Republic of China belong to the state. No prospecting or exploitation of any mineral is allowed except when mining rights are granted by the Government according to law.

2. All citizens of the Republic of China have the rights of mining of minerals except in national mining districts and national reserves.

3. Foreign capital may be admitted in a mining company with approval from the Executive Yuan through the Ministry of Economic Affairs, subject to the following conditions:

- (a) The Chinese capital of the company shall be more than half of the total;
- (b) More than half of the directors of the company shall be Chinese citizens;

CHAPTER XII

MINERAL RESOURCES

- (c) The chairman of the board of directors and the manager of the company shall be Chinese citizens.

The above rulings are applicable to private mining industries as well as to those belonging to the central or local governments.

4. Iron, petroleum, copper, and coal reserves fit for the manufacturing of coke and liquid fuel shall be prospected and exploited by the Government. They may be leased to private enterprises when it is not necessary for the Government to undertake such prospecting and exploitation. The said private enterprises are limited to citizens of the Republic of China. The Government has priority in the purchase of iron ore, petroleum, and copper ore products. Any exportation of the above-mentioned minerals shall receive the sanction of the authorities. The Ministry of Economic Affairs shall determine the standard of coal deposits fit for the manufacture of coke and liquid fuel.

5. Iron, mineral oil, coal deposits fit for the manufacture of coke and liquid fuel, tungsten, manganese, aluminum, antimony, uranium, rhodium, potassium, apatite, molybdenum, tin, mercury, bismuth and other ores specified by the Executive Yuan at the request of the Ministry of Economic Affairs, may, when necessary, be designated as national reserves and private prospecting and exploitation of the said minerals be forbidden.

MINING AREAS

The areas of private mining claims as registered with the Ministry of Economic Affairs in Free China from 1938 to 1941 are tabulated as follows:

TABLE 1.—MINING AREAS

PROVINCE	Coal	Tin	Gold	Iron	Tungsten	Antimony	Lead	Manganese	Mercury	Bismuth	Molybdenum	Cobalt	Arsenic	Phosphorus	Fluorspar	Sulphur	Graphite	Barite	Talc	Asbestos	Mica	Gypsum	Kaolin	Fireclay	Quartz Sand	Total
Szechwan	628	...	83	34	...	...	2	...	...	...	...	...	...	...	...	2	...	4	...	...	...	2	4	...	759
Kwangtung	21	82	32	...	18	9	5	...	2	1	...	3	...	...	...	1	2	1	...	...	...	...	7	...	184
Hunan	50	17	19	14	3	1	5	2	...	1	...	...	1	...	...	1	3	...	...	...	...	3	2	...	122
Kwangsi	3	53	21	...	18	2	...	10	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	110
Yunnan	48	3	2	6	...	...	2	...	...	...	...	1	...	1	...	...	...	...	...	...	...	1	11	...	76
Kweichow	34	...	1	3	...	8	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	54
Shensi	43	...	...	6	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	30
Kiangsi	21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21
Honan	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15
Chekiang	1	...	...	...	...	...	1	...	...	...	...	...	...	...	10	...	...	...	...	...	...	...	...	...	12
Ningsia	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9
Katsu	5	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
Hupeh	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
Anbwei	2	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
Sikang	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2
Fukien	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
TOTAL	885	155	162	64	39	20	16	13	8	3	1	1	4	1	10	4	6	1	5	1	1	3	22	6	1	1,432

Besides, 288 more claims were registered with the Ministry from January to August in 1942, in addition to 595 small gold claims registered according to the *Wartime Gold Mine Claim Regulations*, up to the end of August, 1942. National reserves established between October, 1941, and August, 1942, include four iron reserves in Szechwan, one iron reserve in Yunnan, one iron reserve in Kwangtung, 11 tungsten reserves in

Hunan, one tungsten reserve in Yunnan, one coal reserve in Hunan, one coal reserve in Kweichow, six aluminum reserves in Yunnan, three aluminum reserves in Kweichow, one mineral oil reserve in Kansu, and one manganese reserve in Kweichow, totalling 31 reserves. In the same period, one national coal reserve each in Hunan and Honan and one national iron reserve in Szechwan have been leased to private enterprises for exploitation.

TABLE 2.—PREWAR MINERAL PRODUCTION OF CHINA (TONS)
(Excluding the Northeastern Provinces)

MINERALS	1932	1933	1934	1935	1936
Coal	18,490,971	18,585,271	20,493,342	14,938,000	15,034,000
Iron ore (Fe 35-60%+)	1,207,181	1,136,405	1,359,582	1,774,468	1,749,802(1)
Pig Iron	154,283	173,274	155,640	...	...
Steel	25,000	25,000	50,000	...	...
Mineral oil (barrels)	2,251	3,187	2,613	3,000	2,000
Manganese ore (Mn 45%+)	21,501	9,500	1,929	...	...
Tungsten ore (WO ₃ 60%+)	2,210	5,698	6,305	7,000	7,000
Molybdenum ore (Mo 45%+)	0.7	1.4	1.5	...	...
Gold (ounces)	99,450	94,608	86,926	...	...
Silver (ounces)	150,945	200,585	121,504	...	...
Copper ore	440	483	471	...	...
Zinc ore (Zn 36-42%+)	10,584	10,565	13,299	10,000	10,000
Zinc metal	57	147	136	...	...
Tin	7,253	8,358	8,004	9,000	11,000
Mercury	0.5	0.4	0.54	...	...
Antimony—Regulus	11,410	11,112	13,615	14,000	13,000
Crude	1,287	1,727	1,807	...	...
Oxide	1,408	1,327	914	...	...
Bismuth ore (Bi 40%+)	20	45	73	...	...
Arsenic ore (As 20-60%+)	1,427	1,159	1,206	1,000	1,000
Pyrite	45,000	43,000	40,000	...	...
Kaolin fireclay	791,000	796,650	805,000	1,000,000	1,000,000
Limestone	4,220,000	4,220,000	4,220,000	5,000,000	5,000,000
Rock salt	2,520,000	2,450,000	2,500,000	...	...
Gypsum	64,508	64,020	67,720	...	...
Alum	11,070	14,870	15,550	15,000	16,000
Saltpeter	5,000	4,950	5,000	5,000	5,000
Soda, natural	16,253	16,314	16,445	...	...
Sulphur	3,918	3,781	3,464	...	...
Asbestos	250	236	220	...	...
Fluorspar	3,510	4,800	5,050	7,000	8,000
Talc	1,680	3,000	3,000	...	...
Feldspar	25,077	21,589	22,780	...	...
Barite	505	3,092	9,500	...	...
Quartz sand	100,000	100,000	100,000	...	...

(1) Anhwei and Hupeh production plus those produced from native mines.

TABLE 3.—MINERAL PRODUCTION IN THE SOUTHWEST (TONS)
(Szechwan, Sikang, Yunnan, Kweichow, Kwangsi)

MINERAL	1935	1936	1937	1938	1939
Coal	1,973,060	2,001,042	2,105,013	2,706,811	3,060,864
Iron ore	85,000	85,000	85,000	100,000	140,000
Manganese ore	30,000	60,000	120,000	...	...
Tungsten ore	637	1,316	2,059	1,544	2,000
Gold (ounces)	39,180	40,865	47,329	64,332	69,534
Silver (ounces)	1,200	1,200	1,200	1,200	1,200
Copper ore	345	284	362	352	726
Zinc (pure)	283	264	295	286	240
Lead (pure)	482	467	467	427	480
Tin (pure)	8,745	11,850	12,004	12,532	12,000
Mercury	...	4.9	15.9	18.4	14.3
Antimony ore	6,000	6,000	6,605	7,726	7,000
Antimony, pure	...	...	967	2,153	2,045
Arsenic	95	100	80	50	25
Salt	408,300	418,600	404,850	417,900	420,000
Salt peter	2,300	2,300	2,300	2,300	2,300
Soda	35,000	25,000	25,000	25,000	25,000
Niter	300	300	300	300	332
Sulphur	1,500	1,500	1,500	1,500	1,500
Cement	...	...	6,075	28,622	35,923

TABLE 4.—IMPORTANT MINERAL RESERVES IN CHINA AND
SOUTHWEST CHINA (TONS)

MINERAL	Southwest China	China	Percentage
Coal: Anthracite	1,101,000,000	...	...
Bituminous	7,910,000,000	...	...
Lignite	1,411,000,000	...	...
Others	106,000,000	...	...
TOTAL	10,528,000,000	240,847,000,000	4.3
Iron	70,377,782	1,694,011,160	4.1
Mineral Oil (barrel)	396,802,674	1,273,000,000*	31.2
Tungsten	25,365	1,872,000	1.3
Manganese	3,638,000	20,201,609	18.0
Copper	2,589,965	...	...
Tin	52,000	...	...
Antimony	630,897	2,671,000	21.2
Phosphorus	14,551,680	...	...

* Szechwan and Shensi oil reserves.

COAL

The most reliable of all estimates of probable coal deposits of China is that made by the National Geological Survey of China in 1934 which has since been revised after new findings and further stud-

ies in the southwestern and northwestern provinces. A number of survey parties are still out in the field studying and checking up on the nation's coal deposits, especially in the Northwest. The known figures by province are as follows:

TABLE IV.—COAL RESERVES (MILLION TONS)

PROVINCE	Anthracite	Bituminous	Lignite	Estimate	Total
Anhwei	60	300	...	...	360
Chahar	17	487	...	...	504
Chekiang	22	78	...	...	100
Chinghai	...	...	...	500	500
Fukien	291	105	...	...	396
Heilungkiang	6	619	392	...	1,017
Honan	4,455	3,309	...	...	7,764
Hopei	981	2,088	2	...	3,071
Hunan	1,043	721	...	...	1,764
Hupei	160	280	...	...	440
Jehol	2	573	39	...	614
Kansu	...	...	...	1,500	1,500
Kiangsi	216	776	...	...	992
Kiangsu	25	192	...	...	217
Kirin	2	986	155	...	1,143
Kwangsi	114	80	...	106	300
Kwangtung	50	371	...	...	421
Kweichow	748	622	...	...	1,370
Liaoning	187	1,649	...	...	1,836
Ningsia	166	322	...	...	488
Shansi	36,471	87,985	2,671	...	127,127
Shantung	26	1,613	...	...	1,639
Shensi	750	71,200	...	...	71,950
Sikang	3	501	27	...	531
Sinkiang	...	...	...	6,000	6,000
Suiyuan	58	396	22	...	476
Szechwan	225	5,761	...	...	5,986
Yunnan	11	946	1,384	...	2,341
TOTAL	46,089	181,960	4,692	8,106	240,847

TABLE V.—COAL PRODUCTION IN THE FIVE SOUTHWESTERN PROVINCES (TONS)

PROVINCE	Coal	1935	1936	1937	1938	1939
Szechwan	Bituminous	1,402,460	1,428,174	1,528,888	2,113,840	2,462,159
	Anthracite	90,000	90,000	90,000	90,000	90,000
	Total	1,492,460	1,518,174	1,618,888	2,203,840	2,552,159
Yunnan	Bituminous	102,800	102,800	103,193	108,500	111,800
	Anthracite	15,000	15,000	15,000	15,000	15,000
	Lignite	42,500	42,500	42,960	45,200	45,200
	Total	160,300	160,300	161,153	168,700	172,000
Kwangsi	Bituminous	18,300	20,068	19,800	21,800	16,800
	Anthracite	17,000	17,000	17,672	17,821	18,000
	Lignite	1,000	1,000	1,000	1,000	1,000
	Total	36,300	38,068	38,472	40,621	35,800
Sikang	Bituminous	6,000	6,500	6,500	6,500	6,500
	Anthracite	18,000	18,000	20,000	20,000	20,000
	Total	24,000	24,500	26,500	26,500	26,500
Kweichow	Bituminous	220,000	220,000	220,000	223,200	230,455
	Anthracite	40,000	40,000	40,000	43,950	43,950
	Total	260,000	260,000	260,000	267,150	274,405
TOTAL	Bituminous	1,749,560	1,777,542	1,878,381	2,473,840	2,827,714
	Anthracite	180,000	180,000	182,672	186,771	186,950
	Lignite	43,500	43,500	43,960	46,200	46,200
GRAND TOTAL		1,973,060	2,001,042	2,105,013	2,706,811	3,060,864

The figure is 1,940,000,000 tons more than the 1934 report. The actual coal deposits in China are probably even greater.

The most noteworthy increase in coal production is seen in the output of coal mines exploited by the Government. There are at present 23 Government coal mines. The National Resources Commission of the Ministry of Economic Affairs alone operates altogether 19 coal mines scattered in Szechwan, Yunnan, Hunan, Kweichow, Kansu, Shensi, Sikang, Kwangsi, Kwangtung and Kiangsi. Two of the coal mines in Szechwan, one in Yunnan and one in Kweichow, are

producing either metallurgical coke or semi-coke for industrial and household uses. The increase in percentage can be seen from the following table:

TABLE VI.—PRODUCTION INCREASE OF GOVERNMENT COAL MINES (1937—100%)

Year	Percentage
1937	100
1938	5,449
1939	3,704
1940	6,366
1941	10,412
1942	16,888

There is also a steady increase in the production of private coal mines in Free China as seen from the following:

TABLE VII.—PRODUCTION INCREASE OF PRIVATE COAL MINES IN FREE CHINA (1940—100%).

Year	Percentage	Tons
1940	100	4,010,000 tons
1941	113	4,650,500 "
1942	123	4,933,000 "

Annual coal consumption in the five southwestern provinces amounts to 3,058,600 tons, distributed as follows:

TABLE VIII.—COAL CONSUMPTION IN THE SOUTHWEST (TONS)

Province	Industrial Use	Metallurgical Use	Communitation Use	Household Use	Total
Szechwan	1,200,000	30,000	180,000	1,140,000	2,550,000
Yunnan	..	8,200	21,300	142,000	171,500
Kwangsi	..	13,000	..	22,000	35,000
Kweichow	..	1,600	..	274,000	275,600
Sikang	16,000	1,000	..	9,500	26,500
Total	1,216,000	53,800	201,300	1,587,500	3,058,600
Percentage	39.7	1.7	6.6	51.9	100

PETROLEUM

Oil fields chiefly exist in Kansu, Shensi, Sinkiang, and Szechwan. Findings are also reported from Chekiang, Kweichow, and Sikang where more intensified survey is necessary to determine their economic value. Oil shale occurs in Kwangtung, Shensi, Szechwan, Kwangsi, Shansi, Chahar, Jehol, and Liaoning.

Oil reserve in China is an unknown factor, as extensive studies are still being carried on in the leading oil fields. The United States Geological Survey estimated that the Chinese oil reserve was 1,375,000,000 barrels, excluding the Fushun (Liaoning) shale-oil which was estimated by the American institution at 1,899,000,000 barrels. Thus, the national total was put at 3,274,000,000 barrels. The National Geological Survey of China estimated in 1934 that China Proper had a known reserve of 2,227,000,000 barrels, including 1,375,000,000 barrels in Shensi and Szechwan and 852,000,000 barrels from Shensi oil-shale. Besides, there were also 2,110,000,000 barrels of mineral oil in the four northeastern provinces including 2,109,000,000 barrels

from the Fushun oil-shale and less than a million barrels in Manchouli. Thus, the national total was 4,337,000,000 barrels. The estimates of both American and Chinese geological surveys, however, were conservative as the important Kansu and Sinkiang reserves were not included in their calculations. According to recent findings, rich oil fields exist on both sides of the Tianshan Range in northern Sinkiang and the Chilienshan Range in the Kansu Corridor. It is estimated that the oil field in western Kansu is sufficient for several hundred years of large scale exploitation. And there are several such reserves along the Chilienshan Range in Kansu.

In southwest China, Szechwan is the most hopeful possible oil field. From Chungking in the east to Loshan and Kienwei in the west, Jenschou and Tahsien in the north to Tzeliatsing in the south, oil fields are found in a number of places. Such wide distribution indicates the richness of Szechwan oil reserves. The estimated reserves of the known oil-producing territories amount to at least 306,802,672 barrels, according to the National Geological Survey of China. The figure is considered conservative. More intensified studies are necessary to determine the value of these fields and to make possible new findings. The survey places the Szechwan and Shensi oil reserves at 1,273,000,000 barrels at present.

Three of China's oil fields are producing in a scientific way. The northern Shensi field yields oil through wells dug at Yenchang and Yungping. The Yenchang well, first dug in 1907, is still producing oil to supply local needs. It used to yield 2,000 cattles of oil a day at a depth of 100 meters. The Yungping well produced more than 5,000 cattles a day at 70 meters. The output of both wells, however, has been reduced since the war began.

Oil fields in Kansu were geologically surveyed in 1934-1937. Prospecting work was started by the National Resources Commission in 1938 and drilling work began in 1939. It has now been proved that the oil field is very rich and capable of large-scale production. The wells already sunk are 14 in number and all are producing, three of them yielding great quantities at considerable pressure. At present, two refineries have been established, one with three sets of shell stills to produce straight distillates, is situated in the field while the other with a semi-cracking unit is situated some distance east of

the field. Both refineries are now producing gasoline together with some amount of kerosene and Diesel oil. In order to save the big loss in topping crude resulting from the straight distillation units, a 1,500-barrel refinery, complete with distillation, thermal-cracking and polymerization plants and capable of producing 64% gasoline, has been ordered from the United States. A greater part of the equipment had been shipped from America when the Pacific War broke out, but on account of the unfavorable turn of the situation in Burma, a portion of the machinery was lost at Bhamo and Wanting.

Pending the arrival of new machinery ordered from America, native made equipment is still used producing a lesser percentage of gasoline. The total production is, however, increasing, and it becomes necessary to sink more wells for which new equipment is needed.

The increase of Kansu oil production is as follows:

TABLE IX.—INCREASE OF KANSU OIL PRODUCTION (1940—100)

	1940	1941	1942
Crude Oil	100	876	7,408
Gasoline	100	286	2,425
Kerosene	100	332	1,616

Sinkiang has a modern plant by the side of the Tianshan Range. Szechwan produces about 92,000 cattles of crude oil a year from natural wells. Prospecting has been going on at different localities to determine the Szechwan oil reserves.

Besides, the National Resources Commission has set up a low-temperature coal distillation plant in West Szechwan, where bituminous coal of satisfactory quality occurs in large quantities. This plant is now producing gasoline substitute, Diesel oil, crude phenol and semi-coke. The gasoline substitute produced there possesses high octane number and is good for aviation although the amount of production at present is comparatively small.

IRON

China has an estimated known iron ore reserve of 1,694,013,120 tons. Old figures may be revised as new findings are expected of survey parties now studying iron reserves in the southwestern and

northwestern provinces. The distribution of the known iron reserves is as follows:

TABLE X.—IRON ORE RESERVES IN CHINA (TONS)

LOCALITY		Tonnage
Chahar Hopei	Hsuanhua	91,645,000
	Lwanhsien	32,424,000
	Yih sien	1,500,000
	Taingsing	7,755,000
	Kaiping-Lwanhsien	150,000
Shantung	Funing-Lingyu	350,000
	Chinglincheng	13,700,000
	Feih sien	640,000
Honan	Hungshan	740,000
	Sinyang	2,000,000
Suiyuan Shensi	Kuyang	700,000
	Peiyungshan,	88,000,000
Kansu Kiangsu	Likuoyi	3,000,000
	Fenghuangshan	4,437,000
Anhwei	Tungkwanshan	4,921,000
	Chihwanshan	4,000,000
	Tangtu	6,298,000
	Changlungshan	4,645,000
	Changhsin	5,130,001
Chekiang	Chienteh	2,024,000
	Tayeh	19,861,870
	Hsiangpishan	6,735,007
Hupeh	Lingsiang	5,018,500
	Ocheng	10,000,000
	Itu	4,000,000
Kiangsi	Chengmenshan	6,300,000
	Lienhua	1,260,000
	Pingsiang	3,898,000
	Tungtengshan	580,000
	Yuanling	1,050,000
Hunan	Anhua	4,160,000
	Sikwanshan	3,600,000
	Chaling	3,900,000
	Ningsiang	8,300,000
	Yuh sien	14,000,000
Szechwan	Chikiang	3,242,000
	Fowling	1,506,400
	Weiyuan	2,500,000
	Hungyah	2,340,500
	Yimen	2,890,250
Yunnan	Oshan	4,000,000
	Luku	7,800,000
	Hwelli	4,000,000
Sikang	Taofu	1,619,100
	Yungching	882,000
	Hanyuan	645,000
Kweichow	Weining	5,800,000
	Suicheng	23,152,532
	Huan-Changping	13,160,000
Fukien	Anchi-Pangtien	7,800,000
	Anchi-Chengchi	1,462,000
	Yunfu	10,000,000
Kwangtung	Tzeching	5,000,000
	Lienkiang-Liangtang	8,000,000
		1,221,486,000
Northeastern Provinces	TOTAL	1,694,011,160

Production of pig iron in Free China is rapidly increasing as a result of government encouragement. Furnaces under the direct control of the Government produced in 1942 three and a half times the total output in 1941, whereas the 1941 output was 45 per cent more than that in 1940. For private-owned furnaces, the production of pig iron increased from 100 per cent in 1940

to 259 per cent in 1941 and 555 per cent in 1942.

Rapid increase is also seen in the production of steel in Free China. The production of steel by government-owned steel works in the first half of 1942 was three times the entire 1941 output. Steel production by private-owned furnaces was 100 in 1940, 122 in 1941, and 146 in 1942.

One of the most important promoters in China's iron and steel industries is the National Resources Commission which before the outbreak of the present Sino-Japanese War planned to establish an iron and steel plant in Hsiangtan, Hunan. The construction work of the plant was in progress when the war broke out. It was then suspended. As an emergency measure, the essential parts of the Hanyang Iron Works in Hanyang, Hupeh, weighing about forty thousand tons of machinery and materials, were removed to Szechwan and re-installed in Chungking. It is now

producing pig iron, iron castings and steel, all for the use of arsenals.

In order to increase the production of iron, three blast furnaces have been set up in Szechwan in addition to one each in the provinces of Yunnan, Kwangtung, Kwangsi and Kiangsi. For the production of steel, the Commission has set up two steel making plants, one in Chungking and the other in Kunming. The Chungking plant started production at the end of 1942.

In addition, the Commission has under construction a special iron smelting plant producing pure iron by the direct treatment of ore. The product, known as "sponge iron," may be remelted and converted into high grade steel to meet the requirements of war industries.

TUNGSTEN

Most of China's known tungsten reserves are found in Kiangsi. Out of the known national total of 1,872,000 tons, southern Kiangsi has 1,013,001. The distribution of tungsten reserves in China is as follows:

TABLE XI.—ESTIMATED TUNGSTEN ORE RESERVES IN CHINA (TONS)

LOCALITY		Tonnage
Kiangsi	Kanhsien, Shihjenkeng-Liulangheng	60,875
	Kanhsien, Pichiasan-Hahushan	3,695
	Suichuan, Liangpichou	2,730
	Nanking, Tzeshuwou-Changpang	21,410
	Nankang, Chingshantze-Sinti	113,141
	Tayu, Shialung	3,027
	Taya, Sihushan	228,000
	Tayu, Hlochung	11,760
	Tayu, Chiulunglou	12,920
	Tayu, Hungshuichia	37,800
	Ta., Shiaotungkeng	22,575
	Tayu, Senlungkou	81,900
	Tayu, Tangping	53,000
	Tayu, Piaotang	5,584
	Anyuan, Pengkushan	109,692
	Huichang, Paloutze	14,891
	Lungnan, Weimeishan	210,000
Chiennan, Tachishan	20,000	
Kiangsi Total	1,013,001	
Hunan	Juncheng, Paiyunshan	7,000
	Kweitung, Chingtungshan	2,500
	Chaling, Tengpushan	7,200
	Tzeshin, Yaokangshan	3,700
	Linwu, Naitzeling	1,000
Hunan Total	21,400	
Kwangtung	Wongyuan, Suitung	126,000
	Lochang, Tiehtington	22,855
Kwangtung Total	148,855	
Kwangsi	Kunghsien	14,555
	Nantang, Huilochun	5,240
	Sintu, Takweishan	2,831
	Tenghsien, Taipingchwang	2,525
	Hweichi, Fangchishan	218
	Kwangsi Total	25,369
Others		663,375
TOTAL		1,872,000

There are tungsten reserves in Yunnan, Hopei, Chekiang, and other provinces which need more intensive study. Thus, the country has more than the estimated 1,872,000 tons of tungsten ore reserve.

Tungsten ore is controlled by the National Resources Commission and exported to Allied nations after careful dressing. At present, three tungsten

mines are being operated in Kiangsi by the Commission with modern equipment and modern methods of mining. In Kiangsi, Hunan and Kwangsi, ore dressing units improve the quality of tungsten ore.

Production of tungsten ore in the five southwestern provinces may be seen from the following table:

TABLE XII.—TUNGSTEN ORE PRODUCTION IN SOUTHWEST CHINA (TONS)

LOCALITY	1935	1936	1937	1938	1939
Kwangsi Kungcheng, Limu-Kwanying	206	698	965	365	...
Kungcheng, Chiupo-Chiahui	31	8	14	12	...
Pingyang, Kaotien-Kunlun	200	200	200	200	...
Nantang, etc.	...	160	200	320	...
Yunnan	200	250	690	650	...
TOTAL	637	1,316	2,009	1,547	...

MANGANESE

Manganese ore is found mainly in Hunan, Kiangsi, Kwangsi, and Kwangtung. Other findings are also reported

in Szechwan, Hupeh, Chekiang, Kansu, Hopei, and Liaoning. The known manganese ore reserves are as follows:

TABLE XIII.—ESTIMATED MANGANESE ORE RESERVES IN CHINA (TONS)

LOCALITY	Tonnage	Kind of Ore	Content
Kiangsi Loping, Tatiehsanfang	670,903	Psilomelane, Pyrolusite	51.44%
Loping, Tatiehsanfang	342,459	Psilomelane (sand), Pyrolusite	20.30%
Loping, Shiaotiehsanfang	114,429	Pyrolusite	43.96%
Loping, Shiaotiehsanfang	72,994	" (sand)	20%
Hunan Hsiangtang, Shangwutu	1,300,000	"	30.53%
Kwangsi Wuhsuan, Sanlinsu	1,638,000	Psilomelane	42-50.6%
Kweiping, Mukweimapi	2,000,000	"	49.44%
Kwangtung Chihhsien, Kungtungling	8,000,000	Pyrolusite	20-52%
Chihhsien, Tiaoyukung	4,000,000	"	20-50%
Kweichow Sanho	62,824		
Others	2,000,000		
TOTAL	20,201,609		

Most of China's manganese ore production is for export. Besides that produced in Kiangsi, Hunan, and

Kwangtung, manganese produced in the southwest area may be seen from the following table:

TABLE XIV.—MANGANESE ORE PRODUCED IN SOUTHWEST CHINA (TONS)

LOCALITY	1935	1936	1937	1938	1939
Kwangsi, Wuhsuan, Sanlinsu	20,000	20,000	20,000	...	...
Kweiping, Mukwei	10,000	40,000	100,000	...	...
TOTAL	30,000	60,000	120,000	...	...

GOLD AND SILVER

Gold mines of China are widely distributed. The leading production centers are in Heilungkiang, Kirin, Liaoning, Mongolia, Sinkiang, Hopei, Kansu, Chinghai, and the Szechwan-Sikang district. Most of the mines are exploited by native miners with crude tools and primitive methods. Very few of the mines are worked with modern machinery.

The Ministry of Economic Affairs has a Gold Mining Administration. The work of this administration is mainly to prospect possible reserves for future exploitation. It also reclaims some 6,500 ounces of gold each year.

Estimated gold production figures in the five southwestern provinces are as follows:

TABLE XV.—ESTIMATED GOLD PRODUCTION IN SOUTHWEST CHINA (OUNCES)

LOCALITY	1935	1936	1937	1938	1939
Sikang Yenyuan	600	843	900	1,000	1,000
Changhua	2,000	2,000	2,000	2,500	3,000
Yuko	...	...	...	1,000	3,000
Serpa	...	...	...	1,500	1,500
Kangting	740	850	655	700	700
Taining	90	25	105	500	850
Taofu	535	...	12	1,000	1,200
Mianning	100	100	100	100	100
Lihua	5,000	5,000	5,000	5,000	5,000
Luhu	100	...	23	360	100
Yakiang	20	50	100	300	200
Kangtze	...	...	130	300	500
Tehken	25	...	170	200	200
Yenpien	10	10	10	10	19
Tienchuen	500	500	500	500	500
Sikang Gold Mining Bureau	...	...	...	...	1,464
Szechwan Kuohua Co.	3,000	3,000	3,000	2,000	2,500
Min River	500	500	500	800	1,000
Chialing River	2,000	4,000	10,000	14,000	15,000
Tungho	600	600	600	800	1,000
Chingshakiang	4,000	4,000	4,000	4,000	4,500
Fow River	10,000	10,000	10,000	15,000	15,000
Sungpang	...	...	...	152	500
Kwangsi Shanglin	3,350	3,377	3,514	3,600	3,600
Pingkwei Mining Bureau	...	...	...	...	100
Yu River	4,000	4,000	4,000	4,000	4,000
Kweichow Tienchu-Chingping	...	...	...	3,000	1,000
Fanchingshan	10	10	10	10	10
Yunnan	2,000	2,000	2,000	2,000	2,000
TOTAL	39,150	40,865	47,329	64,332	69,534

A small amount of silver is produced in China as a by-product of lead smelting. The nation produced 119,595 ounces of silver in 1930, 105,000 ounces in 1931, 150,945 ounces in 1932, 200,585 ounces

in 1933, and 121,504 ounces in 1934. In southwest China, Huitze (Yunnan) produces about 700 ounces of silver a year, whereas Lutien (Yunnan) produces from 500 to 1,000 ounces a year.

COPPER

Copper deposits are found in most of the Chinese provinces, with main reserves in Yunnan, Kweichow, Szechwan, and

Sikang. Findings are also reported in Hupeh and Shansi. Copper reserves in the five southwestern provinces are as follows:

TABLE XVI.—ESTIMATED COPPER RESERVES IN SOUTHWEST CHINA (TONS)

PROVINCE	LOCALITY	Estimated pure Copper Content	Possible pure Copper Content
Szechwan	Penghsien	23,524	85,270
Yunnan	Yungsheng	6,370	...
	Yimen ...	5,300	80,000
Sikang	Hweili, Luchang	186,621	...
	Hweili, Tungan	600,000	...
	Yuehchun, Haitang	2,200	...
	Yuehchun, Shoyotsao	71,400	...
	Yungching	3,250	...
	Tienchuan	1,300	...
Kweichow	Weining	1,690,000	2,500,000
	TOTAL	2,589,965	...

Production centers of copper are a year. The need for copper, however, well exceeds the ten thousand mark. The production figures are as follows:

TABLE XVII.—COPPER PRODUCTION IN SOUTHWEST CHINA (TONS)

PROVINCE	COMPANY OR LOCALITY	1935	1936	1937	1938	1939
Yunnan	Huitze, Tungchwan Co.	245	169	202	89	...
	Huitze, Tienpen Mining Bureau	...	...	...	...	300
	Yungsheng, Milichang	94	94	150	250	260
	Yimen, Yingtai Co.	6	6	6	6	6
Szechwan	Penghsien, Penghsien Copper Mining Bureau	...	...	...	...	40
Sikang	Hweili, Luchang-Tungan	...	15	4	4	...
	Yuehchun, Haitang	...	...	...	3	...
	Szechwan-Sikang Copper Control Bureau	...	...	...	...	100
	TOTAL	345	284	362	352	706

As to the refining of copper, two electrolytic copper refineries are now in operation, one in Chungking and one in Kunming. The one in Chungking treats crude metal from northwest

Szechwan and Sikang, and refines it to a produce of 99.95% purity mainly for military use, while the other in Kunming treats crude copper chiefly from north Yunnan.

LEAD AND ZINC

In China, lead and zinc deposits are usually found together. The leading lead and zinc producing center is Suikoushan in Changning, Hunan. They are also produced in Yunnan, Sikang, Szechwan, Kwangsi, and Kweichow, the last three provinces in smaller amounts.

The Tienpaoshan zinc reserve at Hweili in Sikang amounts to 1,680,000 tons. The Suikoushan area produced in 1934 a total of 6,460 tons of lead, 4,778 tons of lump zinc ore, and 8,068 tons of dust zinc ore. The lead and zinc production in the southwestern provinces is as follows:

TABLE XVIII.—LEAD AND ZINC PRODUCTION IN SOUTHWEST CHINA (TONS)

PROVINCE	COMPANY OR LOCALITY	1935		1936		1937		1938		1939	
		Lead	Zinc	Lead	Zinc	Lead	Zinc	Lead	Zinc	Lead	Zinc
Yunnan	Tungchwan Co.	132	33	117	14	117	45	77	46	...	...
	Tienpeh Mining Bureau	...	...	...	...	...	...	...	...	280	...
	Huitze, Hsintai Co.	200	200	200	200	200	200	200	200	200	200
	Tsanglang	150	...	150	...	150	...	150	...	...	...
Sikang	Hweili, Tienpaoshan	...	50	...	50	...	50	...	40	...	40
	TOTAL	482	283	467	264	467	295	427	286	480	240

TIN

The chief tin producing center in China is the Kochiu district in southern Yunnan where cassiterite is obtained both from superficial deposits and rock ores. Tin is also produced at Hohsien, Chungshan, and in other counties in Kwangsi, Kiangsi, Kwangtung, and Hunan.

Designated as an export mineral, tin is controlled by the Government. More than 10,000 tons of tin produced each year by government and private mines is bought by the Government for export.

As the result of research on the part of the National Resources Commission, the Kwangsi mines have produced tin with an average metal content of 99.80% which is even better than the world standard of 99.75%. In Yunnan, an important center of Chinese tin industry, the Commission has also established some tin smelters, the equipment of which came largely from America. Production of tin in the southwestern provinces is as follows:

TABLE XIX.—TIN PRODUCTION IN SOUTHWEST CHINA (TONS)

Province	Locality	1935	1936	1937	1938
Yunnan	Kochiu	7,527	9,910	8,914	9,000
Kwangsi	Hohsien		1,345	1,648	1,808
	Chungshan		381	910	1,279
	Fuchwan		28	56	194
	Kungcheng		87	367	117
	Nantang-Hochi		118	99	109	109
	Chuanhsien	...	...	...	25
	TOTAL	8,745	11,850	12,004	12,532

Besides, about 600 tons were produced at Tayu in Kiangsi, 92 tons at Kianghua and Linwu in Hunan, and 50 tons at Tinpak in Kwangtung according to a 1934 report.

TABLE XX.—EXPORT OF TIN INGOTS FROM SOUTHWEST CHINA PORTS (TONS)

PORT	1936	1937	1938
Mengtze	9,105	9,466	9,260
Wuchow	1,252	2,293	1,867

TABLE XXI.—MERCURY PRODUCTION IN SOUTHWEST CHINA (TONS)

PROVINCE	LOCALITY	1936	1937	1938	1939
Kweichow	Sunchi, Wangshanchang	2.3	6	8	8
	Sunchi, Tatunglah	1.7	2	3	3
	Sunchi, Yehwuping	0.8	6.4	6.1	2.3
	Pachai, Tafahtung	...	0.4	0.4	0.4
	Sanho, Wangchiachai	0.1	0.8	0.6	0.3
Kwangsi	Kungcheng, Siling	...	0.3	0.3	0.3
	TOTAL	4.9	15.9	18.4	14.3

The Fenghuang and Huanghsien mines in Hunan produced 22 tons of mercury in 1931. Rapid progress has been made in mercury production in Kweichow in recent years. Most of the Kweichow mines today produce in one month twice or thrice their annual production two or three years ago.

ANTIMONY

The production of antimony in China is led by Hunan province where the famed Hsikuangshan at Hinhua, is located. Besides, Anhua, Yiyang, Shaoyang, Yuanling, Sinning, Tungan, Hsupu, Yichang, and a number of other localities in Hunan are antimony producers. Kwangtung, Kwangsi, Kweichow, and Yunnan produce antimony in different quantities.

Hunan produced 13,000 tons of regulus antimony, 2,700 tons of crude antimony, and 1,400 tons of antimony oxide in 1936. The production has been kept up in recent years. Antimony is also subject to government control. Thousands of tons are exported each year. As to the smelting of antimony, the National Resources Commission has

MERCURY

Mercury is chiefly produced in Fenghuang and Huanghsien in Hunan, where 20 tons of Chinnabar are produced each year, whereas Tungjen, Pachai, Sunchi, Sanho in Kweichow, Kungchen in Kiangsi, and Yuyang and Siushan in Szechwan also produce mercury in different quantities. Also a government controlled mineral, more than 120 tons of mercury was exported in 1941 and about 200 tons sold abroad in 1942. The mercury mined and smelted on the border of Hunan and Kweichow provinces has on the average reached the purity of 99.98%, which is good enough for the world market.

Production of mercury in the southwestern provinces is as follows:

succeeded in bringing up its quality to a standard containing more than 99.8% of antimony and less than 0.1% of arsenic, which is much better than the present Chinese antimony regulus. The reserve and production of antimony in the southwestern provinces may be seen from the following tables:

TABLE XXII.—ESTIMATED ANTIMONY RESERVE IN SOUTHWEST CHINA (TONS)

PROVINCE	LOCALITY	Tonnage
Kweichow	Kiangkow, Fangchingshan	400,000
	Tushan, Miaolin	3,000
	Yungkiang, Yumeng	15,000
	Chiatukiang, Hoshaochai, Wufengshan	41,040
	Sanho, Miaolungchang	17,160
	Sanho, Kaotung	2,980
	Sanho, Hsiapai	272
	Pachai, Tsaisha	288
Kwangsi	Hochi-Nantang	51,257
	Yu River	100,000
	TOTAL	630,897

China has a known antimony reserve of 2,671,000 tons.

TABLE XXIII.—ANTIMONY PRODUCTION IN SOUTHWEST CHINA (TONS)

Province	Locality	1935		1936		1937		1938		1939	
		Ore	Pure	Ore	Pure	Ore	Pure	Ore	Pure	Ore	Pure
Kwangsi	Hochi	1,000	..	1,000	..	1,300	} 952	1,500	} 2,000	1,500	} 2,000
	Yu River	5,000	..	5,000	..	5,000					
	Pingyang-Wuming	..	..	..	..	..
Yunnan	Pingyi-Kaiyuan-Wenshan	..	..	..	..	15	..	15	..	15	
Kweichow	Sanho-Tukiang	..	..	..	..	305	..	1,226	138	500	30
	TOTAL	6,000	..	6,000	..	6,605	967	7,226	2,153	7,000	2,045

MOLYBDENUM

Molybdenum is produced in small quantity in Chekiang, Fukien, Shantung, Kwangtung, Kwangsi, Hunan and Kiangsi, mostly found together with tungsten and bismuth. A very small amount of molybdenum is also produced at Pingyang and Hohsien in Kwangsi, but the amount is insignificant.

NICKEL

Sikang has two good reserves of nickel. One is at Limaho in Hweili which has nickel ore amounting to 70,000 tons. Another reserve lies at Tungkouchang in Tienchuan where the amount is estimated at 270,000 tons. There is practically no production of nickel in Free China.

ARSENIC

Arsenic oxide is obtained by oxidizing the arseno-pyrite which occurs in association with iron pyrite in southern Hunan. Realgar and orpiment are worked in Yunnan and western Hunan. Kwangsi also produces arsenic oxide. In 1935, Linwu, Changning, Chenhsien, etc., in southern Hunan produced 820 tons of arsenic oxide; Fengyi in Yunnan produced 341 tons of realgar and orpiment; Hohsien, Fuchwan, Chungshan, Hochi, and Nantang in Kwangsi produced 15 tons of arsenic oxide. They made a total of 1,206 tons. About 100 tons of ore are still produced each month by the Fengyi mines.

BISMUTH

Bismuth ore is found usually as an accessory mineral with tungsten and

thus worked and mined together with tungsten. The leading producers are Kwangsi, Kiangsi, Kwangtung, and Hunan. A total of 130 tons of bismuth was produced in 1931. The amount decreased to 73 tons in 1934.

BAUXITE

Bauxite is mainly found in Liaoning and Shantung. It was recently discovered in Yunnan and Kansu. The Shantung reserves have a total of 271,000,000 tons of bauxite which can give 68,000,000 tons of aluminum. The Liaoyang and Fuhsien reserves in Liaoning have 110,000,000 tons of reserves with an aluminum content of 40-58 per cent. The Yunnan reserves are still under study. The Kansu reserve is estimated at 351,350,000 tons of bauxite with an aluminum content of 22.57-38.52 per cent.

SALT

Salt is produced in most provinces in China. The coastal provinces produce salt from sea water. Northwestern provinces produce salt from salt lakes. The southwestern provinces get their salt supply from rock salt and salt wells in which the rock salt is melted by underground water. The nation produced 53,686,000 piculs (3,220,000 tons) of salt in 1934, including sea, lake and rock salt. Free China salt production in 1941 amounted to 19,200,000 piculs. Salt production in the southwestern provinces may be seen from the following table:

TABLE XXIV.—SALT PRODUCTION IN SOUTHWEST CHINA (PICULS)

PROVINCE	1935	1936	1937	1938
Szechwan	7,340,000	7,370,000	7,091,000	8,442,000
Yunnan	778,000	935,000	956,000	950,000
Sikang	48,000	47,000	50,000	44,000
TOTAL	8,166,000	8,352,000	8,097,000	9,436,000

GYPSUM

Important gypsum producing centers in China are Yingcheng in Hupeh, Hsiangtan in Hunan, and Pinglu in Shansi. It is also produced in Szechwan, Kweichow, Kwangtung, Kwangsi, Yunnan, Shensi, Kansu, Kiangsu, Anhwei, and Sinkiang. In 1934, Yingcheng produced 58,000 tons of gypsum, Hsiangtan 7,100 tons, and Pinglu 2,500 tons. Chuhsien in Szechwan produced 1,670 tons of gypsum in 1937, and 1,816 tons in 1938. Lungli in Kweichow produces about 50 tons each year. A small amount of gypsum is also produced in Yishan in Kwangsi.

SALTPETER

Most of China's saltpeter is produced in Hopei, Honan, Shansi, whereas Chinghai has a rich reserve of Chile saltpeter. The nation produced 5,000 tons of saltpeter in 1934, including

TABLE XXV.—PHOSPHORUS MINE RESERVE IN YUNNAN (TONS)

LOCALITY	Tonnage
Kunming, Talungtang	1,470,000-2,350,000
Sungming, Shiaokwanching	405,000-1,098,000
Kunyang, Chungyichun	6,833,250-7,106,250
Chengkung, Chichiaoshan	1,965,180-2,441,180
Chengkung, Tungshan	1,556,250
TOTAL	12,229,680-14,551,680

SULPHUR

Sulphur is produced from pyrites, which occur in almost every province, either in coal seams or in association with

1,200 tons in Hopei, 800 tons in Honan, 250 tons in Shansi, 500 tons in Hunan, 500 tons in Kwangtung, 500 tons in Shantung, 500 tons in Kiangsu, 200 tons in Hupeh, and 550 tons from other provinces. In southwest China, saltpeter solution occurs at Pengshan and Meishan in western Szechwan together with underground salt solution. Its production was 4,650,000 piculs in 1938, 19,000,000 piculs in 1939, and 11,100,000 piculs in 1940. The product is used to make soda. The Loshan and Pengshan soda factories produce about 30,000 barrels (120 pounds to one barrel) a year.

PHOSPHORUS

Phosphorus is found in Tunghai in Kiangsu and on Paracel Islands off the Kwangtung coast. It has been discovered recently in Kunming, Sungming, Chengkung, and Chengkiang in Yunnan. Phosphorus content varies from 15.53 to 42 per cent.

the sulphide ores of lead and zinc. Estimated sulphur production in China is put at 5,500 tons a year. The reserve of pyrites in the southwestern provinces is as follows:

TABLE XXVI.—PYRITE RESERVE IN SOUTHERN CHINA (TONS)

PROVINCE	LOCALITY	RESERVE	
		Pyrite Ore.	Pure Sulphur.
Szechwan	Penghsien, Tapaoshan	...	90,107-180,214
	Hsinwen, Wuchiakow	158,000	...
	Hsinwen, Haitzetou	107,100	...
	Kiangan, Meichiaopah	137,000	...
	Kusung, Paihoyeh	52,000	...
	Chihsien	285,000	...
	Chouchiahsiang	50,400	...
	Tungkwangchi	39,600	...
	Loshan, Shawang	120,000	...
	Wuhungchi-Tachun	150,000	...
Sikang	Tienchuan	1,415,725	...
	TOTAL	2,415,725	90,107-180,214

The production of sulphur centers at Chihsien and Hochwan in Szechwan, Sikang, Yunnan, Kwangsi also produce some sulphur. The amount produced may be seen from the following table:

TABLE XXVII.—SULPHUR PRODUCTION IN SOUTHWEST CHINA (TONS)

Province	Locality	Tonnage
Szechwan	Hsinwen	12
	Chihsien	367
	Hochwan	400
	Nanchwan	50
	Kiangan	3
Sikang	Wushan	150
	Tienchwan	10
Yunnan	Hweili	50
		170
Kwangsi		(a)
	TOTAL (Estimated)	1,500

ALUM

Alum is produced in the boundary district of Chekiang and Fukien. Pingyang in southern Chekiang produces about 10,000 tons per year and Futing in Fukien about 2,000 tons. Lukiang in Anhwei also produces about 2,000 tons. The deposits in Lukiang and Pingyang total about 250,000,000 tons, containing about 180,000,000 tons of alum. They would give 10,000,000 tons of elementary aluminum. Besides, a new discovery in central Kweichow is estimated at 44,616,000 tons of alum. Its content is about 70 per cent of elementary aluminum.

GRAPHITE

Graphite is found in several provinces, including Hunan, Hopei, Kiangsu, Honan, Shansi, Shantung, Suiyuan. But the production is by no means large. At Hsiashu, a small town between Nanking and Chinkiang, there is a graphite mine which used to produce 1,500 to 2,000 tons a year.

FLUORSPAR

Fluorspar is mainly produced in the province of Chekiang. It is estimated that the total reserve of fluorspar in this province amounts to about 400,000 tons. The ore mined in Chekiang contains from 60 to 90 per cent of calcium fluoride. The yearly output is from 7,000 to 8,000 tons. A small amount is worked in Shantung.

TALC

Talc was mined in Liaoning for a number of years. In 1933 the production was 60,000 tons. Penglai in Shantung also produces talc to the amount of 1,000 tons a year.

CLAY

Clay is chiefly worked for the pottery or porcelain industry. About 150,000 tons of clay are produced in Kiangsi for the porcelain industry there. Hopei produces 200,000 tons, Shantung 80,000 tons, and Kiangsu 60,000 tons a year for pottery making. Szechwan also produces a considerable amount for local consumption. Kweichow, Sikang, and Yunnan also produce clay for pottery making. Fire clay is produced in Szechwan. The province is producing 200,000 firebricks every month.

ASBESTOS

Asbestos occurs in many localities. Liaoning and Hopei produce asbestos in good quantities. Sikang, Kwangsi, and Yunnan also produce asbestos. The Sikang reserve has fibers half a foot long. It is one of the leading reserves in southwest China.

LIMESTONE

Limestone is mined for the making of lime and cement and is produced in all provinces. But the production is rather scattered. Total national production is estimated at 5,000,000 tons. Of the southwestern provinces, Szechwan produces 150,000 tons, Yunnan 50,000 tons, and Kweichow 30,000 tons a year.

PRECIOUS STONES

Southwest China is famous for its production of precious stones. Emeralds, amber, agates, rubies, sapphires are found in Yunnan. Sikang and Sinkiang are famous for jade production.

CHAPTER XIII

MONEY AND BANKING

China's wartime monetary and banking progress is featured by numerous measures taken by the Chinese Government to strengthen her currency for protracted warfare and for postwar reconstruction.

At the apex of China's banking structure today is the Joint Board of the Four Government Banks (the Central Bank of China, the Bank of China, the Bank of Communications, and the Farmers' Bank of China) which controls all important monetary and banking activities under the direction of the Supreme National Defense Council. Its administrative organ is the Ministry of Finance. Since July, 1942, the Central Bank of China has become more than a state bank, exercising the role of a banker's bank. The other three government banks also specialize in their functions in accordance with government policy.

Throughout all these years, the Japanese and puppet authorities have made repeated attempts to undermine China's currency. The forced circulation of Bank of Japan notes and notes issued by other enemy and puppet banks in occupied areas, the creation of the bogus "Federal Reserve Bank of North China", "Central Reserve Bank," and the circulation of the latter's paper money were followed by a Japanese-inspired puppet order in 1942 prohibiting the use of Chinese legal tender in places under enemy penetration. The Chinese Government has adopted counter-measures which have met with gratifying success. As a result, the Chinese national currency still enjoys unflinching confidence both in Free and occupied China.

PREWAR REFORMS

Currency and exchange control in China began in the spring of 1933 when the tael system, with its varying weight and fineness in different localities, was abolished. According to the *Standard Silver Dollar Coinage Law* promulgated in 1933, the yuan was to have a gross weight of 26.6971 grams of silver 880 fine, that is, containing 23.493448 grams of fine silver. Upon the completion of the Central Mint in Shanghai, with its modern facilities for minting and testing, the

issuance of standard currency of uniform weight and fineness was assured.

The transition to the new silver dollar proceeded smoothly. In order further to help stabilize silver, a silver agreement was signed in 1933 by the Chinese Government with the governments of Australia, Canada, India, Mexico, Peru, Spain, and the United States. Unfortunately, the subsequent enforcement by the United States of the Silver Purchase Act, which had as its main objective the artificial raising of the price of silver, upset the hopes of the Chinese Government for a stabilized silver market. By raising the price of silver, the act had the immediate effect of causing a serious drain of silver from China. With the silver reserves essential to the maintenance of a sound currency system being greatly depleted, there was a severe contraction of currency and credit. Faced with the alarming prospect of a continued leak, the Chinese Government ordered on October 14, 1934, the application of an export duty and equalization charge on exports of silver effective the following day.

Such a measure was not regarded as a fundamental solution of the nation's monetary problem. The currency situation after imposition of these restrictions remained unsatisfactory. Exchange continued to rise. This was due to a number of causes. For instance, changes in the foreign value of silver had so long exercised influence on the value in China that this connection could not be readily broken, and rising value abroad tended to increase value in China, even with these restrictive measures enforced. Furthermore, while exportation through legitimate channels of silver was curbed, there was no effective means of preventing smuggling due to the extensive borders of China and the difficulties arising out of the existence of extraterritoriality and foreign concessions.

When the situation appeared to be most critical, the Government undertook a measure which paved the way for fundamental reform of the currency system. This was the reorganization of the Bank of China and the Bank of

Communications. The Government placed \$15,000,000 in the Bank of China, increasing its capital to \$40,000,000 of which the Government held 50 per cent. Also there was an additional government subscription of \$10,000,000 to the Bank of Communications, its capital being thus raised to \$20,000,000, of which 60 per cent was held by the government. This measure was taken principally to enhance coordination between the Central Bank of China and these two banking institutions, and proved to be of great value to the Government later in dealing with various financial and currency problems.

The Government finally ordered on November 3, 1935, a fundamental change of the currency system in line with world developments and with developments within China. The government decree of that date provided for (1) stabilization of exchange at about the level then existing; (2) unification of note-issue and reserves and making notes of the three government banks full legal tender; (3) nationalization of silver; (4) reorganization of the Central Bank as the Central Reserve Bank on a more independent basis; (5) strengthening the commercial banking system; and (6) balancing the national budget within a period of 18 months.

At the same time, negotiations were completed for the sale of 50,000,000 ounces of silver to the United States Treasury at the then prevailing world price for silver, which was about 65 cents an ounce. The silver was shipped in December, 1935, and in January, 1936. On May 18, 1936, an agreement was reached between the Chinese Government, represented by Mr. K. P. Chen, general manager of the Shanghai Commercial and Savings Bank, and the United States Government, represented by the Secretary of Treasury, Mr. Henry Morgenthau, whereby the United States of America was to purchase from the Chinese Government substantial amounts of silver, said later to amount to 50,000,000 ounces. The purchases of these large amounts of silver by America lent great strength to the Chinese currency system, and public acknowledgment of this token of cooperation was made by the Chinese Finance Minister in the official report of the Ministry (1934-1935).

In July, 1937, upon the second visit to Washington of Dr. H. H. Kung, Chinese Minister of Finance, further arrangement was concluded with the

American authorities for Sino-American monetary cooperation. These arrangements provided:

- (1) Sale of Chinese surplus silver to America,
- (2) Purchase of a substantial amount of gold from America by China with a view to augmenting the Chinese Government's gold reserve,
- (3) Increased credit facilities made available to the Central Bank of China for currency stabilization purposes.

EMERGENCY WAR MEASURES

In the forenoon of August 13, 1937, when the hostilities in Shanghai broke out, all Chinese banks closed, intending to re-open after three days. Meanwhile a moratorium order was issued by the Ministry of Finance, protecting the Chinese banks. As a consequence of the moratorium, a new "blocked" dollar or *wei wah* system was created. The Central Bank of China was the only Chinese bank which did not come under the provisions of the moratorium order. The Chinese banks re-opened on August 17, working only on a restricted basis. The *Emergency Banking Regulations* promulgated when the war began limited the amount of cash withdrawals from current bank accounts and deposits. Later the Ministry of Finance ruled that cash orders on banks and native banks might be stamped *wei wah*, to be transferable between banks on a *wei wah* basis—that is to say, they could not be exchanged for legal tender or for foreign currencies. Though originally intended as a bankers' clearing arrangement, the *wei wah* soon came to be accepted as a medium of exchange for commercial transactions. Foreign banks cooperated magnificently with the Chinese banks in this period of exceptional stress.

The *wei wah* system continued throughout 1938 without particular hardships. Market discount rates on *wei wah* ranged from $\frac{1}{2}$ to $7\frac{1}{2}$ per cent. during the period.

The Central Bank of China announced in July, 1937, that it was prepared to maintain currency levels at its fixed rates of 1s. 2 $\frac{1}{4}$ d and US 29 $\frac{1}{2}$ cents per Chinese dollar. When warfare spread to Shanghai the determination on the part of the authorities to maintain the value of the legal tender dollar was even firmer than ever. From about July 19 to August 13, 1937, the Government banks

were called upon to sell from £7,500,000 to £8,000,000 at the fixed rates. The bulk was for bona fide merchants' requirements, but a part represented flight of capital.

From August 16 onward the situation changed. Owing to the moratorium, a vital source of funds was suddenly cut off. Foreign banks, in order to obtain funds, were forced to sell exchange to the Central Bank at 1s. 2½d. or US 30½ cents per Chinese dollar. The Central Bank obtained roughly about £1,000,000 at these quotations. Until March 13, 1938, the Central Government maintained the dollar at 1s. 2½d., but from that date (which marked the opening of the bogus "Federal Reserve Bank of North China") official rates were only nominally maintained. Meanwhile the open market rates declined to 8 pence per dollar, at which point they were held by the Government through the intermediary of a leading foreign bank.

In July, 1938, announcement was made by the American Secretary of Treasury, Mr. Henry Morgenthau, that the American Treasury's understanding to purchase silver would be extended, and in September of that year he announced its further extension. No official information concerning the actual amount of transactions has been made public, as at the time the agreement was made it was thought advisable to keep this a secret "for fear of speculative activities affecting the world price of gold."

When the Chinese army retired first from the Hopei area, and later from Shanghai and its vicinity, including Nanking, it could not by any chance carry away with it the vast financial structure which China had patiently built up in past years. Legal tender notes continued to circulate in these areas, and the Government saw fit to maintain exchange stability there so long as the demand for exchange was for legitimate purposes and the welfare of the entire nation was not at stake. Unfortunately with the establishment of a bogus government in Peiping, a so-called "Federal Reserve Bank of North China" was organized at the instigation of the Japanese military to issue banknotes in the occupied areas to absorb Chinese legal-tender notes on the market and thus to drive them out of circulation. The puppet notes were not convertible into foreign currency. The Japanese hoped to exchange the Chinese legal tender notes for foreign currency in Shanghai. Thus

it was calculated that the double objective of wrecking Chinese currency in the North and of weakening China's entire reserves could be accomplished at one stroke.

Obviously the only answer to such a threat was close surveillance of transactions in foreign exchange, which the Chinese Government authorized beginning from March 14, 1938. The new measures announced by the Ministry of Finance in this connection were as follows:

- (1) Beginning from March 14 of this year (1938), the sale of foreign exchange shall be handled by the head office of the Central Bank of China at the seat of the Government. However, for the convenience of its clients, the bank may establish an office in Hongkong.
- (2) Banks requiring foreign exchange for legitimate purposes after setting off their receipts against requirements (in foreign exchange) should make application to the head office of the Central Bank of China through its office in Hongkong.
- (3) The Central Bank, after receiving the application, shall immediately consider the same in accordance with the regulations governing the approval of purchases of foreign exchange to the applicant at the official rate. The regulations governing the sale and purchase of foreign exchange shall be fixed separately.

Although after the nationalization of silver in 1935 China's financial structure was immeasurably strengthened and her budget balanced, the strain of hostilities necessitated the adoption of several measures apart from those mentioned. For instance, the Loan and Discount Committees of the Four Government Banks were established in twelve leading cities to facilitate the flow of capital to the hinterland. On April 29, 1938, the Ministry of Finance promulgated regulations for the reform of local finances. On June 1, it was decided that banking institutions in the interior, by holding an adequate amount of cash and security reserves in the Four Government Banks, might apply for certain sums in 1-dollar and subsidiary notes provided the money was to be used for the rehabilitation of rural economy and the encouragement of production.

To promote exports and imports, the Trade Readjustment Commission was instructed to improve the various means of communication so that more and better facilities might be available for the movement of goods. Much was done to perfect the machinery of taxation, the many measures adopted being responsible for the smooth flow of currency, the conservation of the people's economic strength, and the protection of the sources of income.

On June 1, 1938, a conference of Chinese bankers was convened in Hankow under the Ministry of Finance. The conference discussed ways and means of strengthening China's wartime financial structure in general, and of improving local currency conditions in particular. The meeting was attended by more than 80 bankers from all parts of the country.

Prior to the war, due to unsettled conditions in the interior, and to the high interest rates in the rural districts, there had been an exodus of people from the farms to the cities. With the beginning of hostilities the situation was reversed. Dr. H. H. Kung, Minister of Finance, pointed out that "despite the war, the demand for Chinese currency notes in interior provinces has increased and the use of legal tender has spread to even most remote areas. Amounts of remittances have shown considerable increases, especially from threatened areas to Szechwan, Yunnan, Kweichow, Hunan, Kwangsi and Kwangtung, due, of course, to the emigration of a large portion of the population thereto. Noting the development of this situation, this Bankers' Conference has been called to find a means to facilitate development of the rural areas."

The conference also deliberated on other problems of national import. Among the more important decisions were restriction of remittances to areas under the control of the Japanese, and providing facilities for remittances to territory under the control of the Chinese Government. A list of the decisions of the conference follows:

- (1) To encourage export industries and offer facilities for remittances to China from overseas Chinese,
- (2) To continue efforts to collect gold and silver from inland areas,
- (3) To increase the number of local financial organs,

- (4) To encourage frugality and savings,
- (5) To encourage production of daily necessities,
- (6) To increase agricultural loans,
- (7) To continue granting credit loans,
- (8) To train a large financial personnel.

THREE CONFERENCES

The Four Government Banks are charged with assisting the national treasury in financing reconstruction and with developing specialized trades. The commercial banks have aided considerably in promoting the Government's financial and currency policy, in selling government savings certificates and bonds, and in helping to raise relief and aviation funds.

The main interest of the Government is to see that the banks comply with its economic and financial policies. To explain these policies to financial leaders, the Ministry of Finance called two national financial conferences in June, 1938 and March, 1939, respectively. Many resolutions to promote local finance and productive enterprises were adopted at the meetings. It was suggested that provincial banks be given more aid and authority in developing local financial resources and in counteracting enemy economic inroads in occupied and war areas. A system of supervision of certain provincial banks was worked out, and the Ministry was to direct the operation of commercial banks.

The first concrete step was the promulgation, on August 7, 1940, of the *Regulations Governing the Control of Banks During the Period of Emergency*. The regulations require all non-government banks to transfer 20 per cent of their total deposits to the government banks as a reserve fund. All deposits made in banks are to be used only for productive enterprises or joint productive investment. The banks are prohibited from engaging in commercial undertakings, hoarding or in purely pecuniary dealings under any of the assumed names of commerce, trust or service departments.

In June, 1941, the Third National Financial Conference decided that all provincial banks must carry out the financial and monetary policies of the Government. The best way to achieve this, it was decided, would be to reorganize all provincial banks to become

part of the network of the Central Bank of China. The branches and sub-branches of the Central Bank of China, together with the provincial institutions, would make it possible to have at least one modern financial organ in every *hsien* in Free China.

JOINT BOARD

On September 8, 1939, Generalissimo Chiang Kai-shek was officially appointed by the National Government as the Chairman of the Board of Directors of the Joint Board of the Four Government Banks. Dr. H. H. Kung, Governor of the Central Bank of China, Dr. T. V. Soong, Chairman of the Board of Directors of the Bank of China, and Mr. Chien Yung-min, Chairman of the Board of Directors of the Bank of Communications were named Executive Directors in active control of the Board.

The Joint Board is in Chungking with branch and sub-branch offices in other important cities. The four banks are required to submit to the Minister of Finance a daily balance sheet specifying the amount of bank notes in circulation and the rate of interest prevailing in the money market. Within the first ten days of each month they are required to submit a statement showing actual conditions of the banks and their assets and liabilities at the end of the previous month.

In order to ascertain whether the four banks conduct their affairs in consonance with government policy and instructions, the Minister of Finance appointed inspectors to examine the business conditions at the head and branch offices of the four banks with or without previous notice. (The *Revised Organic Law of the Joint Board*, promulgated on September 1, 1942, gave the Joint Board much broader authority in the direction and supervision of the Four Government Banks, the Central Trust of China and the Postal Remittances and Savings Bank.)

At the same time, the National Government promulgated a series of new regulations for the stabilization of currency and finance. These measures contain the following provisions:

1. Inspection of currency reserves: In addition to gold, silver and foreign exchange, new resources may be used to enhance the reserves for legal tender notes, namely, (1) short-term commercial

paper, (2) warehouse commodity receipts, (3) shares of productive enterprises and (4) National Government bonds. But the amount of these eligible securities cannot exceed 40 per cent of the total amount of note reserves.

The Joint Board shall invite representatives from chambers of commerce, leading banks and native banks in important provinces and municipalities to participate in the periodic examination of national currency reserves. Such public inspection of the reserves held against notes issued shall be conducted once a month. The actual conditions of note reserve, giving in detail the total volume of legal tender notes issued, the total amount of cash and security reserves and the ratio of reserves against notes, shall be publicly announced once a month. As hitherto, the Currency Reserve Board shall remain the official institution responsible for the inspection and announcement of the amount of notes issued and the composition of reserves held by the four banks.

2. Examination of public expenditure and curtailment of unnecessary expenses: Budget estimates of various government offices shall be closely scrutinized and all superfluous military and civil organizations shall be abolished with a view to cutting down government expenditure. But administrative expenses, such as salaries of government employees, will not be reduced.

3. Control of foreign exchange and stabilization of exchange rate: In order to exercise effective control of foreign exchange the sale of foreign currencies shall be strictly examined. Foreign exchange shall also be liberally allotted to legitimate business enterprises as a means to stabilize the exchange rate in the open market.

4. Absorption of idle capital and expansion of financial network: All banking institutions are required to make a serious attempt to attract idle capital by encouraging the virtue of thrift and the habit of saving and by utilizing accumulated funds from saving accounts and savings certificates for investment in productive projects. Modern banking practice and financial network shall be extended to the northwestern and southwestern provinces where at least one bank will be established in each *hsien* so as to facilitate the circulation of national currency and promote productive enterprises.

5. Circulation of bank notes in guerilla districts: The Central Bank of China notes issued in 1926 at Hankow or those bearing the names of other places altered privately, which have been declared null and void, shall be no longer valid for circulation. The Bank of China notes, with the exception of those issued in six localities including Hankow and Hunan, and Bank of Communications notes, with the exception of those issued in Manchuria and Jehol, may be circulated without discrimination. The Farmers' Bank of China notes, regardless of the provinces in which they are issued, shall be valid as usual.

Bank notes issued by the Bank of China and the Bank of Communications in Tientsin, Shantung and Hankow may be accepted as before. However, to prevent Japanese and puppet regimes from transporting them to change for foreign exchange, only drafts payable at their place of issue or at Chungking may be given in return when such notes are presented to and accepted by the banks. These notes may also be remitted to the interior for the purchase of native products.

The Joint Board is to finance improvement projects in agriculture, industry, mining and communication systems for the purpose of securing an adequate supply of essential materials and stabilizing commodity prices. In some cases, it is in the form of direct investment and management by the Government, while in others it extends assistance to private enterprises. The Joint Board has paid special attention to the extension of rural loans. One of its most important duties is to spread a financial network all over the country. Other wartime duties include:

- (1) Adjustment of the note issue among the four banks,
- (2) Centralization and utilization of capital funds,
- (3) Inspection of note reserves of the four banks,
- (4) Issuance of subsidiary notes,
- (5) Joint extension of loans and discounts,
- (6) Approval of remittances to and from interior and coastal cities,
- (7) Approval of applications for foreign exchange by importers,
- (8) Joint investment in special wartime productive enterprises,
- (9) Adjustment of material resources in wartime,

- (10) Collection and exchange of gold and silver,
- (11) Promotion of special savings and deposits,
- (12) Directing of other joint activities of the four banks,
- (13) Auditing of budgetary estimates, as well as actual settlement of receipts and disbursements of the four banks.

CONTROL MEASURES

In October, 1939, the Ministry of Finance, in order to eliminate profiteering in dealing with gold bars and gold ornaments, ordered the commercial banks to cease accepting mortgages on or trading in precious metals. Free trading of gold by financial institutions was prohibited, and all previous mortgages on precious metals were to be handed over to the Four Government Banks for settlement. All banks were authorized to act as government agents to collect gold from the public at fixed official rates.

For enforcing better exchange control in Free China, the Chinese Government on November 16, 1941, in collaboration with the British and the United States governments, announced that proceeds realized from exports from China should be delivered to one of several designated banks. Likewise, imports from Chinese ports were ordered to be controlled from points of destination. All transactions through approved accounts were to be based on the rates of 3 $\frac{3}{8}$ pence for the Chinese dollar and of 5 $\frac{1}{4}$ US dollars for every 100 Chinese dollars. Private and commercial banks were prohibited from dealing in foreign exchange unless authorized by the Ministry of Finance through the Chinese Currency Stabilization Board.

On December 9, 1941, the Government took a firmer grip on private banking in the interior by revising the regulations governing the control of banks in the period of emergency, originally promulgated on August 7, 1940. The revised regulations state that, with the exception of *hsien* banks and banks to be operated by overseas capital, no new banks shall be established in the interior except with special approval. All existing banks shall first secure the approval of the Ministry of Finance before opening new branches or sub-branches.

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part of the network of the Central Bank of China. The branches and sub-branches of the Central Bank of China, together with the provincial institutions, would make it possible to have at least one modern financial organ in every *hsien* in Free China.

JOINT BOARD

On September 8, 1939, Generalissimo Chiang Kai-shek was officially appointed by the National Government as the Chairman of the Board of Directors of the Joint Board of the Four Government Banks. Dr. H. H. Kung, Governor of the Central Bank of China, Dr. T. V. Soong, Chairman of the Board of Directors of the Bank of China, and Mr. Chien Yung-min, Chairman of the Board of Directors of the Bank of Communications were named Executive Directors in active control of the Board.

The Joint Board is in Chungking with branch and sub-branch offices in other important cities. The four banks are required to submit to the Minister of Finance a daily balance sheet specifying the amount of bank notes in circulation and the rate of interest prevailing in the money market. Within the first ten days of each month they are required to submit a statement showing actual conditions of the banks and their assets and liabilities at the end of the previous month.

In order to ascertain whether the four banks conduct their affairs in consonance with government policy and instructions, the Minister of Finance appointed inspectors to examine the business conditions at the head and branch offices of the four banks with or without previous notice. (The *Revised Organic Law of the Joint Board*, promulgated on September 1, 1942, gave the Joint Board much broader authority in the direction and supervision of the Four Government Banks, the Central Trust of China and the Postal Remittances and Savings Bank.)

At the same time, the National Government promulgated a series of new regulations for the stabilization of currency and finance. These measures contain the following provisions:

1. Inspection of currency reserves: In addition to gold, silver and foreign exchange, new resources may be used to enhance the reserves for legal tender notes, namely, (1) short-term commercial

paper, (2) warehouse commodity receipts, (3) shares of productive enterprises and (4) National Government bonds. But the amount of these eligible securities cannot exceed 40 per cent of the total amount of note reserves.

The Joint Board shall invite representatives from chambers of commerce, leading banks and native banks in important provinces and municipalities to participate in the periodic examination of national currency reserves. Such public inspection of the reserves held against notes issued shall be conducted once a month. The actual conditions of note reserve, giving in detail the total volume of legal tender notes issued, the total amount of cash and security reserves and the ratio of reserves against notes, shall be publicly announced once a month. As hitherto, the Currency Reserve Board shall remain the official institution responsible for the inspection and announcement of the amount of notes issued and the composition of reserves held by the four banks.

2. Examination of public expenditure and curtailment of unnecessary expenses: Budget estimates of various government offices shall be closely scrutinized and all superfluous military and civil organizations shall be abolished with a view to cutting down government expenditure. But administrative expenses, such as salaries of government employees, will not be reduced.

3. Control of foreign exchange and stabilization of exchange rate: In order to exercise effective control of foreign exchange the sale of foreign currencies shall be strictly examined. Foreign exchange shall also be liberally allotted to legitimate business enterprises as a means to stabilize the exchange rate in the open market.

4. Absorption of idle capital and expansion of financial network: All banking institutions are required to make a serious attempt to attract idle capital by encouraging the virtue of thrift and the habit of saving and by utilizing accumulated funds from saving accounts and savings certificates for investment in productive projects. Modern banking practice and financial network shall be extended to the northwestern and southwestern provinces where at least one bank will be established in each *hsien* so as to facilitate the circulation of national currency and promote productive enterprises.

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The rules contain explicit instructions to the banks about the granting of credits.

In taking mortgages, the banks cannot deal with those not engaged in trade or those who are not members of trade guilds. The maximum term for a loan should not be over three months and the amount should not exceed five per cent of the total credits granted by the bank in question. When the term expires, the bank shall ask for the redemption of the mortgage in case the security consists of daily necessities. In the case of non-daily necessities, a renewal may be allowed by the bank when the mortgage expires.

The revised rules further prohibit banks from engaging in profiteering and hoarding of any kind. No credit is to be granted without adequate security. Banks cannot sell or buy foreign exchange without special permission from the Ministry of Finance. The Ministry, the Joint Board of the Four Government Banks and the local governments are to conduct periodical inspections of the books of all banks.

Special banking inspection officers were appointed on a national scale while the accounting system of the banks was standardized. Limitations were imposed on the division of bank profits. Any surplus should go into the sinking fund of the bank. The Ministry, on May 1, 1942, prohibited the practice of paying premiums on government bank notes of smaller denominations. Bank notes of all issues and of all denominations issued by the Four Government Banks—now centralized in the Central Bank of China—were to be accepted at par value.

Meanwhile, the practice of paying special premium rates on monthly deposits by Szechwan native banks was to be abolished as from January 1, 1943. The system was deemed incompatible with the Government's wartime financial policy in that it would tend to encourage profiteering and hoarding by the banks entrusted with big deposits. Interest rates on fixed and current deposits have been increased by both government and private banks in the last few years. Starting from July 1, 1942, all banks have increased their interest rates on savings. This helps the Government to absorb surplus capital from the people for constructive purposes.

Early in 1942, the Four Government Banks ordered the suspension of their branches in the Japanese-occupied cities of Shanghai, Tientsin, Canton (Kowloon) and Kulangsu (Amoy). The Peiping and Hankow branches were suspended

following the Japanese occupation of those cities in 1937 and 1938.

FUNCTIONAL SPECIALIZATION

The government banks have assumed a new role since July 1, 1942, when they were called upon to perform functional specialization. Under the new ruling, the right to issue bank notes is centralized in the Central Bank of China. The Bank of China is to deal exclusively in foreign exchange and in the promotion of foreign trade. It is also authorized to finance all productive enterprises having a bearing on foreign trade. The Bank of Communications is entrusted with fostering China's industrial and economic reconstruction projects. The Farmers' Bank of China will have the exclusive right of extending farm loans and of developing rural finance. The Postal Remittances and Savings Bank is to be mainly a savings bank under the new arrangement. The capital of the Bank of China, the Bank of Communications and the Farmers' Bank of China has been increased to \$60,000,000 each by a government decree.

Prior to the outbreak of the war, private banking institutions had found themselves too weak to compete with foreign banks. The development of a modern banking system thus became one of the most significant phases of China's struggle for economic autonomy.

In 1928, when the National Government was established at Nanking, the Central Bank of China was established as the government bank. At the same time the Bank of China was reorganized into an international exchange bank, while the mission of developing industries was entrusted to the Bank of Communications. The reorganization was necessary because the new National Government was anxious to unify the national currency system and to strengthen the national banking structure. Both the Bank of China and the Bank of Communications were government banks. The intention of the National Government was "to utilize temporarily the combined strength of these three banks to perform the functions of a central bank until the Central Bank becomes strong enough to bear the entire responsibility." In 1935, another special chartered bank was founded through the amalgamation of the Honan-Hupeh-Anhwei-Kiangsi Four-Province Farmers' Banks into the Farmers' Bank of China, for the specific purpose of assisting the rehabilitation of rural economy.

In the years immediately preceding the outbreak of the war in July, 1937, development of the Chinese banking system showed unmistakable signs of increasing government participation in and supervision over the special chartered banks as well as commercial banks. During the first two months of 1935, when the economic situation in China was most critical as a result of the world economic depression, wholesale financial collapse was avoided by the action of the National Government in effecting timely measures of relief with the cooperation of banks, especially the government banks. By June, 1937, a plan for the reorganization of the Central Bank into a Central Reserve Bank had already been adopted. The execution of the plan, however, was disrupted by the outbreak of the war a month later.

Although the Government controls banking operations in interior China, it has, however, not hampered their development. Of the 164 banks in prewar China, 90 were located in Kiangsu and Chekiang provinces. Shanghai alone housed 48 or roughly one-third of the total. Experts estimate losses to Chinese banking as a result of the war along the China coast (not including Hongkong) at \$60,000,000. In 1938, cash on hand in Chinese banks was given at \$114,322,000, while savings deposits totalled \$302,873,000. Total credits outstanding at the end of 1938 were \$157,160,000. These 164 banks had an aggregate paid-up capital of \$400,000,000 and a sinking fund of \$78,720,000. Their total savings deposits amounted to \$3,780,000,000. Of the totals, 40 per cent of the paid-up capital, 20 per cent of the sinking fund and 50 per cent of the savings deposits belonged to the Central Bank of China, the Bank of China and the Bank of Communications.

THE CENTRAL BANK OF CHINA

The Central Bank of China was first founded at Canton in 1924. The bank helped to finance the Northern Expedition. Afterwards it was given the legal status of a state institution through a new charter granted in October, 1928. The bank was officially inaugurated in Shanghai in November, 1928, with a capital of \$20,000,000. On account of its rapid business expansion the capital was augmented to \$100,000,000 in May, 1934.

Following the currency reform of November, 1935, the position of the

Central Bank became even more important as a "bankers' bank." In January, 1936, through the revision of the seventh article of the bank's charter, the amount of private shares was increased from 40 per cent to 60 per cent, providing an opportunity for commercial banking houses, modern or native, provincial and municipal governments, as well as private individuals to become shareholders. The purpose of such a change was to make the bank more of an independent financial institution and a bank of banks. The essential features of the Central Reserve Bank proposed in 1937 may be summarized as follows:

- (a) To centralize the power of bank note issue;
- (b) To hold the legal reserves of member banks;
- (c) To facilitate the circulation of capital through the establishment of a re-discount committee;
- (d) To provide private shares for provincial and municipal governments, banking houses and private individuals; and
- (e) To establish local advisory committees in important cities and towns to gather information on monetary matters.

The Central Bank has successfully weathered the violent storms of war. The bank's head office was first moved to Nanking, then to Hankow, and since August, 1938, it has been in Chungking.

The introduction of the new public treasury system in January, 1940, further strengthened the position of the Central Bank as the chief agent of the National Government in dealing with public funds, functioning like a savings bank for all government institutions.

Four characteristics mark the operations of the bank during wartime, according to a report of the Central Bank's Banking Department. First, the Central Bank leads the work of the Joint Loan and Discount Committee of the Four Banks, more than one-third of the total loans extended by the committee being contributed by the Central Bank. In cooperation with the three other government banks, it finances the storage of food supplies, activities relating to price stabilization, and new enterprises

of economic reconstruction. During 1939, the bank was especially active in extending loans to needy industrialists and agriculturists at low rates of interest. Second, various measures have been taken by the bank to regulate and facilitate domestic exchange, encouraging idle capital from the coast to flow into the interior. Furthermore, banking facilities were made available to the fighting forces at the front, to facilitate the distribution of military payrolls and other economic activities of the war. Third, the bank accelerated the work of collecting gold and silver for the National Government. Finally, the bank directs the wartime control of foreign exchange.

Centralization of the right to issue bank notes, expansion of the public treasury system and inauguration of a clearing system among banks constituted the main activities of the Central Bank of China in 1942.

After July 1, 1942, when the Government promulgated regulations governing the centralization of note-issue, only the Central Bank of China can issue bank notes in the country. Bank notes issued by the other three government banks before that date continue to circulate, while those printed but not yet issued by July 1, 1942, were to be handed over to the Central Bank. The three banks were also required to turn over their note reserves to the Central Bank. Similar arrangements were made with provincial banks. In addition to its printing plants in Chungking, Kunming, Kweilin and Paoki, fourteen other transit centers were established to help supply bank notes throughout China.

The loss to the Central Bank of China as a result of the Pacific War is only moderate, because of the efficient way in which the staffs of its Hongkong and Shanghai branches met the situation. Most of the staff members of these two branches have since safely arrived in Chungking and Kunming to resume their work. Bank notes printed abroad have been re-routed to the interior. Hence, no shortage of bank notes has been experienced in these trying months.

In 1942, the Central Bank also successfully played the role of agent for the National Treasury. Besides accepting receipts and making payments on behalf of the National Treasury, the

bank handles government bonds, contributions and public property for the Government.

Beginning from the latter half of 1942, the bank relegated the ordinary business of granting loans to industrial and mining enterprises, communication projects and public utilities to other government and private banks. However, the Central Bank continues to undertake re-discount and re-mortgage activities.

An important activity of the bank in 1942 was the centralization of reserves guaranteeing savings deposits in provincial and private banks. According to the regulations governing the control of banks in the period of emergency promulgated in August, 1940, all banks are required to deposit a certain percentage of their savings deposits in government banks. In order to simplify the procedure, the Ministry of Finance in June, 1942, ordered that such reserves be deposited only in the Central Bank. In places where the Central Bank maintains no branch offices, it may authorize other government banks to accept the reserves, which must be turned over to the Central Bank for safekeeping.

Another achievement of the Central Bank in 1942 was to facilitate domestic remittances. Before the Pacific War broke out, the bank, in order to prevent money from flowing out of Free China, imposed restrictions on remitting money to port cities. Such restrictions were removed early in 1942 as the outbreak of the Pacific War has shifted China's foreign exchange market from Hongkong and Shanghai to the interior, thereby decreasing the danger of her legal tender being drained away. The Central Bank adjusts the domestic remittance fees from time to time and prohibits private banks from making exorbitant black market charges.

THE BANK OF CHINA

The Bank of China is a successor to the Ta Ching Bank of the Manchu dynasty. Following the establishment of the Republic of China in 1912, the Ta Ching Bank was reorganized into the Bank of China.

The new bank established its head office in Peiping and was also granted the special privilege of issuing notes and of acting as fiscal agent of the National Treasury.

The regulations of the bank were revised in 1917, stipulating that besides government capital, shares to the amount of \$10,000,000 should be open to private subscription. In 1921 not only were the private shares increased, but government capital was gradually converted into private shares, the paid-up capital amounting to a total of over \$19,000,000. The head office of the bank was moved to Shanghai in 1927, devoting itself to the financing of China's foreign trade. Government capital to the amount of \$5,000,000 was added which, together with the private shares, made a total of \$25,000,000. In March, 1935, the Ministry of Finance effected a further revision of the regulations of the bank by increasing the Government's share in its capital from \$5,000,000 to \$20,000,000, which increased the total capitalization to \$40,000,000, equally divided between the Government and private subscribers. In July, 1942, the capital was further increased to \$60,000,000. The number of directors was increased from 15 to 21, while the number of supervisors was augmented from five to seven. Dr. T. V. Soong was appointed chairman of the board of directors of the bank. In accordance with the *Savings Bank Law*, the bank established in June, 1935, a savings department, with a separate capital of \$5,000,000.

As a result of the monetary reform of November, 1935, which provided regulations for making the notes of the Central Bank of China, the Bank of China and the Bank of Communications sole legal tender, the note issue of the bank increased by leaps and bounds, indicating the important position the bank occupies in the financial structure of China. The Bank of China, along with the Central Bank of China and the Bank of Communications, had also been charged with the duty of stabilizing foreign exchange and regulating the money market before the order for functional specialization was put into effect on July 1, 1942.

THE BANK OF COMMUNICATIONS

The Manchu regime established the Bank of Communications in 1907 on a partnership basis. The total capitalization was fixed at 10,000,000 Kuping taels, only half of which was to be paid up at first. Besides handling general banking transactions, the Bank of Communications was authorized to act as an agent for the collection of government revenue

from railways, telegraphs, posts and navigation. It was also given the right of note issue. The head office of the bank was established in Peiping. In 1914 the President of the Republic of China promulgated regulations providing that, in addition to general banking business, the Bank of Communications should be given the right to keep in custody special funds of the National Treasury, to act as an agent for the flotation of Government bonds, and to issue bank notes.

In 1928, the National Government promulgated revised regulations designating the bank as an industrial bank to finance all kinds of industries. The business franchise was fixed at 30 years. In 1930, savings and trust departments were established, each operating under separate accounts.

In April, 1935, the Ministry of Finance again revised the regulations concerning the bank and increased the government capital. The total capitalization, fixed at \$20,000,000, was divided into 200,000 shares, of which government capital was represented by 120,000 shares and private capital by 80,000 shares. The monetary reform of November 3, 1935, made the notes of the Bank of Communications, together with those of the Central Bank of China and the Bank of China, sole legal tender and jointly charged these three banks with the nationalization of silver, redemption of notes of other commercial and provincial banks, and stabilization of foreign exchange.

After the war broke out in 1937, the bank's head office was first moved to Hankow and then to Chungking. It participates in the work of the Joint Loan and Discount Committee as well as the Joint Board of Four Government Banks, assisting the National Government in every way to stabilize currency and develop the vast interior.

The most important part the Bank of Communications has played and is playing is the financing of railway construction in wartime. According to a recent report, the bank has thus far helped to finance the building of seven railways and highways in China. These lines, including the Hunan-Kwangsi, Szechwan-Kweichow, Canton-Hankow, Szechwan-Hunan, and Kweichow-Kwangsi railways, and the Yunnan-Burma road and another highway in

Kwangsi province, have either been completed or are under construction. In several cases, loans were granted jointly with other government banks. The loan extended to the Canton-Hankow railway was to expedite the rescue work on the line due to repeated Japanese bombings.

The bank has either directly invested in or extended credits to economic enterprises in the Southwest and Northwest. At least 30 big units including the China Industrial Corporation, the Kweichow Development Corporation, the Szechwan Silk Corporation, the Chungking Electric Company, the Chungking Waterworks, the Ming Sung Industrial Company, the Szechwan Cement Works, the West China Industrial Corporation and several cotton mills have been given aid by the bank. In addition to these large industrial concerns, the bank gives smaller loans to small productive undertakings.

The various heavy industries run by the National Resources Commission of the Ministry of Economic Affairs are operated largely with money from the bank. With the functional specialization from July 1, 1942, the financing of these industries is undertaken entirely by the Bank of Communications. The capital of the bank has been increased to \$60,000,000.

In the last few years, the bank has also extended many loans to rural communities with other government banks. Rural financing, since July last, has been turned over to the Farmers' Bank of China in accordance with the Government's plan. Other activities of the bank include assisting the Government in revitalizing rural economy, in promoting the sales of government bonds and in encouraging savings among the people. Special savings schemes designed to increase industrial and mining production have been instituted. The bank at present maintains 106 branches and sub-branches in fourteen interior provinces of China.

THE FARMERS' BANK OF CHINA

The Farmers' Bank of China is entrusted with the special task of assisting rural reconstruction. In June, 1935, its capital was augmented to \$10,000,000, and since January, 1936, its bank notes have been made acceptable as legal tender by government order.

The Farmers' Bank of China has been an energetic leader in rural reconstruction, including the promotion of agriculture and handicrafts. In order to alleviate the hardships of rural economic life and to meet the urgent needs of stringent peasants and laborers, loans at low interest rates were granted to pawnshops all over the country. In extending loans to needy farmers, the bank usually has to organize cooperatives for the rural population first. The Farmers' Bank of China is solely charged with the work of granting rural credits following the decision made by the Central Government that the Four Government Banks should specialize in their undertakings. It has been extending the largest amount of rural loans during the last three years.

The capital of the Farmers' Bank was increased to \$20,000,000 in the autumn of 1941 and was again raised to \$60,000,000 in the fall of 1942. It has Dr. H. H. Kung as chairman of the board of directors and Y. C. Koo, acting vice-minister of finance, as general manager. Scattered throughout Free China are 180 branches and sub-branches which are assisted by 350 *hsien* and municipality cooperative banks. Its business scope extends to twenty provinces in Free China and war areas which include 1,015 *hsien* and municipalities. At the end of 1942, the bank had a staff of more than 5,000.

With the enforcement of functional specialization of the government banks since July 1, 1942, the Farmers' Bank has been entrusted solely with rural financing activities, while the right of issuing notes was transferred to the Central Bank of China. Some of the more important types of rural credits extended by the bank include production credit, marketing credit, insecticide, farm credit for extension work, credit for rural industries, irrigation credit, credit for the war zone, credit for colonization, and credit for recaptured districts.

The bank also assists the Government in carrying out its land policy. Efforts are made to help the peasants to possess their own farms and to foster the development of independent farming through the extension of loans. The bank further undertakes to issue land bonds. The total amount to be issued in 1943 is set at \$100,000,000. Other activities of the bank to promote welfare of the rural populace are farmers' and laborers' welfare savings.

THE POSTAL REMITTANCES AND SAVINGS BANK

Although a postal savings bank had been in operation since 1919, the Directorate-General of Postal Remittances and Savings Bank was not inaugurated until 1939. The Postal Remittances and Savings Banks commenced to exercise full control of postal remittances and savings on July 1, 1930. Up to 1937, postal deposits totalled a little over \$60,000,000. The amount dropped to \$40,000,000 after the hostilities extended to Shanghai in August, 1937. Through promotion in the interior provinces, the total was increased to \$73,000,000 at the end of 1939, including \$2,000,000 worth of thrift savings certificates. The savings part underwent wider expansion in 1940 when different types of savings accounts were instituted. The total savings at the end of that year exceeded \$100,000,000 and were boosted to more than \$240,000,000 at the conclusion of 1941. A further increase of more than \$80,000,000 was recorded in the first six months of 1942, thereby bringing the total to \$330,000,000 in June, 1942.

The bank's sale of thrift savings certificates also registered new highs in these years. Subtracting the amount of certificates redeemed after expiration, the balance at the end of 1940 was \$34,000,000. It was increased to \$120,000,000 at the end of 1941 and to \$130,000,000 in June, 1942.

Postal remittances in China began more than forty years ago. In the early years of inauguration, the service was restricted to big commercial ports only, with the yearly average amounting to five to six million dollars. International postal remittances were started in 1919 and overseas remittances in 1938. In 1939, total remittances handled by the Postal Remittances and Savings Bank amounted to \$340,000,000. This figure was increased to \$600,000,000 in 1940 and to \$1,000,000,000 in 1941. More than \$600,000,000 was remitted through the bank in the first six months of 1942. The Postal Remittances and Savings Bank has 17,000 offices or agents in China for handling remittances.

Overseas remittances handled by the bank totalled \$50,000,000 in 1939, \$120,000,000 in 1940 and \$170,000,000 in 1941. Since the outbreak of the Pacific War, remittance activities in the South Seas islands have been suspended. The bank acted as agent for the New York

office of the Bank of China in handling \$12,000,000 in remittances in the first six months of 1942.

The bank began writing life insurance policies in Shanghai, Nanking and Hankow in 1935. The maximum amount of the policy was limited to \$500. Although the service was later extended to all postal districts, little development was witnessed because of the small size of the policy. The amount of each policy was increased to \$5,000 in 1942 and 60,000 policies had been written by the end of June, 1942.

PROVINCIAL BANKS

In 1942, China had 24 provincial banks with an aggregate capital of \$34,000,000, constituting a major link in the country's financial system. Since the war broke out in 1937, some of these banks have moved their head offices and branches to safer places, while others have closed down 103 branch offices due to continued hostilities. Seriously affected were the Kiangsu Bank, the Farmers' Bank of Kiangsu, the Min Sen Bank of Shantung, the Shansi Provincial Bank and the Hopei Provincial Bank.

The provincial banks are carrying on, however, more industriously than ever, with the assistance of the Ministry of Finance. Up to late 1942, 587 new branches of these banks had been opened to meet the increasing war needs. The Szechwan Provincial Bank has set up branch offices in nearly every *hsien* in the province. The Kiangsu Bank has re-established itself with help from the Ministry of Finance, while the Kwangtung Provincial Bank, after having removed to the northern part of the province from Canton, has been handling even more business than in prewar days.

The Sikang, Kweichow and Kansu provincial banks were not established until after the outbreak of the war. Three local banks have been amalgamated with other banks, namely, the Farmers' Bank of Kwangsi with the Kwangsi Provincial Bank, and the Kwangtung Silk Bank and the Kwangtung Industrial Bank with the Kwangtung Provincial Bank. Local banks are yet to be established in Mongolia, Tibet and other provinces. Of the provincial banks, those in Kwangtung, Hunan and Szechwan provinces are the largest, while those in Szechwan and Chekiang have opened more branch offices.

The Szechwan Provincial Bank was reorganized from the former Szechwan

Local Bank in 1935 when most of the native banks and financial agencies collapsed as a result of thorough inspection and strict registration on the part of the Government. In 1940, Generalissimo Chiang Kai-shek ordered further reorganization by increasing the bank's capital to \$20,000,000, of which \$9,000,000 came as an appropriation from the Ministry of Finance. The capital has now been increased to \$40,000,000. Since 1938, the Provincial Bank of Szechwan has been acting as the treasury of the provincial government. It has 92 branches, a few of them being outside the province.

Aside from ordinary banking business the Szechwan Provincial Bank's main wartime task is to extend industrial and rural loans and to assist the Government in its economic development measures, such as the purchase of foodstuffs, tung oil, bristles and silk for export.

The Szechwan Cooperative Bank is responsible for the development of the province's cooperative enterprises. Szechwan now has 24,191 cooperatives with a membership of 1,503,157 persons. Outstanding agricultural loans extended by the Provincial Cooperative Bank and national financial agencies totalled \$122,009,946 at the end of June, 1942.

Features of the provincial banks different from ordinary banks include emphasis on the development of provincial agriculture, mining and industry, exploitation of special provincial products, promotion of local public enterprises, issuance of subsidiary notes for local circulation, and the readjustment of local finance.

Loans are given to provincial governments, business, industrial and mining organizations and farmers, to help reconstruction and to rehabilitate areas where fighting had taken place. The Hunan Provincial Bank, for instance, is paying greatest attention to the construction of storehouses for the accumulation of more foodstuffs, the granting of mortgages and small loans to industrial and business concerns, the making of long-term industrial and mining loans and the stimulating of the production of more tea, tung oil, and salt. The Chekiang Provincial Bank has set up more than 100 special offices for extending rural credits alone.

In Suiyuan the local bank has helped a great deal in revitalizing the textile industry following the disruption of the

Peiping-Suiyuan railway, which formerly carried to Tientsin Suiyuan's cotton and wool supplies. The Chekiang Provincial Bank has an enterprise department to handle its investments.

These provincial financial institutions are essential for carrying out many special wartime measures, such as the sale of war bonds, the rescue of materials from war areas and the purchase of gold and silver from the people. The Hupeh Provincial Bank, with the cooperation of the Joint Board of the Four Government Banks, has been buying almost all the gold produced in the Han river valley. The Suiyuan Provincial Bank bought more than 400,000 cattiees of wool for the provincial government in 1941.

Following the conclusion of the Third National Financial Conference in June, 1941, provincial banks became agents of the National Treasury in their respective provinces, as the nation's finance has been demarcated into two main systems of central and *hsien* finances with the province attached to the central system. Before the conference, provincial banks acted as provincial treasuries.

For local circulation, provincial banks are allowed to issue notes in small denominations. Places close to the front use more provincial notes in order to keep national notes from falling into enemy hands. The Honan Agricultural and Industrial Bank, for instance, has issued over \$7,000,000 worth of one-dollar and smaller notes and is issuing more. The Hunan Provincial Bank has received instructions from the Ministry of Finance to issue \$40,000,000 worth of provincial notes.

Provincial banks are supervising and directing *hsien* and other local banks, which are being organized in many Free China provinces. Szechwan has now 25 *hsien* banks. Kwangtung, Shensi and Honan have established some and are establishing more. Other provinces are following suit.

Hsien BANKS

An important but yet little developed phase of China's banking is the *hsien* banks. While a uniform development was still lacking at the end of 1942, *hsien* banks are destined to play a greater role in the future in consonance with

the Government's New *Hsien* System and the independence of local finance.

The pioneers of modern *hsien* banks in China were the pawnshops and cash shops that prevailed in the Manchu dynasty. These shops were commissioned by subordinate Imperial authorities to receive cash deposits from the people and to lend money to the needy. They also assisted in the custody of public funds. The first *hsien* banks were established in 1915. Because of the lack of an organized development and shortage of trained personnel, many *hsien* banks were forced to liquidate, while others failed in the intermitting years up to the outbreak of the war. Up to the first half of 1937, *hsien* banks known to be in operation numbered 28, of which 13 were in Chekiang province.

The Government's efforts to readjust finance and to foster farm cooperative enterprises during the war have helped to develop *hsien* banks. The law governing the establishment of *hsien* banks was promulgated by the National Government on January 20, 1940. A month later, the Ministry of Finance ordered the provincial governments to assist the *hsien* governments in spreading the program. On December 6, 1940, the Ministry further announced a model *hsien* bank constitution for the reference of *hsien* governments. Since the promulgation of the *Hsien Bank Law*, Szechwan, Honan and Shensi have made the biggest development in *hsien* banking.

At the end of May, 1942, *hsien* banks registered with the Ministry of Finance numbered 28. In addition, 51 *hsien* banks were operating without previous registration with the Ministry. Eighty others were being established. Of the total, 65 (including the ones being established) were in Szechwan, 40 in Shensi and 19 in Honan.

INSURANCE

Insurance in China has great possibilities because of the vast reconstruction program after the war. More rigid state control and supervision of insurance will probably be enforced as time goes on.

The Chinese Government established a life insurance promotion committee in June, 1941. Its aim is to help relieve the burden of the people's livelihood and to absorb surplus money from the public. Many government offices have written group insurance for their staff, while a commercial bank is offering life insurance facilities to the workers.

Soon after the war started, the Chinese Government began the writing of war insurance on transportation risks. At that time, the Government tried fervently to remove the industrial establishments from the coast to the safer interior. It was one of the most effective ways to encourage production and to promote reconstruction in the rear. The Ministry of Finance was ordered to write insurance against all land transportation risks. The Ministry, in turn, entrusted this important task to the Central Trust, a subsidiary organ with a capital of \$20,000,000. This government step immediately won popularity among all producers and shipping concerns. During the five years since the inception of the system late in 1937, although payments on losses were equal to the premiums collected, the service on the whole has worked out successfully.

Since November, 1939, the Central Trust has also been writing land war insurance which also includes air-raid risks for all investors and producers in Free China. The scope of land war insurance embraces: (1) stored commodities (limited to agricultural, industrial and mining products and goods having a value in foreign trade), (2) productive instruments and raw materials (limited to those in the possession of the underwritten factories), (3) building materials (limited to those in warehouses or in the possession of the contractors and engineers during construction).

In May, 1942, the Central Trust reduced its land war insurance rates by 25 per cent. The new premium rate is 30 cents for \$100. The period of the policy has also been extended, with further reductions for three-month, six-month and one-year policies. In June, 1941, the Central Trust was given another \$10,000,000 to write life insurance, and the maximum amount allowed for each policy was raised from \$5,000 to \$10,000. The Central Trust has also started production insurance, while risks on animals have been written by the Farmers' Bank of China.

Insurance is a comparatively new business in China. The modern insurance system was introduced only after China had opened its doors to foreign trade in the middle of the 19th century. British companies, both in life and property insurance, were the pioneers in this field. By June, 1937, the number of property insurance companies in

China totalled 181, of which 156 were foreign companies. Of the 19 life insurance firms, 10 represented foreign interests. Life insurance had a very belated development in China. It was started hardly 40 years ago. The aggregate amount of life insurance of all 19 companies up to 1937 came to \$200,000,000, about one-third of which was with the Chinese companies. Before the war started, insurance funds were mainly invested in real estate and in stocks and bonds. During the war, the money is invested largely in business, in extending credits and in transportation projects. There were two sets of laws governing insurance, the *Insurance Law* and the *Insurance Business Law*, at the outbreak of the war in July, 1937.

The *Insurance Law* was first enacted and promulgated in December, 1929, and was revised in January, 1937.

The *Insurance Business Law* was enacted in June, 1935. It has important bearing on both Chinese and foreign insurance companies operating in China, as may be seen from the following salient points of the Law:

(1) *State Supervision.* Article 3 requires an insurance company to register with the Ministry of Industry (now Ministry of Economic Affairs) and to deposit with the Government an amount equivalent to 15 per cent of its paid-up capital. Requirements in connection with the submission of annual business reports, the application and investment of funds, the auditing of accounts and the establishment of a supervisory organ are provided in the Law.

(2) *Limitation of Sino-Foreign Joint Enterprises.* Insurance firms of Sino-foreign capital are allowed to undertake property insurance only. The shareholders of a life-insurance company must be all Chinese, and mutual benefit societies organized for mutual protection must be composed entirely of Chinese members. The main purpose of these stipulations is to place the control over the reserves of these classes of insurance companies, which are necessarily large, in the hands of Chinese nationals.

(3) *Companies in Foreign Countries.* Insurance companies organized with Chinese capital but registered in foreign countries or in territories under foreign control, are not to be regarded as Chinese concerns.

(4) *Insurance Only.* Insurance companies are not allowed to undertake any other kinds of business.

(5) *Limitations on Foreign Insurance Firms.* Article 20 reads: "A foreign insurance company shall confine its operations to the commercial treaty ports. It may not commission Chinese nationals to act as its agents in the interior of

the country to engage in or introduce insurance operations."

(6) *Capital Deposits.* Chinese insurance companies at the time of establishment and foreign firms at the time of establishing branch offices or of appointing insurance agents within the territory of China are required to make a deposit with the National Treasury to the equivalent of 15 per cent of their paid-up capital or capital fund in the case of foreign concerns. In case the paid-up capital or capital fund exceeds \$500,000, an additional deposit equivalent to 5 per cent of the surplus amount is to be made up to the maximum deposit of \$200,000.

(7) *Form of Organization.* The form of organization of an insurance concern is confined to only two types, namely, stock company or mutual benefit society. An insurance company must have a capital of not less than \$200,000.

The *Simple Life Insurance Law* or *Industrial Insurance Law*, which was patterned after the industrial insurance legislation of Japan, was promulgated in May, 1935. The chief characteristics of this form of life insurance may be enumerated as follows:

(1) It is operated by the State. The Postal Remittances and Savings Bank of the Ministry of Communications is entrusted with its management.

(2) As the name implies, industrial insurance is a form of life insurance especially designed to meet the requirements of the wage-earning population. The amount carried by each policy must therefore be necessarily low. The maximum policy is \$500.

(3) Applicants are not required to undergo a medical examination.

(4) The investment of funds received from premiums is regulated by the Law.

The Law provides the payment of only the total premium collected from the insured in the event of death before the policy has been in force one year, one half of the insurance being paid if death occurs during the second year and the full amount being paid if it occurs after two years from the date of the contract.

According to the *Regulations Governing Industrial Insurance* adopted by the Postal Remittances and Savings Bank, the premiums are payable monthly and are to be collected monthly by the bank's agents who call on the insured.

A 5 per cent discount on premium is allowed to a group insurance policy by which fifteen persons or more are insured.

Stipulations in Stamp Tax on Insurance

(1) Premium Receipts:	Stamp Tax
Each receipt amounting to over \$ 3	1 cent
" " " " " \$ 10	2 "
" " " " " \$ 100	3 "

(2) *Insurance Policies:* 2 cents for every \$1,000 covered by a policy. Policies under \$1,000 are exempt from this tax.

FOREIGN EXCHANGE CONTROL

During the war the Government has enforced the policy of absorbing foreign exchange resulting from exports, encouraging overseas remittances, and restricting the supply of foreign exchange and has concluded a number of currency loans. On March 14, 1938, the Chinese Government, in answer to the establishment of the "Federal Reserve Bank of North China" in Peiping at the instigation of the Japanese military, announced measures for exercising close surveillance on transactions in foreign exchange. The sale of foreign exchange was centralized in the Central Bank of China. In October, 1939, the Government promulgated measures to strengthen the currency, including the increase of the currency reserve, the restriction of the amount of notes and the absorption of idle capital.

Since the war began, there has been a capital flight on the one hand and the enemy's attempt to absorb the Chinese foreign exchange fund on the other. At the very outset, the Government devoted major attention to restricting the sale of foreign exchange for the payment of imports.

The Foreign Trade Commission was formed to promote exports, increase the foreign exchange fund and manage foreign exchange resulting from exports. In March, 1939, the Government adopted the foreign exchange stabilization fund system in Hongkong and Shanghai to maintain the credit of *fapi* (legal tender) because of the persistent Japanese and puppet efforts to absorb the foreign exchange fund. The Government took two counter-measures: the Bank of China and the Bank of Communications were instructed to announce the foreign exchange quotations in Chungking instead of in Hongkong in order to get away from the pernicious influence of the Shanghai and Hongkong black markets, and the import of non-essentials and luxuries was banned. The Foreign Exchange Committee of the Ministry was given the sole power to examine the applications of government offices and merchants for foreign exchange.

In the spring of 1941, the Chinese Government secured US\$50,000,000 from the United States and £10,000,000

(including the original £5,000,000 stabilization fund) from Great Britain to help stabilize China's currency and increase her foreign exchange reserve. These amounts, added by another US\$20,000,000 from the Chinese Government banks, made a grand total of US \$110,000,000 as currency stabilization fund for China. The Stabilization Board of China with a member each from the United States and Great Britain and three Chinese members was formed to control the fund. In July, 1941, following the announcement of the freezing of Chinese and Japanese assets by the American and British governments, the Chinese Government made strenuous efforts to control the black exchange market in Shanghai. A month later, the official exchange rate was changed to US 5½ and 3¾ d. Application for foreign exchange for commercial purposes according to the official rates had to be first approved by the Board. In September, 1941, regulations restricting registered and specially-authorized banks in Free China in the selling and buying of foreign exchange were promulgated. These regulations were similar to those applied in Shanghai. Beginning from October, 1941, commercial concerns could no longer apply for the official rates of exchange, but new rates were established for such purposes. All foreign exchange transactions of importers and exporters were to be calculated on the basis of the new rates. Following the sale of gold dollar thrift savings certificates on January 1, 1942, the rates were revised to US \$5 for NC \$100.

In order to relieve the heavy work of the Stabilization Board of China, the Chinese Government in October, 1941, established the Commission for the Control of Foreign Assets to be directly under the Executive Yuan. The commission takes care of all matters pertaining to the administration of foreign exchange for exporters, the collection of gold and silver, the absorption of foreign currencies from overseas Chinese, the examination of applications for foreign exchange by government organizations and national industries, the apportioning of loans for different purposes and the granting of permission to individuals for the use of assets affected by the freezing order. The Stabilization Board handles all matters relating to the application for the purchase of foreign exchange by importers or individuals.

RURAL LOANS

From January to June, 1942, the Bank of China, the Farmers' Bank of China, the Bank of Communications, and the Central Trust extended a total of \$277,267,000 of agricultural loans in 17 provinces, according to a report made by the rural finance department of the Joint Board of the Four Government Banks. Total loans outstanding at the end of June, 1942, amounted to \$567,832,000.

Szechwan received the lion's share of the total loans extended in this period. The amount reached \$79,801,000 at the end of June, 1942, 28.8 per cent of the total. Hunan came second and Kwangsi third.

Loans for the increase of agricultural production took the major part of the credits. This category covers a wide sphere, such as the purchase of seeds, agricultural tools, the increase of agricultural by-products, and other miscellaneous expenses. Irrigation as a single item took 13.4 per cent of the total. The Joint Board of the Four Government Banks, in collaboration with the National Water Conservancy Commission, has mapped out a 5-year irrigation loan program to be enforced in 1942-1946. The Joint Board's policy in granting agricultural loans from 1942 on is to lay special emphasis on irrigation. The Joint Board is extending financial assistance, while the National Conservancy Commission is taking care of the engineering work. Irrigation loans approved for 1942 amount to \$97,376,302, of which \$77,876,302 was appropriated by the Joint Board, while the rest were granted by the provincial governments.

The rural finance department of the Joint Board is the coordinating organ for the administration of rural credits in China. The Farmers' Bank of China is responsible for granting 45 per cent of the loans. In 1941, it loaned out \$259,561,000, more than 50 per cent of the total. The Bank of China extended 25 per cent, and the Bank of Communications and the Central Trust 15 per cent each.

Since August, 1942, the Farmers' Bank of China has been solely responsible for the extension of rural loans. The Bank of China, the Bank of Communications, and the Central Trust concluded their dealings in rural credits at that time, and handed over such affairs to the Farmers' Bank in accordance with instructions from the Joint Board.

Aiming at increasing agricultural production, more loans will be extended for the development of irrigation in conformity with the guiding principles laid down by the Joint Board for the extension of rural loans in 1943. In extending loans, preference is given to those cooperatives and other farmers' unions which are soundly organized. Rural savings is simultaneously promoted, while rural cooperative banks are being strengthened by enlarging the membership and increasing the capital. Special attention is directed to the extension of rural loans to the war areas and border regions.

From January to August, 1942, rural loans extended by government financial agencies totalled \$358,189,000. Total loans outstanding at the end of last August amounted to \$584,904,000.

SAVINGS DEPOSITS

The rapid banking development and the increase in note-issue have also been responsible for the spectacular growth in the savings deposits in government and private banks. While statistics for savings in private banks are not available, the total deposits in the Four Government Banks increased from \$1,027,105,713 to \$1,558,221,376 between October, 1941 and June, 1942.

Of the \$1,558,221,376, \$31,287,800 represented the purchase of gold dollar savings certificates by the people at the rate of NC\$20 to US \$1.00. These gold savings certificates, issued in April, 1942, are backed by a portion of the US \$500,000,000 loan to China.

Ordinary savings accounts occupied \$845,582,380.71 of the total. The government banks which are included in the statistics are the Central Trust, the Bank of China, the Bank of Communications, the Farmers' Bank of China and the Postal Remittances and Savings Bank.

Thrift savings accounts constituted \$32,664,461 of the total. Purchase of thrift savings certificates by the people amounted to \$648,686,734 up to June, 1942. The goal of the national sales promotion campaign for 1942 is \$3,000,000,000. The purpose of issuing these thrift savings certificates was stated by Generalissimo Chiang Kai-shek in a nationwide message on September 6, 1940, when he said, in part: "This fund will be devoted to a variety of reconstruction projects, such as extracting mineral resources, expanding light and heavy industries, coordinating

production and sales, developing agriculture and forestry, promoting irrigation and water conservancy, facilitating communication and transportation, etc. All these economic enterprises are closely related to national resistance and reconstruction. The National Government will be glad to consider the constructive suggestions of depositors on the method of supervision regarding the custody and utilization of the fund."

CUSTOMS GOLD UNIT

In consequence of the heavy depreciation in the value of silver, the National Government decided, early in 1930, to enforce the collection of Customs duties in a new gold unit.

Dr. T. V. Soong, then Minister of Finance, on January 15, 1930, issued an order to the Maritime Customs Administration to the following effect:

"Commencing with February 1, 1930, Customs duties in imports from abroad will be collected on a gold basis. Other Customs dues and charges, however, will continue to be collected as heretofore:

"In converting specific rates to a gold basis, the approximate average rate of exchange for the last quarter of 1929 will be used from February 1, to March 15, 1930. On and after March 16, 1930, the approximate average rate of exchange for the month of January, 1929, will be used.

"On and after February 1, 1930, the Haikwan tael will be discontinued as the unit of calculation of duties on imports from abroad. Instead, a new gold unit will be used. This unit will be equal to 60.1866 centigrams of pure gold and will, therefore, be equivalent to gold dollar 0.40 or 19.7265 pence sterling, or 0.8025 gold yen. From February 1, to March 15, 1930, inclusive, specific duties on imports from abroad now expressed in Haikwan taels will be converted into the new unit on the basis of Haikwan tael one equals 1.50 of the new unit; and beginning with March 16, 1930, on the basis of Haikwan tael one equals 1.75 of the new unit.

"As heretofore, dollars, taels and other currencies will be received in payment of duties. The rates at which such currencies will be accepted in payment of duties expressed in the new unit will be officially announced from time to time. At least three days' public notice will be given in the

even of change in rates. While for obvious reasons no attempt will be made to follow daily exchange fluctuations, these rates will closely approximate market rates between the respective local currency and gold-standard currencies."

Effective from April 1, 1942, the Ministry of Finance instructed the Central Bank of China to put into circulation all the C.G.U. notes issued since the end of 1931. The amounts issued during the 11-year period ending December, 1941, are as follows:

Date	Amount in C.G.U.
End of 1931	250,000.00
End of 1932	425,000.00
End of 1933	416,715.40
End of 1934	373,324.70
End of 1935	373,324.70
End of 1936	409,630.70
End of 1937	409,630.70
End of 1938	609,017.00
End of 1939	447,983.00
End of 1940	340,955.60
End of 1941	340,955.60

The relation between the C.G.U. and the legal tender is calculated by comparing the exchange rate between C.G.U. and the U.S. dollar with that between the U.S. dollar and the legal tender. The present gold content of 88.8671 centigrams in the C.G.U. marks an increase over the content in 1931 which was quoted at 60.1866 centigrams and which was, therefore, equivalent to US dollar 0.40 on the basis that the pure gold content of the American dollar was then quoted at 150.463 centigrams. The C.G.U. at present is at par with the U.S. dollar, whose gold content is also 88.8671 centigrams.

C.G.U. notes issued in May, 1931 were of the five denominations of \$10, \$5, \$1, \$0.20 and \$0.10.

The application of the C.G.U. assumed a wider range in 1932 when it was first used as the basis for the calculation of the value of import trade. A further extension occurred on September 9, 1934, when the Ministry of Finance ordered the Shanghai Gold Stock Exchange to base all their quotations on the C.G.U. rather than on foreign exchange.

APPENDIX

SUMMARY REGULATIONS GOVERNING
WARTIME NATIONAL FINANCIAL
STRUCTURE

*(Promulgated by the National Government
on September 8, 1939)*

Article I. The Four Government Banks, namely, the Central Bank of China, the Bank of China, the Bank of Communications, and the Farmers' Bank of China, shall be authorized to form a Joint Board to conduct all kinds of banking business relative to the wartime financial policy of the National Government. The said Board shall be organized along the following lines:—

- (a) The Joint Board shall have a Board of Directors to be composed of the Governor and Deputy Governor of the Central Bank of China, the Chairman of the Board of Directors and the General Manager of the Bank of China, the Chairman of the Board of Directors and the General Manager of the Bank of Communications, the Chairman of the Board of Directors and the General Manager of the Farmers' Bank of China and a special representative of the Ministry of Finance.
- (b) The Board of Directors of the Joint Board shall have a Chairman and three Executive Directors, to be officially appointed by the National Government. The Chairman shall have general charge of all banking affairs, while the Executive Directors shall assist the Chairman in handling such affairs.
- (c) The Joint Board shall have a Secretary-General to be appointed by the Chairman.
- (d) The Ministry of Finance shall authorize the Chairman of the Board of Directors of the Joint Board to take the necessary steps on its behalf and on behalf of the Four Government Banks to cope with financial conditions in wartime.
- (e) The organic law and other regulations of the Joint Board shall be formulated by the Board of Directors and submitted to the Ministry of Finance for official approval.

Article II. The Four Government Banks shall continue to perform separately their respective functions and develop their banking business as specifically provided in their respective banking charters.

Article III. In case any one of the Four Government Banks has not yet moved its head office to the seat of the National Government,

the Board of Directors of the Joint Board shall be responsible for effecting such removal by fixing a date in the nearest future.

Article IV. The Joint Board and the head offices of the Four Government Banks shall be required to submit to the Ministry of Finance for official examination a daily report on receipts and disbursements, amount of note issue and interest rate in the money market as well as a monthly statement of assets and liabilities as at the end of the previous month before the tenth day of each month.

Article V. The Joint Board and the head offices of the Four Government Banks may from time to time submit to the Ministry of Finance confidential reports and proposals relating to important questions of wartime currency and finance.

But as regards those measures already approved by the Ministry of Finance for execution, the Joint Board and the head offices of the Four Government Banks shall carry out such measures in strict accordance with the instructions of the Ministry of Finance without delay.

In doing so, they shall be required to appoint a special official to supervise the work at various sub-offices. An outline of procedure and a blank form of report shall be prepared for this purpose. Monthly reports on the work undertaken in different districts shall be prepared and submitted to the Ministry of Finance through the Joint Board and the head offices of the Four Government Banks.

Article VI. The Board of Directors of the Joint Board shall have from ten to twenty inspectors. They shall be sent to the head and branch offices of the Four Government Banks to ascertain whether any banking office disobeys or delays the execution of the National Government's policies, and whether or not the banks conduct their affairs in full conformity with the wartime requirements. The inspectors shall submit to the Ministry of Finance from time to time confidential reports on the results of their inspection, so that reward may be granted the deserving banks and proper penalties may be meted out to the delinquent ones.

Article VII. The present Summary Regulations shall come into force upon the approval of the Supreme National Defence Council.

REVISED ORGANIC LAW OF THE JOINT
BOARD OF FOUR GOVERNMENT BANKS

*Promulgated by the Ministry of Finance on
September 1, 1942)*

Article I. In order to carry out the wartime financial and economic policies of the National Government, the Central Bank of China, the

Bank of China, the Bank of Communications and the Farmers' Bank of China shall form a joint administration office, to be known, for the sake of convenience, as the Joint Board of the Four Government Banks. The Joint Board will take charge of the supervision and direction of the activities and business affairs of the Central Bank of China, the Bank of China, the Bank of Communications and the Farmers' Bank of China.

Article II. The activities and business affairs of the Central Trust of China and the Postal Remittances and Savings Bank shall also come under the supervision and direction of the Joint Board of the Four Government Banks.

Article III. The duties of the Joint Board of the Four Government Banks shall be as follows:—

- (1) Planning and distribution of the financial network.
- (2) Training, examination and readjustment of the personnel of the government banks.
- (3) Auditing of the expenditures and budgetary estimates of the government banks.
- (4) Adjustment of the note-issue and inspection of note reserves of the government banks.
- (5) Directing and auditing of savings deposits.
- (6) Auditing and inspection of loans extension.
- (7) Auditing and inspection of rural credits extension.
- (8) Approval of applications for foreign exchange by importers.
- (9) Assisting the Ministry of Finance in the administration of matters relating to finance.
- (10) Other matters relating to the financial policy in wartime.

Article IV. The Joint Board of the Four Government Banks shall have a Board of Directors composed of the Governor and the Deputy-Governor of the Central Bank of China, the Chairman and the General Manager of the Bank of China, the Chairman and the General Manager of the Bank of Communications, the Chairman and the General Manager of the Farmers' Bank of China as well as the ministers of finance, economic affairs, communications and food.

Article V. The Board of Directors of the Joint Board of the Four Government Banks shall have a Chairman and a Deputy Chairman. The Chairman shall have full charge of all affairs and the Deputy Chairman shall assist the Chairman in the discharge of his official duties.

Article VI. The Ministry of Finance shall authorize the Chairman and the Deputy Chairman of the Board of Directors of the Joint Board of the Four Government Banks to administer the activities and business affairs of the Central Bank of China, the Bank of China, the Bank of Communications and the Farmers' Bank of China as well as the Central Trust of China and the Postal Remittances and Savings Bank. Whenever necessary the Chairman and the Deputy Chairman may take over the activities and business affairs of the government banks.

Article VII. The Joint Board of the Four Government Banks shall organize a Wartime Finance and Economy Committee for formulating policies. Members of the committee shall be selected by the Chairman and Deputy Chairman from senior staff members of government banks or from other experts.

Article VIII. The Wartime Finance and Economy Committee shall have the following sub-committees for the examination of related matters: Note-Issue, Savings, Loans and Discounts, Rural Finance, Exchange and Special Investment.

Article IX. The Wartime Finance and Economy Committee and its sub-committees shall each have a director and a deputy director and a certain number of members. They shall be appointed by the Chairman and Deputy Chairman of the Board of Directors of the Joint Board. The Secretariat of the Joint Board may invite interested persons to attend meetings of sub-committees.

Article X. The Joint Board of the Four Government Banks shall have a Secretariat in charge of daily office work under the direction of the Chairman and Deputy Chairman. The Secretariat shall have the following sections: Correspondence, Auditing, Statistics, Note-Issue, Savings, Loans, Rural Credits and Exchange.

Article XI. The Secretariat shall have a Secretary-General and an Assistant Secretary-General to be appointed by the Chairman and Deputy Chairman. Every section will have a section chief to be appointed by the Chairman and Deputy Chairman upon the recommendation of the Secretary-General.

Article XII. The Secretariat shall have from two to four secretaries and a certain number of technical experts, supervisors and auditors to be appointed by the Chairman and Deputy Chairman upon the recommendation of the Secretary-General.

Article XIII. The sections of the Secretariat may have sub-sections under them to handle different work. The staff of sub-sections shall be employed by the Secretary-General.

Article XIV. Whenever necessary, the Secretary-General may petition the Chairman

and Deputy Chairman of the Joint Board to borrow the services of staff members of government banks. The salaries of borrowed staff members shall be paid by the government banks concerned.

Article XV. Whenever necessary, the Joint Board of the Four Government Banks may establish branch offices or sub-offices in other localities. The organization of branch offices and sub-offices shall be governed by separate regulations.

Article XVI. If other laws and regulations are contradictory to this Revised Organic Law of the Joint Board of the Four Government Banks, the provisions in this Revised Organic Law shall prevail.

Article XVII. The Revised Organic Law shall be approved by the Ministry of Finance and shall be enforced after submitting the same to the Supreme National Defense Council for reference.

THE Hsien BANK LAW

(Promulgated by the National Government on January 20, 1940)

Article I. *Hsien* banks shall be established according to law by *hsien* governments with public funds of the *hsien*, districts and towns and voluntary subscriptions of the people.

(This provision shall apply to municipal banks of ordinary municipalities and other similar administrative districts.)

Article II. *Hsien* banks shall be business organizations of limited liability. They shall be established on the petition of competent local authorities and is subject to the Ministry of Finance for registration. *Hsien* banks shall regulate local finance, participate in economic reconstruction and help expand cooperative enterprises.

Article III. A *hsien* bank shall regard the *hsien* with its districts and towns as the area of its business operations. Two or more *hsien* or one *hsien* and its surrounding *hsien*, district and town may be grouped into one area of banking activities, if warranted by special local conditions.

Article IV. A *hsien* bank may establish branch banks, sub-branches and bank offices within its business area. But such a step shall be reported to the Ministry of Finance through the competent local authorities for record keeping.

Article V. A *hsien* bank shall be allowed to conduct banking business for 30 years. At the end of this period, the banks may apply for an extension through the petition of competent local authorities subject to the approval of the Ministry of Finance.

Article VI. A *hsien* bank shall have a total capital of not less than \$50,000. At least 50 per cent of the capital shall be represented by private shares.

Article VII. The private shares of a *hsien* bank shall be solicited from persons living within the *hsien*. In case of inadequacy, persons living outside the area of banking operations may be approached as prospective shareholders.

Article VIII. All persons of legal age and cooperative societies located within the area of banking operations shall be eligible as private shareholders of a *hsien* bank.

Article IX. A *hsien* bank shall be allowed to open for business when more than 50 per cent of its capital has been collected and when through the petition of the *hsien* chamber of commerce, including the following particulars, the Ministry of Finance has approved its registration and issued a business licence:—

- (1) A list of names and birthplaces of bank shareholders,
- (2) A list of the amount of capital both paid and unpaid by the shareholders,
- (3) A list of names and birthplaces of bank employees,
- (4) The amount of license fee paid.

Any unpaid bank capital shall be fully paid within 5 years from the date of registration. The payment of such capital shall be reported to the Ministry of Finance for record keeping.

Article X. A *hsien* bank shall engage in the following activities:

- (1) Receive deposits,
- (2) Extend loans, against guaranteed securities,
- (3) Extend guaranteed credit loans,
- (4) Handle domestic exchange and documentary remittances,
- (5) Accept and discount commercial papers,
- (6) Act as agent for the collection and payment of funds,
- (7) Underwrite government bonds, corporate bonds and agricultural bonds,
- (8) Conduct warehousing business,
- (9) Assume custody of precious articles and marketable securities.

Article XI. A *hsien* bank shall confine its loan operations to the following categories:—

- (1) Loans on local granaries,
- (2) Loans on agricultural, forestry, mining and communications enterprises,
- (3) Loans on pawned articles,
- (4) Loans on sanitary equipment enterprises,
- (5) Loans on other local constructive projects,
- (6) Loans on water conservancy projects.

Article XII. *Hsien* banks shall act as agents for public treasuries under the jurisdiction of *hsien* governments.

Article XIII. A *hsien* bank shall be prohibited from extending any loan for a period of more than two years.

Article XIV. *Hsien* banks may act as agents of provincial, municipal and other banks.

Article XV. *Hsien* banks may borrow funds from provincial, municipal and other banks without security and repay such loans on the instalment basis.

Article XVI. Whenever deemed necessary, the Ministry of Finance or the local authorities may restrict the loan extension and other activities of *hsien* banks.

Article XVII. *Hsien* banks shall be prohibited from conducting the following activities as well as others not provided in the present Law:

- (1) Purchasing shares of the bank or granting loans with the bank's shares as security,
- (2) Buying and selling real estate, except property required for business operations,
- (3) Buying and selling marketable securities.

Article XVIII. The directors and supervisors representing government shares shall be appointed by *hsien* governments; while the directors and supervisors representing private shares shall be elected at the shareholders' meeting according to law.

A list of the names and birthplaces of directors and supervisors shall be reported through the local authorities to the Ministry of Finance for record keeping.

Article XIX. The fiscal year of *hsien* banks shall correspond to the calendar year. The banks shall make semi-annual settlements at the end of June of each year.

Article XX. At the end of each fiscal year the following documentary reports shall be compiled by the board of directors and inspected by the supervisors of the bank:—

- (1) A report on the business conditions of the bank,
- (2) A statement of bank assets and liabilities,
- (3) A full list of bank assets,
- (4) A statement of bank profits and losses,
- (5) Proposals for the distribution of surplus, dividend, bonus, etc.

The above reports shall be submitted through the local authorities to the Ministry of Finance for examination and approval. The balance sheet and the profit and loss statement shall be published in the local newspapers.

Article XXI. At the time of business settlement, the banks shall allocate at least 20 per cent of the net profits toward the surplus account. When the accumulated surplus becomes twice as much as the total capital, the rate of annual allotment may be reduced to 10 per cent of the net profits.

Banks shall use the surplus to make up any losses in capital and maintain the usual rate of dividend.

Article XXII. In addition to accumulating surplus, *hsien* banks shall declare annual dividends. Such dividends shall be paid to private shareholders before the government shareholders are entitled to receive dividends. The rate of dividends shall be specifically mentioned in the regulations of the banks; but the rate of dividends for private shares shall be from one to two per cent higher than that for government shares.

Article XXIII. When a *hsien* bank violates the provisions of Article II, the Ministry of Finance may order the bank concerned to suspend its operations and ask the court to impose thereon a fine of from \$500 to \$2,000.

Article XXIV. When a *hsien* bank violates the provisions of Articles IV, XIII, XVI, XVII, XIX, XX, XXI and XXII, the directors and manager of the bank concerned shall be subject to a fine of from \$10 to \$1,000.

Article XXV. The Banking Law and other specific bank laws and regulations shall apply in matters not covered by the present Law.

Article XXVI. The present Law shall come into force from the date of its promulgation.

SUMMARY REGULATIONS GOVERNING THE PROMOTION OF THRIFT AND RECONSTRUCTION SAVINGS DEPOSITS

(Applicable to the Central Bank of China, the Bank of China, the Bank of Communications, the Farmers' Bank of China, the Central Trust of China, and the Postal Remittances and Savings Bank)

Article I. During the current fiscal year (1940) the various government financial institutions shall receive Thrift and Reconstruction Savings deposits to the maximum limit of NC \$200,000,000 according to the following proportions: The Central Bank of China, \$30,000,000; the Bank of China, \$30,000,000; the Bank of Communications, \$30,000,000; the Farmers' Bank of China, \$30,000,000; the Central Trust of China, \$30,000,000; and the Postal Remittances and Savings Bank, \$50,000,000.

Article II. The various government financial institutions shall be required to instruct their branches and sub-branches to take an active

part in promoting such savings and in obtaining the respective amount of their pledged shares of savings deposits at the end of 1940.

They shall also be required to submit a monthly report on the actual amount of savings deposits to the Joint Board of the Four Government Banks. In case of necessity, the said Board may appoint special inspectors to investigate the operating record of the various government financial institutions in handling Thrift and Reconstruction Savings.

Article III. The various government financial institutions shall formulate their own rules of inspecting the work of their employees handling savings and submit the same to the Joint Board of the Four Government Banks for registration. The said Board shall recommend the most meritorious bank employees to the Ministry of Finance for special encouragement.

Article IV. The Joint Board may, on the basis of the operating record of savings deposits submitted by the various government financial institutions, petition the Ministry of Finance for the approval of granting individual subsidies to the deserving banks.

Article V. The Joint Board may petition the Ministry of Finance for the approval of exempting the savings depositors from the payment of income tax on interest earned on Thrift and Reconstruction Savings in order to encourage the people to respond enthusiastically to the call of the nation-wide savings drive.

Article VI. For the purpose of supervising and assisting the various government financial institutions in the active promotion of Thrift and Reconstruction Savings, the Joint Board shall establish the Thrift and Reconstruction Savings Soliciting Committee with its head office in Chungking and branch offices in various localities.

Article VII. The work of soliciting savings shall be wide-spread and permanent in nature. It shall be conducted in close cooperation with the Ministry of Information's committee on thrift and reconstruction savings in order to utilize fully publicity means in the movement.

Article VIII. The expenditures of head and branch offices of the Savings Soliciting Committee shall be submitted by its head office to the Joint Board for approval. The total amount of expenditures in the Committee's budget (to be separately drafted and approved) shall be borne by the various government financial institutions in the following proportions: The Central Bank of China, and the Central Trust of China, 25 per cent; the Bank of China, 25 per cent; the Postal Remittances and Savings Bank, 20 per cent; the Bank of Communications, 15 per cent; and the Farmers' Bank of China, 15 per cent.

Article IX. The head and branch offices of the Savings Soliciting Committee shall have a number of solicitors and assistant solicitors. They may be either transferred from the various Government financial institutions or employed through public examination.

Article X. The present regulations shall be put into effect upon the approval of the Joint Board of the Four Government Banks.

PROVISIONAL REGULATIONS OF BANKING CONTROL IN WARTIME

(Promulgated by the Ministry of Finance on August 7, 1940)

Article I. In addition to laws and regulations governing banking activities all banks shall carry on their daily operations in wartime in accordance with the present Regulations.

All financial institutions, operating under other names than "banks" and engaged in any of these functions, such as receiving deposits, granting loans or mortgage loans, discounting commercial papers, conducting exchange operations, etc., shall be regarded as "banks" under the present Regulations.

Article II. With the exception of savings deposits specifically governed by the *Savings Bank Law* every bank shall be required to deposit a "deposit reserve fund" equivalent to twenty per cent of its total deposits with any of the Four Government Banks, namely, the Central Bank of China, the Bank of China, the Bank of Communications and the Farmers' Bank of China, within the same locality. The depositing bank shall be entitled to receive a reasonable rate of interest on such "deposit reserve" from any of the Four Government Banks concerned.

Article III. The banks shall utilize their deposits for sound investment in enterprises for productive reconstruction and the joint production and sale of commodities. They shall confine their mortgage loans to legitimate business and approved businessmen. Upon receiving applications for renewing mortgage loans the banks shall carefully scrutinize the nature of commodities involved. If the mortgaged goods are articles of daily necessity essential to the people's livelihood, the banks shall refuse the renewal of such loans and insist on their prompt repayment in order to prevent the abusive practice of hoarding.

Article IV. The banks shall be prohibited from direct participation in any business undertaking or in hoarding any kind of commodities. They shall also be prohibited from buying and selling commodities either on their own account or on behalf of their clients through the instrumentality of their "agency department," "trading department," "trust department," or any other such offices.

Article V. In accepting funds for outport remittances the banks shall confine this type of banking activity to funds definitely used for the purchase of daily necessities or war requirements.

Article VI. The banks shall submit a ten-day report in tabular form on the actual conditions of their deposits, loans and remittances to the Ministry of Finance for inspection. The official form of these report tables shall be separately fixed by the Ministry of Finance.

Article VII. The Ministry of Finance shall appoint inspectors to examine the daily accounts, vault conditions and other important documents of the banks at any time without notice.

Article VIII. The employees of banks, whether government operated or jointly managed by the Government and private persons, shall be regarded as government employees and prohibited from direct participation in any business undertaking.

Article IX. Any violation of the provisions of the present Regulations shall be punishable by law. The following punishments shall also apply to such violations:

- (1) For any violation of Articles II, V and VI the violator shall be subject to a fine of from \$3,000 to \$10,000.
- (2) For any violation of Articles III and IV the violator shall be subject to a fine equivalent to fifty per cent of the total amount of his business transactions.
- (3) For refusal or obstruction in the performance of duties under Article VII the violator shall be subject to not only the penalty for gross negligence of official duties but also separate punishment for specific charges under the present Regulations.

Article X. The present Regulations shall come into force from the date of their promulgation.

REVISED REGULATIONS GOVERNING WAR RISK INSURANCE POLICIES OF CENTRAL TRUST OF CHINA

(Promulgated by the National Government on October 11, 1937 and revised on November 4, 1938)

Article I. For the purpose of regulating wartime foreign and domestic trade and safeguarding the shipment of agricultural, industrial and mining products the National Government has issued a special order to the Ministry of Finance to appropriate the sum of \$10,000,000 toward the capital of the Central Trust of China as a special fund for conducting the business of war-risk insurance.

In case of insufficiency, the Central Trust of China may submit a petition to the Ministry of Finance for additional appropriations.

The Central Trust of China shall handle war-risk insurance under an independent accounting system and submit a monthly report on all the accounts to the Ministry of Finance for examination. At the conclusion of hostilities war-risk insurance shall be discontinued.

Article II. War-risk insurance shall cover the following kinds:—

- (1) War-risk in transit, which shall be limited to the war-risk involved in land and water transportation during the period of trans-shipment, that is, all war-risks of transportation before the unloading of imports or after the loading of exports. The Central Trust of China shall be authorized to write land transportation insurance on both war and ordinary risks, but not on war-risk alone.
- (2) Insurance policies on war-risk in transit include six classes:—
 - (a) Agricultural produce
 - (b) Mineral products
 - (c) Manufactured goods
 - (d) Commodities of foreign trade
 - (e) Transportation equipment, limited to those in transit related to (a), (b), (c) and (d)
 - (f) Transportation workers, limited to a definite number of those serving in the period of transportation related to (a), (b), (c) and (d)
- (3) In case of undue risks inherent in the nature of insured commodities and the conditions of transportation, the Central Trust of China, by explaining the difficulties involved, may reject the application for war-risk insurance.

Article III. With regard to the insurance of export commodities in transit, the applicant shall be required to obtain advance permission from the Foreign Trade Commission of the Ministry of Finance.

Article IV. The Central Trust of China may designate and appoint the various Chinese insurance companies as its agents for handling war-risk insurance.

Article V. The Central Trust of China may organize a War-risk Insurance Advisory Committee for consulting purposes. The members of this Committee, serving without remuneration, shall be composed of one delegate each from the Ministries of Finance, Economic Affairs, and Communications and several insurance experts to be invited to serve on the Committee by the Central Trust of China.

Article VI. All insurance rates on wartime risks shall be determined by the Central Trust of China according to the degree of risk involved and the conditions in the market. Subject to change from time to time, they shall be paid in full without discount.

The insurance rates shall be reported to the Ministry of Finance for inspection.

Article VII. The provisions of the insurance certificate shall be formulated by the Central Trust of China according to the customary

insurance practice. In case of damage done to the insured, the procedure of indemnification shall be carried out according to the provisions of the insurance certificate.

The insurance provisions shall be reported to the Ministry of Finance for inspection.

Article VIII. The present Regulations shall, after their registration with the National Government, come into force upon the approval by the Ministry of Finance.

GOVERNMENT BANKS

Name	Paid-Up Capital	Head office
Central Bank of China	\$100,000,000	Chungking
Bank of China	60,000,000	"
Bank of Communications	60,000,000	"
Farmers' Bank of China	60,000,000	"
Central Trust	50,000,000	"
Postal Remittances and Savings Bank		"

*The Postal Bank has no paid-up capital but draws its working capital from the Ministry of Communications.

PRIVATE BANKS

Name	Paid-Up Capital	Head office
Agricultural and Commercial Bank	\$ 3,000,000	Shanghai
Agricultural and Industrial Bank of China	5,000,000	Shanghai; Chungking
Agricultural and Industrial Bank of Kiangtsing	5,000,000	Kiangtsing (Szechwan)
Agricultural and Industrial Bank of Shenghsien	106,900	Shenghsien (Chekiang)
Agricultural and Industrial Bank of Tatsusien	200,000	Tatsu (Szechwan)
An Hua Commercial Bank	500,000	Shanghai
Bank of Asia	1,000,000	Shanghai
Bank of Greater Asia	500,000	Shanghai
Bank of Kunming	2,030,300	Kunming
Central Trust Company	10,000,000	Chungking
Changkiang Industrial Bank	2,000,000	Chungking
Chekiang Commercial Banking Corp.	500,000	Ningpo (Chekiang)
Chekiang Construction Bank	500,000	Shaoshing (Chekiang)
Chekiang Industrial Bank	2,000,000	Shanghai
Chekiang Industrial and Commercial Bank	4,000,000	Shanghai
Cheng Ming Commercial and Savings Bank	500,000	Shanghai
Chengtu Commercial Bank	500,000	Chengtu
Chi Kang Bank	2,500,000	Yaan (Sikang)
Chien Kuo Bank	1,330,000	Chungking
Chientai Commercial Bank	500,000	Shanghai
China Development Bank	1,000,000	Shanghai
China Development Finance Corp.	10,000,000	Hongkong
China and South Sea Bank	7,500,000	Shanghai
China Industrial and Mining Bank	5,000,000	Chungking
Chung Dai Bank	500,000	Shanghai
Chung Foo Union Bank	2,000,000	Shanghai
Chung Hwa Commercial and Savings Bank	500,000	Shanghai
Chung Mou Bank	3,000,000	Shanghai
Chung Wei Bank	3,500,000	Shanghai
Chung Yun Commercial and Savings Bank	500,000	Shanghai
Chungking Bank	10,000,000	Chungking
Chungwoo Commercial and Savings Bank	500,000	Shanghai
Commercial Bank of Foochow	250,000	Foochow
Continental Bank	4,000,000	Shanghai
Dah Chwan Bank	3,000,000	Chengtu
Dah Chung Bank	4,000,000	Shanghai
Dah Kong Bank	500,000	Shanghai

Name	Paid-up Capital	Head office
Dah Kung Commercial and Savings Bank	\$ 1,000,000	Shanghai
Dah Mou Commercial Bank	500,000	Yuanling (Hunan)
Dah Tung Commercial Bank	250,000	Tsungming (Kiangsu)
Development Bank of Szechwan	1,000,000	Chungking
Foo Chwan Bank	2,500,000	Chengtu
Foo Yuan Trust Co.	500,000	Shanghai
Fu Feng Trust Co.	1,000,000	Shanghai
Fuh Li Industrial Bank	2,000,000	Hengyang (Hunan)
Hankow Commercial and Savings Bank	1,000,000	Hankow
Heng Lee Bank	707,280	Shanghai
Ho Chen Bank	2,000,000	Chungking
Ho Tai Commercial Bank	500,000	Shanghai
Ho Ziang Hsin Trust Co.	500,000	Shanghai
Hwa An Commercial and Savings Bank	500,000	Shanghai
Hwa Feng Trust Co.	500,000	Shanghai
Hwa Mou Commercial Bank	500,000	Shanghai
Industrial Bank of Asia	5,000,000	Chungking
Industrial Bank of Kiangsi	1,000,000	Kian (Kiangsi)
Joint Savings Society and Joint Trust	1,000,000	Shanghai
Kaiyuan Bank	1,000,000	Chungking
Kianghai Bank	1,000,000	Chungking
Kiangsi Reconstruction Bank	1,000,000	Kanhsien
Kingcheng Banking Corporation	7,000,000	Shanghai; Chungking
Kuo Fu Commercial and Savings Bank	1,000,000	Shanghai
Kuo Hwa Bank	3,050,000	Shanghai
Kuo Sing Bank	1,000,000	Shanghai
Kuoan Trust Co.	500,000	Shanghai
Kwang Chung Commercial Bank	1,000,000	Shanghai
Kwang Hwa Bank	500,000	Shanghai
Kwang Yui Bank	5,000,000	Chungking
Land Bank of China	2,500,000	Shanghai
Manufacturers Bank of China	5,000,000	Hongkong; Chungking
Mei Feng Bank of Szechwan	10,000,000	Chungking
Min Foo Commercial and Savings Bank	500,000	Shanghai
Mou Hwa Commercial Bank	1,200,000	Chungking
Mutual Aid Trust Co.	2,000,000	Chengtu
Nanking Commercial Bank	250,000	Nanking
National Commercial Bank of China	4,000,000	Shanghai; Chungking
National Industrial Bank of China	4,000,000	Chungking
Ningpo Commercial and Savings Bank	4,000,000	Hongkong; Chungking
Ouhai Industrial Bank	250,000	Wenchow (Chekiang)
Pachwan Bank	500,000	Tungliang (Szechwan)
Pingtai Bank	1,000,000	Shanghai
Pootung Commercial Bank	1,000,000	Shanghai
Salt Bank of Szechwan	6,000,000	Chungking
Shanghai Citizen's Commercial and Savings Bank	250,000	Shanghai
Shanghai Coal Merchants Bank	400,000	Shanghai
Shanghai Commercial and Savings Bank	5,000,000	Shanghai
Shanghai Iron Industry Bank	1,000,000	Shanghai
Shanghai Reconstruction Bank	500,000	Shanghai
Shanghai Silk Industry Commercial and Savings Bank	1,200,000	Shanghai
Shanghai Trust Company	1,000,000	Shanghai
Shansi Yui Hwa Bank	5,000,000	Chungking
Shaoshing Commercial Bank	250,000	Shaoshing (Chekiang)
Shenghsien District Bank	62,120	Shenghsien (Chekiang)
Sin Hua Trust and Savings Bank	2,000,000	Chungking
South-Eastern Trust Company	1,000,000	Shanghai
Sung Tai Trust Co.	3,000,000	Shanghai
Szechwan-Sikang People's Commercial Bank	10,000,000	Chungking
Tai Ho Hsin Bank	1,200,000	Shanghai
Tung Chi Trust Co., of Northwest	250,000	Sian
Tung Hwei Industrial Bank	2,000,000	Chungking
Tung Lai Bank	5,000,000	Shanghai

Name	Paid-up Capital	Head office
Tung Sing Bank	\$ 5,000,000	Chungking
Tung Wei Trust Co.	500,000	Shanghai
Tung Yih Trust Co.	3,000,000	Shanghai
Tungyi Trust Co.	1,360,000	Shanghai
Tungyun Commercial and Savings Bank	1,117,500	Shanghai
Tze Chung Commercial and Savings Bank	1,000,000	Shanghai
Wei Chung Commercial and Savings Bank	1,500,000	Shanghai
Wenchow Commercial Bank	200,000	Wenchow (Chekiang)
Women's Commercial and Savings Bank	500,000	Shanghai
Yi Feng Bank	2,500,000	Luh sien
Yi Hwa Bank	4,000,000	Kunming
Yien Yieh Commercial Bank	7,500,000	Shanghai; Chungking
Young Brothers Banking Corporation	4,000,000	Chungking
Yu Song Bank of Tzeliutsing	500,000	Tzeliutsing (Szechwan)
Yu Tsing Bank	1,000,000	Tientsin
Yun Feng Commercial Bank	1,000,000	Shanghai
Yunnan Hsing Wen Bank	16,000,000	Kunming
Yunnan Industrial Bank	12,000,000	Kunming
Yunnan Mining Bank	5,000,000	Kunming
Yung Dah Bank	500,000	Shanghai
Yung Hung Banking Corporation of Shanghai	700,000	Shanghai
Yung Lee Bank	2,400,000	Chungking
Yung Tai Commercial Bank	700,000	Shanghai

PROVINCIAL BANKS

Anhui Provincial Bank	\$ 5,000,000	Lihwang; Tuncki
Chekiang District Bank	1,769,200	Lishui
Fukien Provincial Bank	5,000,000	Yungan
Honan Agricultural and Industrial Bank	2,000,000	Loyang
Hopei Provincial Bank	500,000	Loyang
Hunan Provincial Bank	3,000,000	Laiyang
Hupei Provincial Bank	5,000,000	Enshih
Kansu Provincial Bank	3,500,000	Lanchow
Kiangsi Farmers' Bank	4,000,000	Chungking
Kiangsi Provincial Bank	6,000,000	Shanghai
Kiangsi Reconstruction Bank	500,000	
Kwangsi Bank	6,512,500	Kweilin
Kwangtung Provincial Bank	10,000,000	Shiukwan
Kweichow Bank	3,000,000	Kweiyang
Ningsia Provincial Bank	1,200,000	Ningsia
Shansi Provincial Bank	...	
Shantung People's Bank	3,200,000	Sian
Shensi Provincial Bank	5,000,000	Kangting
Sikang Provincial Bank	3,500,000	
Sinkiang Provincial Bank	...	
Suiyuan Provincial Bank	300,000	Shenpa
Szechwan Provincial Bank	4,000,000	Chungking
Yu Ming Bank of Kiangsi	2,000,000	Kanhsien
Yunnan Futien New Bank	8,000,000	Kunming
Yunnan Singwen Bank	4,000,000	Kunming

Hsien (COUNTY) BANKS

Changshow Hsien Bank	\$ 100,250	Changshow (Szechwan)
Chengtou Hsien Bank	400,400	Chengtou (Szechwan)
Chuhsien Hsien Bank	300,000	Chuhsien (Szechwan)
Chunghsien Hsien Bank	100,000	Chunghsien (Szechwan)
Fowling Hsien Bank	332,450	Fowling (Szechwan)
Fushun Hsien Bank	600,000	Fujen (Szechwan)
Hochwan Hsien Bank	200,000	Hochwan (Szechwan)
Hokiang Hsien Bank	400,000	Hokiang (Szechwan)
Hsingwen Hsien Bank	55,000	Hsingwen (Szechwan)
Hunghsien Bank	100,000	Hunghsien (Szechwan)

Names	Paid-up Capital	Head office
Jungchang Hsien Bank	\$ 100,000	Jungchang (Szechwan)
Junghsien Hsien Bank	200,000	Yunhsien (Szechwan)
Kaihsien Hsien Bank	200,000	Kaihsien (Szechwan)
Kiangpei Hsien Bank	200,000	Kiangpei (Szechwan)
Kienwei Hsien Bank	30,000	Kienwei (Szechwan)
Kikiang Hsien Bank	212,750	Kikiang (Szechwan)
Koyui Hsien Bank	126,040	Koyui (Kwangtung)
Kwangan Hsien Bank	150,000	Kwangan (Szechwan)
Kwanghan Hsien Bank	232,600	Kwanghan (Szechwan)
Lingshui Hsien Bank	200,000	Lingshui (Szechwan)
Loshan Hsien Bank	150,000	Loshan (Szechwan)
Luchow Hsien Bank	500,000	Luchow (Szechwan)
Lungchang Hsien Bank	151,050	Lungchang (Szechwan)
Meishan Hsien Bank	52,400	Meishan (Szechwan)
Nachi Hsien Bank	200,000	Nachi (Szechwan)
Nanchung Hsien Bank	543,500	Nanchung (Szechwan)
Nanchwan Hsien Bank	200,000	Nanchwan (Szechwan)
Nanpu Hsien Bank	100,000	Nanpu (Szechwan)
Omei Hsien Bank	100,000	Omei (Szechwan)
Pahsien Hsien Bank	500,000	Pahsien (Szechwan)
Pengki Hsien Bank	72,500	Pengki (Szechwan)
Pengshan Hsien Bank	200,000	Pengshan (Szechwan)
Santai Hsien Bank	100,000	Santai (Szechwan)
Sanyuan Hsien Bank	113,180	Sanyuan (Shensi)
Shihfang Hsien Bank	100,000	Shihfang (Szechwan)
Sienhan Hsien Bank	300,000	Sienhan (Szechwan)
Singtou Hsien Bank	50,000	Singtou (Szechwan)
Suhsien Hsien Bank	100,000	Suhsien (Szechwan)
Suning Hsien Bank	420,000	Suning (Szechwan)
Tahhsien Hsien Bank	260,700	Tahhsien (Szechwan)
Tienkiang Hsien Bank	200,000	Tienkiang (Szechwan)
Tungliang Hsien Bank	100,000	Tungliang (Szechwan)
Tungnan Hsien Bank	100,000	Tungnan (Szechwan)
Tatsu Hsien Bank	120,000	Tatsu (Szechwan)
Tzechung Hsien Bank	500,000	Tzechung (Szechwan)
Weinan Hsien Bank	251,480	Weinan (Shensi)
Weiyuan Hsien Bank	125,000	Weiyuan (Szechwan)
Wenkiang Hsien Bank	225,000	Wenkiang (Szechwan)
Wuki Hsien Bank	250,000	Wuki (Szechwan)
Yungchwan Hsien Bank	260,000	Yunchwan (Szechwan)

SAVINGS STATISTICS OF CENTRAL TRUST, BANK OF CHINA, BANK OF COMMUNICATIONS, FARMERS' BANK OF CHINA AND POSTAL REMITTANCES AND SAVINGS BANK

(October, 1941—June, 1942)

Date	Kinds	Ordinary Savings Accounts	Thrift Savings Accounts	Thrift Savings Certificates	US Savings Certificates	Total
		\$	\$	\$	\$	\$
Oct. 1941		579,420,291.19	22,669,628.95	425,015,793.26	..	1,027,105,713.40
Nov. 1941		645,173,517.05	28,406,456.77	450,242,918.46	..	1,123,822,892.28
Dec. 1941		657,361,893.78	28,917,136.53	506,533,078.35	..	1,192,812,108.66
Jan. 1942		685,704,249.40	29,492,443.55	528,124,177.23	..	1,243,320,870.18
Feb. 1942		707,956,430.26	29,561,413.82	545,669,652.07	..	1,283,187,496.15
Mar. 1942		738,286,843.78	30,387,319.22	552,689,937.47	..	1,321,364,100.47
Apr. 1942		777,687,809.10	30,593,690.65	627,696,424.67	1,885,900.00	1,437,863,824.42
May 1942		804,624,425.91	32,124,721.82	654,639,946.36	22,453,620.00	1,513,842,714.09
June 1942		845,582,380.71	32,664,461.52	648,686,734.19	31,287,800.00	1,558,221,376.42

STATISTICS OF FOREIGN CURRENCY FIXED SAVINGS DEPOSITS IN CENTRAL
BANK OF CHINA, BANK OF CHINA, BANK OF COMMUNICATIONS
AND FARMERS' BANK OF CHINA
(October, 1941—end of August, 1942)

	US\$		£		TOTAL	
	Original US Deposits	Deposit in NC Equivalents	Original US Deposits	Deposit in NC Equivalents	US\$	£
1941						
October	9,712.88	66,448.43	14,909 1/2	76,218 5/4	76,161.31	91,127 6/6
November	9,663.13	66,448.43	14,909 1/2	76,218 5/4	76,111.56	91,127 6/6
December	9,663.13	68,760.93	15,292 -9	76,218 5/4	78,424.06	91,510 6/1
1942						
January	9,663.13	68,760.93	15,392 -9	76,218 5/4	78,424.06	91,610 6/1
February	7,663.13	68,760.93	14,589 6/9	76,218 5/4	76,424.06	90,807 12/1
March	1,541.40	68,760.93	14,454 4/5	76,218 5/4	70,302.33	90,672 9/9
April	1,541.40	68,760.93	14,267 12/10	76,218 5/4	70,302.33	90,485 18/2
May	1,544.40	68,760.93	14,267 12/10	76,218 5/4	70,302.33	90,485 18/2
June	1,541.40	68,760.93	14,267 12/10	76,218 5/4	70,302.33	90,485 18/2
July	1,541.40	68,760.93	14,267 12/10	76,218 5/4	70,302.33	90,485 18/2
August	1,541.40	68,760.93	14,267 12/10	76,218 5/4	70,302.33	90,485 18/2

TABLE FOR THE PAYMENT OF CAPITAL AND INTEREST OF CLASS A
THRIFT SAVINGS CERTIFICATES

Period	Capital Plus Accrued Interest	Face Value						
		\$5	\$10	\$50	\$100	\$500	\$1,000	\$10,000
6 months	8%	\$5.20	\$10.40	\$52.00	\$104.00	\$520.00	\$1,040.00	\$10,400.00
1 year	"	5.41	10.82	54.08	108.16	540.80	1,081.60	10,816.00
1 1/2 years	"	5.62	11.25	56.24	112.49	562.43	1,124.86	11,248.64
2 1/2 years	"	5.85	11.70	58.49	116.99	584.93	1,169.86	11,698.59
3 1/2 years	"	6.08	12.17	60.83	121.67	608.33	1,216.65	12,166.53
4 1/2 years	"	6.33	12.65	63.27	126.53	632.66	1,265.32	12,653.19
5 1/2 years	"	6.58	13.16	65.80	131.59	657.97	1,315.93	13,159.32
6 1/2 years	"	6.84	13.69	68.43	136.86	684.28	1,368.57	13,685.69
7 1/2 years	"	7.12	14.23	71.17	142.33	711.66	1,423.31	14,233.12
8 1/2 years	"	7.41	14.81	74.05	148.10	740.50	1,481.00	14,810.00
9 1/2 years	11%	8.54	17.08	85.41	170.81	854.07	1,708.14	17,081.44
10 1/2 years	"	9.01	18.02	90.10	180.21	901.05	1,802.09	18,020.92
11 1/2 years	"	9.51	19.01	95.06	190.12	950.60	1,901.21	19,012.07
12 1/2 years	"	10.03	20.06	100.29	200.58	1,002.89	2,005.77	20,057.74
13 1/2 years	"	10.58	21.16	105.80	211.61	1,058.05	2,116.09	21,160.91
14 1/2 years	"	11.16	22.32	111.62	223.25	1,116.24	2,232.48	22,324.76
15 1/2 years	"	11.78	23.55	117.76	235.53	1,177.63	2,355.26	23,552.63
16 1/2 years	"	12.42	24.85	124.24	248.48	1,242.40	2,484.80	24,848.02
17 1/2 years	"	13.11	26.21	131.07	262.15	1,310.73	2,621.47	26,214.66
18 1/2 years	"	13.83	27.66	138.28	276.56	1,382.82	2,765.65	27,656.47
19 1/2 years	"	14.58	29.16	145.90	291.80	1,459.00	2,918.00	29,180.00
20 1/2 years	12%	16.04	32.07	160.36	320.71	1,603.57	3,207.14	32,071.35

TABLE OF BUYING RATES OF CLASS B THRIFT SAVINGS CERTIFICATES

Period	Buying Rate	Face Value						
		\$5	\$10	\$50	\$100	\$500	\$1,000	\$10,000
1 year	10 1/2%	\$4.54	\$9.07	\$45.35	\$90.70	\$453.51	\$907.03	\$9,070.29
2 years	"	4.11	8.23	41.14	82.27	411.35	822.70	8,227.02
3 ..	10 1/2%	3.68	7.36	36.78	73.56	367.82	735.64	7,356.43
4 ..	"	3.32	6.64	33.20	66.41	332.04	664.08	6,640.84
5 ..	11 1/2%	2.93	5.85	29.27	58.54	292.72	585.43	5,854.31
6 ..	"	2.63	5.26	26.30	52.60	262.99	525.98	5,259.82
7 ..	"	2.36	4.73	23.63	47.26	236.28	472.57	4,725.69
8 ..	11 1/2%	2.04	4.09	20.44	40.88	204.40	408.80	4,088.03
9 ..	"	1.83	3.66	18.28	36.56	182.78	365.56	3,655.55
10 ..	12 1/2%	1.56	3.12	15.59	31.18	155.90	311.80	3,118.05

CLASS B THRIFT SAVINGS CERTIFICATES INTEREST TABLE

Interest Due Kinds Period	\$5	\$10	\$50	\$100	\$500	\$1,000	\$10,000
1 year	\$.15	\$.29	\$ 1.46	\$ 2.92	\$ 14.60	\$ 29.20	\$ 291.96
2 years	.25	.49	2.45	4.91	24.54	49.07	490.71
3 ..	.37	.74	3.72	7.43	37.16	74.32	743.18
4 ..	.50	1.00	5.01	10.03	50.15	100.30	1,002.97
5 ..	.77	1.54	7.70	15.40	76.98	153.96	1,539.61
6 ..	.77	1.54	7.69	15.38	76.88	153.76	1,537.63
7 ..	.91	1.82	9.08	18.16	90.80	181.60	1,815.98
8 ..	1.28	2.57	12.84	25.68	128.40	256.81	2,568.09
9 ..	1.47	2.93	14.66	29.32	146.62	293.23	2,932.35
10 ..	1.98	3.95	19.75	39.51	197.53	395.07	3,950.69

CHAPTER XIV

FOREIGN TRADE

Perhaps no other aspect of China's national economy has been so hard hit by the war as her foreign trade. Some of the ill effects of the extension of the war and blockade on China's wartime international commerce include: the dislocation of trade between foreign nations and China, the Japanese domination of trade in occupied areas, the increasing difficulties of China's trade routes and the changes in China's trade administration. Despite these handicaps, the Chinese Government has done its best to carry out its wartime foreign trade policy. At the same time, efforts have been made to promote domestic trade.

China's wartime foreign trade policy was embodied in Articles XXI to XXIV of the *Program of Armed Resistance and National Reconstruction* which provided for the government control of foreign exchange and trade, readjustment of industry and commerce and improvement of communications and transportation. In July, 1937, the Government adopted plans for increasing production and regulating trade. Special reference was made to the nation's trade policy. In the export trade, it was stipulated that the Government would form a trade readjustment commission for administering and rendering assistance to all national and private export businesses, whether they were operated by Chinese or foreigners. The stipulations also said that daily necessities would be permitted to be shipped in as usual or with reduced customs tariffs. Secondly, necessities would be imported at the same rates as before while tariffs on the inflow of luxuries would be raised. The Ministry of Finance, in cooperation with the Ministry of Foreign Affairs, was ordered to carry out the program. Thus, China's wartime trade policy, even after the outbreak of the Pacific War, has been directed to the dual purpose of promoting exports and at the same time of satisfying her own needs at home.

ANALYSIS OF IMPORTS AND EXPORTS

The Chinese Customs reports of the wartime foreign trade of China cover not only Free China but also the ports

of entry under enemy domination. Such anomalous situation has caused various unusual phenomena, for example, such things as coal and foodstuffs are both exported and imported. Similarly, the depreciation of the Chinese legal tender has caused values of exported commodities to skyrocket whereas actual quantities exported decreased.

The value of China's import and export trade in 1940 and 1941 registered big increases over the first three years of the war. Her import trade in 1940 and 1941, amounting to more than \$2,000,000,000 annually, more than doubled the preceding period. Even more phenomenal gains were recorded in her exports, for between 1937 and 1939, China's sales abroad ranged between \$760,000,000 and \$1,000,000,000 annually. In 1940 her exports were valued at \$1,976,000,000, representing a 2.8 times gain over 1936. In 1941 the export figures rose to \$2,570,000,000, showing a 3.8 times increase over 1936. Since 1940, between 85 and 90 per cent of China's entire foreign trade has been through ports under enemy domination.

In 1940, the total value of exports was \$1,976,070,000, of which \$247,350,000 or 12.52 per cent were registered by Free China ports. The ports in Japanese occupied areas recorded \$1,728,710,000, or 87.48 per cent of the total export trade that year.

In 1940, the total value of China's imports was \$2,044,360,000, of which \$264,670,000 or 12.95 per cent was registered by Free China ports. The ports under Japanese domination recorded \$1,779,690,000, or 87.05 per cent of the total.

The United States, Japan, Great Britain, Hongkong, Germany and British India used to play an important role in China's foreign trade. After the outbreak of the war in 1937 and the Japanese occupation of coastal provinces, commerce between China and foreign countries was greatly affected. Only Japan, by virtue of her military activities, was able to benefit from the dislocation of China's trade. Naturally in imports to China, Japan stood first. America took second

place, Hongkong, mainly a transit center, was third, followed by India, Indo-China, Dutch East Indies, Australia, Great Britain, Germany and Canada. In China's exports, Hongkong ranked first as most of Free China's exports were re-shipped from that Crown Colony to other countries. The United States was second, followed by Japan. In the exports to Japan from the occupied areas, such staple goods as rice and salt were not included in the customs figures. Dutch East Indies took fourth place, with British India fifth, followed by Indo-China, Great Britain and Malaya. The British Empire led in trade with China. America was second and the Japanese Empire third. The French Empire and the Dutch Empire took fourth and fifth places. These five shared between 80 and 90 per cent of China's total foreign trade.

Chief exports during wartime have been silk, cotton, cotton yarn, bristles, coal, wood oil, tea and mineral products.

Foodstuffs in the form of rice, wheat flour and wheat have constituted the chief imports of China during the war. Next in importance come cotton, cotton yarn and cotton piecegoods, which are followed by sugar, paper, machinery, vehicles, coal and gasoline.

Silk.—The export of silk in the first three years of the war suffered sharp decreases. Since 1939, the value of silk export has registered gains following the operation by the Japanese of silk filatures in Chekiang and Kiangsu as a monopoly of the so-called Central China Silk Company. The export of raw silk from China was mainly directed to Hongkong, the United States, France, Japan, Italy and French Indo-China. Native yellow silk from Szechwan and Sikang was also exported to India and Burma in the last few years.

Cotton, Cotton Yarn and Cotton Goods.—Prior to the war, China's import of cotton was not considerable. It began to show increases after 1939. In 1940, 2,400,000 quintals of cotton valued at \$260,000,000 were imported, while in 1941, the import was 1,600,000 quintals worth \$240,000,000. The increases in the cotton imports in 1940 and 1941, were due to the flood in the cotton-producing districts of Hopei and increasing demands by Japanese and Chinese mills in Shanghai. Exports of cotton in the first three years of the war ranged from 300,000 to 1,000,000 quintals, but they diminished

in 1940 to 30,000 quintals, valued at \$8,000,000. In 1941, 300,000 quintals valued at \$75,000,000 were exported. The decrease was due to the increasing demand for cotton by cotton mills operating in occupied areas. The importation of cotton yarn and cotton piecegoods was fairly steady in the first three years of the war. In 1940, importation of cotton yarn was valued at \$40,000,000, which was increased to \$81,000,000 in 1941. In 1940, piecegoods worth \$58,000,000 were imported. Most of the cotton yarn and piecegoods were imported from Japan and Hongkong. Due to the shortage of foreign supply after the outbreak of the war in Europe, Japanese cotton yarn and piecegoods were dumped on the Chinese market. Imports from Hongkong to interior China included Japanese goods manufactured in Chinese mills.

After 1938, export of cotton yarn was increased to 100,000 quintals, valued at \$22,900,000. The increase was largely due to the resumption of operations of cotton mills in war and occupied areas. Most of the exports from occupied China were to Hongkong, South Seas, India and other places. The portion shipped to Hongkong was largely re-routed to interior China.

Bristles.—China's export of bristles was low before the war. Due to the increasing industrial demand in the last few years, more bristles have been exported. In 1940 the value of bristles exported was \$90,000,000, which was increased to \$120,000,000 in 1941. America was the leading customer of Chinese bristles, followed by Great Britain, Germany and Hongkong.

Coal.—The export of Chinese coal during the war has been on the upward trend both in quantity and in value. Quantitatively, the export has jumped from 1,000,000 tons to 4,800,000 tons, while the value was correspondingly increased from \$10,000,000 to \$100,000,000. That coal was still exported when China was experiencing a shortage at home was due to the fact that the coal supply in North China was mainly shipped by the enemy to Japan and Kwantung Leased Territory. On the other hand, occupied China's own needs had to be met by importation of \$50,000,000 worth from India and French Indo-China in 1940 and 1941.

Wood Oil.—In 1936, China exported 800,000 quintals of wood oil. In 1937, 1,000,000 quintals valued at \$89,840,000

were exported. In 1938, due to transportation difficulties, wood oil shipments dwindled. In 1940 and 1941, the export was decreased to 200,000 quintals. Of the \$56,350,000 worth of wood oil exported in 1940, \$32,370,000 or 51 per cent, went from Free China.

Mineral Products.—Tungsten, antimony, and tin are now China's chief mineral products. China's pre-war annual export of tin was over 100,000 quintals valued at \$40,000,000. In 1940 and 1941, the volume decreased to 50,000 to 60,000 quintals, but the value was increased to \$90,000,000. Before the war only little tungsten was exported. The annual export since the war began amounted to over 100,000 quintals valued at \$40,000,000 to \$50,000,000.

Tea.—In the first period of the war, China's annual export of tea was between 300,000 and 400,000 quintals, valued at \$30,000,000. In 1940, 340,000 quintals brought in \$104,000,000. But in 1941, owing to the enemy blockade of the sea-coast, exports of tea decreased to \$40,000,000. Most of the tea exported went to Great Britain, the United States, the U.S.S.R., and North Africa. Exports to the U.S.S.R. mainly passed through Hongkong for transshipment.

Rice, Wheat Flour, Wheat.—The importation of rice, wheat flour and wheat was increased from \$50,000,000 in 1937 to \$500,000,000 in 1941. China's importation of rice in 1940 was 6,000,000 quintals valued at \$170,000,000. The reason for the large imports in food-stuffs was that the Japanese had purchased all rice stock in coastal cities like Shanghai, Peiping and Tientsin for army rations. The importation of wheat flour correspondingly increased from 3,000,000 quintals in 1940 to 4,000,000 quintals in 1941. The 1941 wheat flour import was valued at \$210,000,000. Occupied China imported rice mainly from French Indo-China and Thailand and wheat from Australia, the United States and Japan.

Gasoline, Kerosene, Diesel Oil.—Although the value of importation of gasoline, kerosene and Diesel oil did not change substantially in the last few years, the quantity has decreased considerably. The average value of gasoline importation has been between \$30,000,000 and \$40,000,000, that of kerosene between \$30,000,000 and \$50,000,000 and that of Diesel oil around \$15,000,000. The

quantity, however, has been decreased from 50,000,000 to 20,000,000 gallons in the case of gasoline. That of kerosene has also been reduced from 110,000,000 to 30,000,000 gallons, while that of Diesel oil from 250,000 to 150,000 gallons. Figures for the importation of gasoline into the whole of China did not include the amount smuggled into Free China. The decrease in the kerosene import was mainly due to the control of import of that commodity in North China and transportation difficulties in interior China.

Other Commodities.—Sugar, paper, iron, steel, machinery, coal, and vehicles were the other leading import items. Most of them were imported through Shanghai and Tientsin. The importation of sugar in 1940 and 1941 was valued at from \$70,000,000 to \$80,000,000. Sugar was mainly imported from Hongkong, Dutch East Indies, Japan and Formosa. Between 1940 and 1941 the value of machinery imported was increased from \$50,000,000 to \$70,000,000; and paper from \$40,000,000 to \$80,000,000. Free China imported 3,630,000 customs gold units worth of restricted articles such as tobacco, wine and silk in 1939. The import of such goods was worth 2,080,000 C.G.U. in 1940.

EXPORT CONTROL BEFORE THE PACIFIC WAR

China's export trade, ever since the Sino-Japanese war began, has been subject, in the main, to state control. The Chinese Government appoints state organizations as sole agents for the purchase and distribution of goods required to fulfil barter obligations. Other exports are subject to reduction or exemption from export customs tariff, provided the foreign exchange receipts are sold to the government banks. The Government enforces a strict ban on the exportation of articles which are needed at home.

Beginning in July, 1939, the Government placed mineral products, tea, wood oil and bristles under state control. With the exception of mineral products which were to be administered by the National Resources Commission of the Ministry of Economic Affairs, the handling of all other articles was entrusted to the Foreign Trade Commission of the Ministry of Finance.

Control of wood oil did not begin until 1939, following the conclusion of an American loan to China which was to be repaid with the proceeds of sales

of wood oil exported to the United States. The Foreign Trade Commission was ordered to make purchases from producers and to ship the stock out with necessary permits from the Ministry of Finance.

With the reorganization of the Foreign Trade Commission in June, 1940, business operations pertaining to the purchase and marketing of wood oil was shifted to its subsidiary organ, the Foo Shing Trading Corporation, with the American distribution to be handled by the Universal Trading Corporation in New York. In October, 1940, the Ministry of Finance promulgated regulations centralizing the purchasing and shipping of wood oil by the Foo Shing Trading Corporation. The corporation was also given the right to fix wood oil prices in different places, with the approval of the Foreign Trade Commission, based upon the production cost, transportation charges and international market conditions. All dealers and cooperatives of wood oil are required to register with the corporation. Special shipping permits shall be obtained before wood oil can be shipped. Under the ruling, no firm or warehouse shall keep a stock of more than 15 quintals and no cracking plant more than 20 quintals of oil for a period exceeding two months. Otherwise, the corporation is to buy over the entire stock at the prevailing price. Dealers or firms not properly registered with the corporation are not allowed to keep any wood oil on hand. Similar restrictions are imposed on hoarding of wood oil seeds and seedlings.

Control of bristles, announced in September, 1939, was first entrusted to the Central Trust for collection and transportation. Beginning from February, 1940, the control was shifted to the Foreign Trade Commission. According to the revised regulations, dealers in bristles are required to register with the commission before they are allowed to collect. After processing, the bristles are to be sold to the Commission at fixed prices. In order to aid the producers of and dealers in bristles, the Commission gives technical and financial assistance for the purpose of increasing and improving the production. Measures against hoarding and illicit trading in bristles were also promulgated.

The regulations governing the export of Chinese tea, promulgated in June, 1938, were revised in March,

1939. The purchase of tea for export under the revised ruling is to be undertaken by the Foreign Trade Commission, while its production is to be handled by special provincial organs. The prices the Commission pays for the stock are fixed by representatives of the Commission, provincial organs and tea merchants on the basis of the average prices of different grades of tea in the previous three years and of the cost of production and quality of the product for the current year. Tea merchants and cooperatives, the operation of which must conform with the laws and regulations enforced in the various provinces, may apply for loans from the Government. In granting such credits, the Commission finances 80 per cent, and the provincial organs 20 per cent, of the total.

The purchase and sale of tungsten, antimony, tin, quicksilver, bismuth and molybdenum were entrusted to the National Resources Commission early in 1938. The Ministry of Economic Affairs was authorized to include other minerals whenever necessary. All these metals, after refining and purifying, must be sold to the commission. Free trading is not allowed. Merchants must obtain transportation and export licenses from the commission or its authorized agents before they can ship the minerals anywhere in or out of the country. The resources commission promulgated different sets of regulations for the administration of tungsten, antimony, tin, mercury and copper and also decided from time to time amounts of minerals to be exported.

Control of China's exports was accompanied by similar steps to administer her foreign exchange. Following the establishment of the bogus "Federated Reserve Bank of North China" in Peiping, on March 10, 1938, the Chinese Government, on March 14, promulgated regulations for the control of foreign exchange on imports. In the next month, the Ministry of Finance authorized the Foreign Trade Commission to enforce restrictions on foreign exchange realized from exports. Detailed regulations for the examination of export goods, for the sale of foreign exchange proceeds realized from exports and for the transmission of parcel post were promulgated. These regulations, which were first applied in Hankow and Changsha, were later enforced nationwide. Export articles referred to in the regulations numbered 24. They were: wood oil, bristles, ox

hides, tea, egg products, ores, goatskins, medicinal substances (rhubarb, cassia, lignea, ligusticum acutilobum) nutgalls, wool, silk, plaited hats, hair, ramie, animal intestines, cotton products, peanuts, sesamum, tobacco, timber, bamboo, apricot seed, ducks' feathers, hides. Merchants exporting the above-mentioned articles were required to sell 80 per cent of the foreign exchange realized therefrom to the Bank of China and Bank of Communications for the equivalent in legal tender at the official rates of 1—2½d., US \$29.75 or HK \$104.50.

After the fall of Hankow and Canton, the Ministry of Finance, in January, 1939, reduced the number of such controlled export articles from 24 to 13. They were: wood oil, bristles, hides, furs, tea, mineral products, nutgalls, medicinal substances, wool, silk, ramie, animal intestines and feathers. In June, 1939, as a result of the enemy plot to absorb Chinese currency, the foreign exchange rate slumped to 6½d. The Ministry, on July 1, that year, promulgated regulations providing ways of paying back the differences in the official exchange rates to exporters. Meanwhile, the official rates of the Bank of China and the Bank of Communications were changed to 7d., US \$13½, or HK \$214.50. After August, 1939, the rates were further lowered to 4d. The Chinese Government, on March 15, 1940, changed the export articles, the proceeds for which had to be sold to the Government, to the following: egg products, feathers, animal intestines, hides, furs, nutgalls, medicinal substances (rhubarb, cassia lignea, ligusticum acutilobum and musk), oil and wax, seeds, tobacco, timber, silk, ramie and cotton products. On August 1, 1940, the Government fixed the exchange rates at US \$1.00 to NC \$7.50 and HK \$1.00 to NC \$3.33. In order to simplify the measures of control of foreign exchange from exports, the Ministry, on September 1, 1941, promulgated twenty articles governing the entire procedure, thereby abolishing all previous announcements, rulings and revisions relating to this matter. Merchants were required to sell their foreign exchange to the Government realized from exports of egg products, feathers, animal intestines, hides, furs, dyestuffs, medicinal substances, oil and wax, seeds, timber, silk and hemp. With the establishment of the Commission for the Control of Foreign Assets in September, 1941, the administration of

export foreign exchange was transferred to the new organization.

During the war the Government has also banned the export of certain articles unless with special permits from the Ministry of Finance. These articles are: gold, silver and manufactures thereof, legal tender and foreign currency, iron, steel and all metals and manufactures thereof, rice, grain, wheat, wheat flour and other manufactures thereof, beans, cotton and cotton waste, cotton yarn, coins and copper cash, table salt, documentary data and records, antiques and curios.

The Chinese Government, in 1938, promulgated regulations prohibiting the shipment of articles listed by the Ministry of Economic Affairs as of possible use to the enemy. The geographical limit of the ban was subject to change according to the war situation. The number of prohibited articles was also increased or decreased from time to time whenever the Government deemed it necessary.

Perhaps the biggest task of the Foreign Trade Commission has been to fulfil barter obligations. Chinese wool, oil, tea, wool, and bristles have been mainly shipped to the U.S.S.R., the United States, and Great Britain. The annual production of wood oil in Free China is estimated at 1,400,000 quintals, wool 290,000 quintals, raw silk 20,000 quintals, tea 700,000 to 800,000 half-chests (weighing 30 kg. each). With a view to increasing their production, the Commission has under it a promotion commission for the production and marketing of agricultural exports. Its program, up to the outbreak of the Pacific War, was to raise the output of wood oil by 550,000 quintals, wool by 250,000 quintals, raw silk to a total of 23,000 quintals and tea by 580,000 chests, in a period of five years starting from 1942.

IMPORT CONTROL BEFORE THE PACIFIC WAR

Encouragement of the importation of machinery and other implements and restrictions on the importation of non-necessities are the main points of China's wartime import policy. This policy aims at meeting the war and industrial needs at home.

Since the war began, many articles have been banned from importation. On October 27, 1938, the National Government promulgated regulations banning

the importation of enemy goods. By "enemy goods" it was meant (1) goods from enemy country, or its colonies or controlled territories; (2) goods from factories or firms operated by enemy nationals outside of the areas mentioned in (1); or (3) goods from enemy-invested enterprises outside of the areas mentioned in (1). The names and trade marks of the articles listed in (1) and (2) were to be announced by the Ministry of Economic Affairs after making careful investigations, while those of articles in (3) were also to be decided by the same ministry. With the exception of rice, grain, cotton yarn and flour, all other enemy goods were banned from importation.

The ban also applies to goods from Liaoning, Kirin, Heilungkiang and Jehol, which have been under enemy occupation since 1931 and 1933. The forbidden articles under this category, as announced by the Ministry of Economic Affairs, are: leather goods, deer antlers, musk, ginseng, sea products, walnuts, fresh fruits, tobacco, wines, sugar, lumber, glass and glassware, canned goods, silk, rayon and manufactures thereof, cotton and woolen goods, knitted piecegoods, cosmetics, coal and coke, all kinds of clothing material, toys, bricks and tiles.

On July 1, 1939, the Ministry of Finance placed 168 import articles, later reduced to 165, on the prohibited list. They included rayon products, sea products, wines, tobacco, cosmetics, jewellery and other luxuries. Such goods could not be imported or transmitted through the Post Office without special permission from the Ministry of Finance.

In prohibiting the importation of these articles, the Chinese Government granted, on July 1, 1940, three months' grace to permit merchants to dispose of their stocks. All unsold nonessentials and luxuries after the grace were either confiscated or forcibly purchased by the Government.

Among the prohibited articles, gasoline, kerosene and sugar were later classified as importable articles if accompanied by special permits. China's prewar annual import of gasoline was 42,000,000 gallons valued at more than 10,000,000 customs gold units. Today she needs much more. In order to exercise control over gasoline supply, the Government established the Liquid Fuel Control Commission under the Executive Yuan. With the gradual loss of coastal communications as a

result of extended enemy blockade, the Government, on August 1, 1940, removed the ban on the importation of gasoline. The importation of kerosene amounting to 19,000,000 c.g.u. annually before the war started, was given similar treatment. The original 10 to 1 gasoline-kerosene ratio of importation later changed into 1 to 1 flat because of the acute industrial and communication demand for kerosene. Similarly, sugar may be imported.

The Ministry of Finance also forbade the importation of the following: canes containing knives, pistols, air guns, bullets for pistols and air guns, blueprints for manufacturing munitions, insectile agents, counterfeit banknotes, lotteries or other notes, prints of bogus money, prints and models of coins and machinery, pistol-like torchlight, handcuffs, propaganda material implying ideas for the recognition of bogus regimes, matches adulterated with yellow or white phosphorus, racing dogs and obscene literature.

The importation of the following requires special licenses issued by respective government organizations in charge: arms, munitions, explosives and gases by the Ministry of Military Affairs; aviation supplies by the Aeronautical Affairs Commission, explosives and dynamite by the Ministry of Military Affairs; radio equipment by the Ministry of Communications; narcotics by the National Institute of Health, syringes and hypodermic needles by local health authorities and signed or unsigned banknotes printed abroad by the Ministry of Finance.

The Ministry of Finance has under it a special committee for granting foreign exchange required by importers of articles that help in the nation's war and industrial effort. The importers buy approved amounts of foreign exchange at official rates after paying an equalization charge based on the differences between official and bank rates.

In accordance with the Government's policy of promoting production and commerce, a general reduction of import customs duties on iron, steel, metals, machinery, tools, instruments and communication supplies was effected. The tax-free list of military goods was extended to include first-aid and health supplies. In September, 1939, the Government ordered a two-thirds reduction of import duties on all items

not on the banned list. When Japan cut off China's outlet to the sea via Indo-China by invading the French colony in May, 1940, and when the Yunnan-Burma road was temporarily closed to China two months later, the Government lifted the ban on gasoline importation. Gasoline, together with its containers, was to be imported free into any part of Free China.

In 1941, the Ministry of Finance and the Ministry of Economic Affairs jointly revised the list of articles, the importation of which was to be encouraged. These articles include foodstuffs, cotton, cotton yarn, cotton piecegoods, iron, steel, metals, machinery and tools, communication and tele-communication supplies, cement, gasoline, Diesel oil, lubrication oil, medical supplies, chemical raw materials, insecticides, table salt, alcohol, radio engineering equipment, educational and cultural supplies. They are allowed to be shipped freely into the country irrespective of their places of origin or of their destinations anywhere in Free China.

FOREIGN TRADE COMMISSION

In October, 1937, two months after the outbreak of hostilities at Shanghai, a Trade Readjustment Commission was set up under the National Military Council with a limited scope. Its primary objects were to render financial aid to, and to provide transport facilities for, the Chinese exporters who found it difficult to carry on their business on account of the military operations in the vicinities of Shanghai and the enemy's blockade of the Yangtze. As the conflict developed, it was realized that temporary measures for trade adjustments were inadequate. More positive and constructive actions were needed in the form of state control of the country's external trade. In February, 1938, the Trade Readjustment Commission was reorganized and was placed under the Ministry of Finance under a new name: the Foreign Trade Commission.

The Commission has five departments, namely, the general affairs department, the finance department, the export department, the import department and the research department. The work of the Commission in Chungking and its branch offices in various provinces is largely administrative; the purchase, the transportation and the export of the commodities under control

are handled by its two trading establishments: the Foo Shing Trading Corporation and the China National Tea Corporation.

The Foo Shing Trading Corporation was formally established in April, 1939, to discharge its obligations set forth in the Foo Shing-Universal contract of December 30, 1938—to purchase and export wood oil to America in payment of the principal and interest due on the loan under the Export-Import Bank-Universal Agreement of February 8, 1939. The Corporation has its head office in Chungking and branch offices in cities of commercial importance. Despite immense difficulties in transportation, a sufficient quantity of wood oil was purchased and shipped to America in accordance with the terms of the credit agreement. The disposal of a stock of over ten thousand tons by the Universal Trading Corporation in New York in 1942 resulted in the fulfilment of the said agreement almost two years in advance of the date of liquidation.

The outbreak of the Pacific War ushered in many obstacles in the way of China's foreign trade. Meanwhile, the shortage of gasoline has caused many factories to start the process of abstracting gasoline from wood oil and has thus created an active demand for the material. The Government, realizing the wisdom of turning the Chinese lamp oil into fuel for motor vehicles, has set about systematically to stabilize and develop the industry. It is estimated that the quantity of wood oil required for this new industry far exceeds what was exported in the preceding years.

The scope of the Foo Shing Trading Corporation was appreciably extended in 1942 by the incorporation into its system of three of the Commission's subsidiary organizations, namely, the Fu Hua Trading Company, the Southeast Transportation Office, and the Northwest Transportation Office. This development indicates the tendency to a more rational realignment of trading bodies. The Corporation is now vested with the exclusive right to purchase and export wood oil and bristles and its sphere of operations covers also raw silk, sheep wool, skins and hides and some other products such as furs and *Fochia*.

Though China's bristle market has been curtailed by the cutting off of her maritime outlets, purchases have been going on and qualitative improvement

has been made. The supplies now available to the Foo Shing Trading Corporation are adequate to meet the immediate demands of Allied countries.

The impact of the present war on China's foreign trade may be gauged by the loss of the important silk-producing districts along the lower Yangtze. However, as silk is now urgently required by the Allies for the making of parachutes, and China is the most important source of supply at the moment, the Foreign Trade Commission mapped out measures, which, as a cohesive part of the national mobilization plan, will bring this commodity under control for enhancing the Allied war effort. The Commission has already taken steps to restrict civilian consumption in order to release the maximum quantity of available supplies for military purposes.

The present main supply of wool comes from the Northwestern provinces. Since a great part of the wool available to the Foo Shing Trading Corporation has had to be shipped to the U.S.S.R. to discharge China's obligation in accordance with the terms of the Sino-Soviet barter agreement, only a small portion is left to meet home requirements. The Commission has also set about to improve the quality of wool by erecting washing plants and giving financial aid to the organizations participating in the expansion work.

The China National Tea Corporation was incorporated into the Commission in January, 1940. It has its head office in Chungking, with branch offices and tea factories in several tea producing districts. It acts as the sole purchaser of tea for export. Numerous improvements have been introduced by the Commission and the Corporation in the production of tea. Financial and technical aid has been made available to the growers, and under government control, the marketing of tea has been placed on a rational basis. Progress has also been made in the standardization of different grades of tea and the establishment of direct contact in foreign markets.

Apart from formulating plans for coordinating the production, transportation and marketing of China's principal exports, the Commission has also restrictive functions, such as the enforcement of the regulations governing the prohibition and restriction of certain imports and exports, the restriction

of domestic trading in commodities under state control, and the ban on exports to Japan and territories under her jurisdiction or military occupation.

In effect, the Commission has two separate tasks. The first is to carry out, through its trading establishments, the barter agreements for the Government by effecting deliveries of agricultural products in payment of foreign loans and credits according to the repayment schedules. Primarily for the purpose of covering these barter requirements, control systems have been instituted by the Commission for three important agricultural products—wood oil, bristles and tea; they vary slightly according to the nature of the individual commodity, but the scope and objective are the same throughout. The second is to promote trade with friendly nations by various ways and means, including financial and other aids to bona-fide exporters, the stimulation of the production and improvement in quality of principal exports.

On the promotion side, the Commission has established research institutes for improving wood oil, tea and silk. A wool laboratory has been set up in the Northwest Wool Improvement Bureau of the Ministry of Agriculture and Forestry.

Apart from the increase in production, there are two other points that form part of a vigorous export policy. The one is reduction in the cost of production. The other is the establishment of direct contact with consumers abroad. The second step represents a break from the inertia of depending on foreign firms operating in China as the intermediary between the Chinese producers and exporters and foreign consumers. The successful operation of the Universal Trading Corporation in New York in marketing wood oil in the United States is a step in this direction. Such direct trading has proved to be beneficial to both the Chinese producers and the consumers in America. Similar arrangements are being extended to tea and bristles.

The main work of the Commission in the four years prior to the outbreak of the Pacific War may be grouped as follows:—(1) to collect and purchase exportable agricultural products; (2) to implement barter and credit agreements concluded with friendly nations; (3) to handle the purchase of war and other

essential supplies; (4) to enforce the regulations governing prohibition and restriction of imports; (5) to manage overland transportation of exports of its own in the southeast and the northwest; (6) to control the foreign exchange realized from exports; and (7) to promote the increase of production of exportable agricultural products.

(1) Collection and purchase of exportable agricultural products.—In 1938 the Commission began to engage in the purchase and storing of a certain quantity of exportable commodities, the outflow of which had been halted by wartime exigencies. Later, a number of specified agricultural products to be purchased was announced. Purchases were first made by branch offices of the Commission in various producing and marketing centers, but the work was later transferred to affiliated companies.

(2) Implementation of barter and credit agreements concluded with friendly nations.—One of the outstanding tasks of the Commission is to deliver agricultural products to the U.S.A., the U.S.S.R. and the United Kingdom in payment of the principal and interest due according to the repayment schedules of the different loan agreements.

(3) The purchase of war and other essential supplies.—The Commission also acts as an agent for the Government to purchase specific kinds of materials and equipment with the credits extended by friendly nations. The purchases are of a wide variety, including military equipment, gasoline, motor vehicles, equipment and materials for industrial establishments and others.

(4) The enforcement of the regulations governing the prohibition and restriction of imports.—Since the incorporation into the Commission of the Natural Resources Department of the Ministry of Finance in June, 1940, the Commission has also been participating in the work of import control. According to the regulations governing the prohibition and restriction of imports promulgated by the Ministry of Finance, the import of luxuries and non-essentials is either prohibited or strictly restricted. For certain special materials for which no Chinese substitutes are at present available, the regulations provide for their importation after application to designated government organs, including the Commission, for special permits. Between July, 1939, and October, 1941, the total value of specially permitted

imports amounted to approximately NC \$180,000,000 of which gasoline and kerosene were the leading commodities.

(5) The management of southeast and northwest overland transportation.—The Commission established the Southeast and the Northwest Transportation Offices in order to expedite required deliveries. Owing to the spread of the war and the tightened enemy blockade, the transportation offices encountered all sorts of difficulties. The Southeast Transportation Office, for instance, was compelled to resort to all modes of transportation, modern as well as primitive, such as motor trucks, junks, carts and human carriers. In times of emergency the office staff had to evacuate the stocks of commodities to places of safety. The Northwest Transportation Office was established late in 1941. It has more than 1,000 rubber-tired carts at its disposal and expects to enlarge its transportation capacity before long.

(6) The control of foreign exchange.—Originally there were 13 categories of export commodities (apart from wood, oil, tea and bristles) subject to exchange control, whereby exporters were required to surrender to the Government a certain percentage of the exchange proceeds from their sales at the official rate of exchange, and the Commission was entrusted with the control of such exchange until October 1, 1941 when it was turned over to the Commission for the Control of Foreign Assets under the Executive Yuan. In the past three years, the Foreign Trade Commission acquired from various marketing and exporting centers a considerable amount of foreign exchange.

(7) The promotion of the increase of production of agricultural products.—The Commission was entrusted with the task of increasing the production of agricultural products in August, 1940. During the present year, it has four projects: wood oil, wool, silk and tea. Subsidies have been granted to a number of agricultural and scientific organizations for work on certain technical problems, the solution of which will likely contribute to the increase of production of these products. Besides, the Commission has established an institute for research in wood oil, one for silk and another for tea.

The wood oil producing districts are all intact and the regions producing animal products are safe and secure.

Although the producing centers of silk have largely fallen into enemy hands or are under Japanese control, Szechwan has great possibilities as a new silk center.

TRADE POLICY AFTER THE PACIFIC WAR

China's foreign trade policy after the outbreak of the Pacific War has been one of restrained control and renewed optimism. Immediately after December 8, 1941, the nation's trade horizon looked very depressing. The subsequent months, however, saw the inauguration of a new international air freight service and the reinforcement of other means of transportation. The first six months of 1942 were mainly devoted to re-adjusting the nation's trade relations with the new world situation. The second half of the year definitely showed signs of improvement.

While efforts were made to encourage the export of light articles by the limited available transportation means, the concern of the authorities in 1942 was the promotion of domestic trade. For more valuable goods such as raw silk and bristles, China has maintained a more or less steady supply to the Allied countries. Beginning from the end of 1942, Chinese tea has been again shipped to foreign countries, principally to the United States and the U.S.S.R. The Government encourages the merchants to participate in domestic commerce as long as it is consistent with the national wartime economic policy.

EXPORTABLE AGRICULTURAL AND MINERAL PRODUCTS

(1) *Wood Oil*.—An effect of the Pacific War on China's foreign trade was the waiving of the government control measures over the wood oil trade. The new regulations removed restrictions on the transportation, purchase and storing of wood oil in the country. Merchants may also apply to the Foo Shing Trading Corporation for export licenses to areas not under enemy occupation.

Domestically, wood oil has become a chief industrial fuel and ingredient. In March, 1942, the Transportation Control Administration of the National Military Council was put in charge of cracking wood oil into liquid fuel. Oil cracking plants were established at key transportation points to abstract liquid fuel from this product to meet urgent needs.

For domestic consumption of wood oil, the Foreign Trade Commission divides the nation into a number of control districts, according to production, marketing and distribution of the product. The new ruling requires any firm, plant or cooperative using more than 100 quintals of wood oil a year to register with the Foreign Trade Commission. For all public and private plants engaged in cracking wood oil into gasoline the Commission requires certificates from the Ministry of Economic Affairs and the Transportation Control Administration before they can apply for wood oil on a monthly basis. There are special provisions for shipping wood oil from the control areas and from Free China to or near occupied areas. Through years of promotion, interior China's wood oil production has seen a big increase. The estimated production for the country is 1,400,000 quintals a year, of which 450,000 quintals are produced in Szechwan.

Until the autumn of 1931 the outflow of soya beans, bean oil and bean cake from the Three Northeastern provinces constituted in certain years the largest single group of Chinese commodities shipped abroad. Since 1932, with the Japanese occupation of these provinces, wood oil has steadily gained importance in China's foreign trade and has taken the place of soya beans as the leading export of the nation.

Chinese wood oil, also known as *tung* oil, is derived from trees of the genus Euphorbiaceae. Two principal species are found in China: (1) the *Aleurites Fordii*, or *Tung Yu-shu*; (2) the *Aleurites Montana*, or *Mu Yu-shu*. They abound in the Yangtze valley, particularly in the regions of the gorges and neighboring hilly country, up to an altitude of 800 meters. The tree is most ornamental in flower and foliage. It is a fast growing tree, seldom exceeding 25 feet in height, has many branches and is flat-topped. It begins to bear seeds in its third or fourth year and declines rapidly when about twenty years old. Szechwan and Hunan are the largest producers of wood oil in China.

The most valuable product from the *tung* tree, however, is the wood oil which is expressed from the seeds. In China the oil is used in preserving, polishing and water-proofing wood; also in the making of cloth, umbrella paper and bamboo netting water-proof; as well as an ingredient of lacquers and paints.

Sometimes it is used as lamp oil. Medicinally wood oil is used in China in the treatment of boils, ulcers, swellings and burns.

Over fifty per cent of China's wood oil is exported. In foreign countries wood oil is widely used as a substitute for linseed oil, mainly in the manufacture of enamels, varnishes, paints, etc. It is also employed in making rubber substitutes and in the manufacture of linoleum. The cake, after the oil is extracted, is used as a fertilizer. It also is supposed to be an effective insecticide and as such it is capable of destroying the insects which infest the roots of plants.

The oil extracted from the seeds by native presses was generally turbid and high in acidity, containing an excessive percentage of impurities and moisture. In order to circumvent these drawbacks the China Vegetable Oil Corporation in 1936 introduced machine extraction of wood oil by modern expellers. The oil produced by the new method is pale and clear, and far better in quality than the oil obtained from the crude wooden presses.

Wood oil is packed in bamboo crates woven with split bamboo lined with layers of water-proof paper for home consumption. For export the oil usually is repacked in wooden or iron barrels.

(2) *Tea*.—Since the outbreak of the Pacific War, tea transportation is no

longer restricted and the sale of tea in the border areas is being emphasized. The requirement for paying an equalization charge for domestic consumption and shipment of tea has been removed. Special factories for manufacturing concentrated, crystallized tea bricks have been set up so as to help reduce the volume in export transportation. Efforts have been made to use tea for medicinal and industrial purposes.

Between 1938 and 1940, the Chinese Government invested a big sum in the interior provinces to promote the tea industry, mainly for export purposes. Of the total amount, half went to tea factories and cooperatives in various provinces. The balance represented the Foreign Trade Commission's purchases of tea from the provinces by its branches and agents throughout Free China. This did not include transportation and miscellaneous expenses involved in the purchasing, delivery and marketing of tea for export.

Because of the war, the center of the tea export trade was transferred from Shanghai to Hongkong. The British Crown Colony became the chief transit market of tea either for cash export or for the fulfilment of barter agreements. The following statistics, taken from the Chinese Maritime Customs report, show the spectacular increase in China's export of tea to Hongkong during the last few years:

YEAR	(1) TOTAL EXPORT OF TEA		(2) TOTAL EXPORT OF TEA TO H. K.		Percentage between (2) and (1)
	Quintals	Value (NC \$)	Quintals	Value (NC \$)	
1936	372,843	30,661,711	29,493	1,669,479	5.45%
1937	406,572	30,787,274	41,705	2,777,392	9.22%
1938	416,246	33,054,085	239,099	17,672,659	53.47%
1939	225,578	30,385,831	118,241	18,190,761	59.96%
1940 (Jan.—June)	247,734	71,815,235	194,393	48,789,613	67.93%

YEAR		Black Tea	Green Tea	Brick Tea	Others	TOTAL
1935	{ Quintals ...	104,752	154,008	98,605	24,039	381,404
	{ Value (NC \$)	7,854,170	18,045,507	2,799,825	924,682	29,624,184
1936	{ Quintals ...	96,030	155,931	91,867	29,015	372,843
	{ Value (NC \$)	7,968,396	19,192,267	2,353,774	1,147,274	30,661,711
1937	{ Quintals ...	115,658	153,998	95,807	41,109	406,572
	{ Value (NC \$)	10,085,558	16,422,669	2,539,200	1,739,847	30,787,274
1938	{ Quintals ...	108,902	231,146	31,729	44,469	416,246
	{ Value (NC \$)	8,808,728	21,598,431	955,632	1,691,240	33,054,031
1939	{ Quintals ...	51,645	139,125	2,089	32,719	225,578
	{ Value (NC \$)	9,043,507	19,792,234	91,724	1,488,366	30,385,831
1940 Jan.—June	{ Quintals ...	40,053	183,614	7,302	7,765	247,734
	{ Value (NC \$)	13,373,699	56,457,631	852,412	1,131,493	71,815,235

(3) *Silk*.—Because of the urgent demand by the Allies and the domestic need for military use, the Chinese Government in March, 1941, nationalized the production and distribution of silk.

Despite transportation difficulties, Chinese silk was sent abroad during the first four and a half years of the war. The Burma road, the Northwestern highway and Hongkong were the main export routes for China. After Hongkong fell silk was exported by air to India. Export by the Northwestern highway has been uninterrupted.

Up to the end of 1942, interior China's silk production was centered in Szechwan. Experimental work is continuing in Sikang and Yunnan, consisting chiefly in the planting of mulberry trees and raising improved silkworms. Kwangtung produces only a small quantity of silk every year. Improved Szechwan silk equals in fineness that produced in Chekiang and Kiangsu filatures before the war started in 1937.

The following table shows the production of silkworm eggs and improved silk of the Szechwan Silk Corporation in the last few years:

Year	Silk	Silkworm Eggs
1938	2,390 piculs	530,000 sheets
1939	4,200 "	644,000 "
1940	3,500 "	710,000 "
1941	2,140 "	580,000 "

(4) *Bristles, Wool, Minerals*.—Detailed restrictions on the purchase and transportation of bristles were removed after December 8, 1941, although registration of the stocks and of their movements are required by the revised

ruling. It is estimated that by the end of 1940, over 5,000 quintals of hog bristles were exported directly through the Foreign Trade Commission in a year. Of the total, about 3,000 quintals were black bristles and 2,000 quintals white bristles. Szechwan leads all provinces in the production of hog bristles.

The domestic trade of wool is also expanding. Wool in Northwest China is being collected by the Foo Shing Trading Corporation to supply the Ministry of War and the Chinese Industrial Cooperatives for making blankets and uniforms. Part of it is still being shipped to the U.S.S.R. via the Northwestern highway.

The administration of mineral exports is entrusted to the National Resources Commission of the Ministry of Economic Affairs. Due to the rising cost of production and transportation, the Chinese Government often shipped out such metals as tungsten, mercury, antimony and tin at a financial loss. Nevertheless, in order to help supply vital Allied needs and maintain the livelihood of millions of people engaged in the production and transportation of the metals, China has continued to export minerals since the Pacific War began, despite the increased transportation difficulties. The production of tungsten and mercury registered increases in 1941 and in the first half of 1942, while that of antimony and tin recorded decreases. The quality of these metals has been standardized to meet foreign markets. Before December 8, 1941, most of the metals exported was shipped to fulfil barter agreements. Since then part of the metal exports goes by air to India and part to the U.S.S.R.

VALUE OF THE DIRECT FOREIGN TRADE OF EACH PORT, 1937-41

Port	1937		1938		1939		1940		1941	
	NC \$	%	NC \$	%	NC \$	%	NC \$	%	NC \$	%
Aigun	15,109,764	0.84	52,510,130	3.17	108,780,200	4.58	122,143,375	3.04	114,501,000	2.76
Harbin	212,933,718	11.86	409,926,037	24.74	440,180,193	18.55	810,985,365	20.17	710,536,000	17.97
Hunchun	4,327,959	0.24	2,043,153	0.12	6,317,240	0.27	10,895,697	0.27	1,627,000	0.05
Lungchingtsun	18,103,303	1.01	28,590,045	1.73	38,837,800	1.64	38,213,901	0.95	92,761,000	0.50
Antung	3,204,859	0.18	3,040,093	0.18	4,262,204	0.18	8,067,213	0.20	2,569,000	0.06
Dairen	107,851,675	6.01	78,403,886	4.73	177,007,030	7.46	322,216,290	8.01	270,570,000	6.70
Newchwang	3,437,347	0.19	2,831,795	0.17	1,425,937	0.06	5,307,328	0.13	11,487,000	0.29
Chinwangtao	28,846	0.001	7,541	0.001	25,387	0.01	57,295	0.001	85,000	0.001
Tientsin	313,804	0.02	60,096	0.004	12,264	0.001	3,557,144	0.09	16,550,000	0.44
Lungkow	147,739	0.01	722	0.000	76,620	0.003	4,611,580	0.11	.....	.....
Changsha	6,701,374	0.37	622,103	0.04	242,513	0.01	58,604	0.001	.....	.....
Yochow	576,842	0.03	3,120,303	0.19	121,843	0.005	.....	.....	.....	.....
Hankow	42,423,523	2.36	29,698	0.002	.....	.....	.....	.....	.....	.....
Kiukiang	5,494,147	0.31	.....	.....	.....	.....	.....	.....	.....	.....
Wuhu	6,002,037	0.34	.....	.....	.....	.....	.....	.....	.....	.....
Nanking	9,876,036	0.55	.....	.....	.....	.....	.....	.....	.....	.....
Chinkiang	7,167,048	0.40	497,934,788	30.05	1,182,849,304	49.84	2,131,119,516	53.91	2,246,092,000	51.82
Shanghai	915,483,131	51.00	.....	.....	.....	.....	.....	.....	.....	.....
Soochow	4,659,643	0.26	.....	.....	.....	.....	.....	.....	.....	.....
Hangchow	3,127,432	0.17	.....	.....	.....	.....	.....	.....	.....	.....
Ningpo	2,146,830	0.12	5,979,956	0.36	11,483,412	0.48	56,621,000	1.41	3,884,000	0.09
Wenchow	1,382,707	0.08	8,163,425	0.49	14,843,987	0.61	27,076,793	0.67	788,000	0.02
Santuo	177,469	0.01	328,555	0.02	5,882,655	0.24	2,718,125	0.07	32,255,000	0.77
Foochow	12,729,725	0.71	12,198,083	0.74	11,648,642	0.49	1,330,429	0.03	81,084,000	1.91
Amoy	17,622,481	0.98	12,332,727	0.74	13,829,615	0.57	28,462,565	0.71	96,458,000	2.43
Swatow	69,811,625	3.89	74,141,554	4.47	67,685,014	2.85	786,516	0.02	.....	.....
Canton	109,012,136	6.07	163,639,449	9.87	9,265,342	0.39	29,867,165	0.74	.....	.....
Kowloon	99,363,971	5.54	174,526,485	10.53	15,004,927	0.63	118,418,931	2.95	.....	.....
Lappa	7,714,155	0.43	10,708,957	0.65	46,710,274	1.97	27,157,612	0.68	.....	.....
Kongmoon	9,346,646	0.52	8,067,554	0.49	2,168,328	0.09	3,067	0.000	.....	.....
Samshui	1,342,873	0.08	600,126	0.04	.....	.....	.....	.....	.....	.....
Wuchow	84,081,771	1.90	27,471,124	1.66	221,357	0.01	4,222,313	0.11	1,907,000	0.05
Nanning	23,026	0.001	30,023	0.002	31,269	0.001	365	0.000	216,000	0.01
Luichow	3,693,596	0.21	9,497,306	0.57	34,251,090	1.44	151,949,753	3.78	322,806,000	8.14
Kiungchow	7,077,752	0.39	7,890,436	0.48	2,970,789	0.13	1,927,816	0.05	870,000	0.02
Pakhoi	2,725,818	0.15	3,320,539	0.20	19,307,016	0.81	102,316	0.003	973,000	0.02
Lungchow	379,489	0.02	698,081	0.04	94,041,624	3.96	16,080,502	0.40	1,815,000	0.05
Mengtsz	43,700,846	2.44	52,182,927	3.15	56,869,071	2.40	81,305,279	2.02	170,528,000	3.75
Szema	889,280	0.05	537,726	0.03	7,223,296	0.30	2,614,836	0.07	4,838,000	0.12
Tengyueh	4,720,796	0.26	5,795,726	0.35	7,083,716	0.30	12,576,773	0.31	78,210,000	2.03
TOTAL	1,795,003,719	100.00	1,657,231,149	100.00	2,373,376,959	100.00	4,020,435,921	100.00	4,193,566,000	100.00

VALUE OF IMPORTS AND EXPORTS IN LAST SIX YEARS, 1936-41
(C. G. U., NC \$ '000 omitted.)

YEAR	IMPORTS			EXPORTS		
	C. G. U.	NC \$	Index	C. G. U.	NC \$	Index
1936	417,837	944,523	100.0	312,630	706,791	100.0
1937	420,607	956,234	100.7	369,029	838,770	118.7
1938	388,739	893,500	93.0	331,688	763,731	108.1
1939	542,595	1,343,018	129.9	408,958	1,030,359	145.8
1940	755,214	2,044,365	180.7	729,986	1,976,071	279.6
1941	799,319	2,163,756	191.1	952,140	2,577,443	364.4
(Jan.—Oct.)						

VALUE OF EXCESS OF EXPORTS OR EXCESS OF IMPORTS IN LAST SIX YEARS
1936-41
('000 omitted)

YEAR	Excess of Exports	Excess of Imports
	NC \$	NC \$
1936		237,732
1937		117,464
1938		129,769
1939		312,659
1940		68,294
1941	413,687	
(Jan.—Oct.)		

IMPORTS BY PORTS IN LAST SIX YEARS, 1936-41
('000 omitted)

Port	1936		1937		1938		1939		1940		1941	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
Chinwangtao	NC \$ 3,462	0.37	NC \$ 3,700	0.39	NC \$ 23,785*	2.66	NC \$ 72,372*	5.39	NC \$ 79,617*	3.60	NC \$ 70,331*	3.22
Tientsin	72,647	7.69	84,061	8.79	233,865*	26.17	344,586*	25.00	654,963*	32.04	626,714*	28.72
Lungkow	2,013	0.21	1,681	0.18	5,847*	0.03	5,847*	0.43	9,924*	0.48	1,597*	0.07
Cheefoo	6,817	0.72	5,788	0.61	13,423*	1.50	28,058*	2.09	23,305*	1.14	13,089*	0.60
Weihaiwei	1,212	0.13	741	0.08	1,686*	0.19	2,675*	0.20	2,848*	0.14	856*	0.04
Kiaochow	54,752	5.80	49,813	5.21	46,958*	5.26	120,997*	9.01	220,386*	10.78	190,200*	8.72
Chungking	2,369	0.25	3,234	0.34	2,629	0.29	1,053	0.08	4,788	0.23	9,076	0.42
Wanshsien	38	...	29	...	7	...	25	...	57	...	100	...
Ichang	193	0.02	313	0.03	15	...	12	...	...	...	...	...
Shasi	140	0.01	147	0.02	1	...	77	...	3,557*	0.17	...	...
Changsha	5,099	0.60	6,898	0.70	617	0.07	242	0.02	4,012	0.23	16,550	0.76
Yochow	425	0.04	577	0.06	...	...	101*	0.01	...	...	5*	...
Hankow	32,875	3.48	33,412	3.49	2,749	0.31	...	...	...	...	...	...
Kiukiang	4,164	0.44	5,493	0.57	28	...	...	...	...	...	...	...
Wuhu	2,514	0.27	4,633	0.48	...	...	...	...	...	...	...	...
Nanking	17,406	1.84	8,651	0.91	...	...	...	...	...	...	...	...
Chinkiang	7,119	0.75	7,167	0.75	...	...	...	...	...	...	...	...
Shanghai	555,183	58.78	510,811	53.42	274,896*	30.77	588,156*	43.79	758,309*	37.09	695,247*	31.86
Soochow	4,449	0.47	4,659	0.49	...	...	...	...	...	...	...	...
Hangchow	2,809	0.30	3,127	0.33	1,212	0.14	1,667	0.12	10,597	0.52	...	...
Ningpo	1,845	0.20	2,121	0.22	1,923	0.22	2,765	0.22	2,477	0.12	...	...
Wenchow	469	0.05	842	0.09	1,277	0.03	1,829	0.14	940	0.05	263	0.01
Santua	120	0.01	163	0.02	6,864	0.77	6,998	0.52	1,158	0.06	794	0.04
Foochow	5,185	0.55	6,348	0.66	9,134*	1.02	10,157*	0.76	17,159*	0.84	16,230*	0.70
Amoy	13,296	1.41	13,017	1.36	36,588	4.10	33,435*	2.49	553	0.03	41*	...
Swatow	29,621	3.14	36,297	3.80	56,946	6.37	3,944*	0.29	14,303*	0.70	40,742*	1.87
Canton	30,905	3.27	45,166	4.72	143,871	16.10	8,576	0.64	101,970	4.99	69,625	3.19
Kowloon	57,550	6.09	82,719	8.65	3,672	0.41	26,638	1.98	16,172	0.79	...	...
Lappa	3,676	0.39	4,017	0.42	3,664	0.41	806*	0.06	3*	...	...	...
Kongmoon	3,402	0.36	4,581	0.48	3,388	0.04	...	...	...	...	...	...
Samsui	927	0.10	1,155	0.12	5,747	0.64	221	0.02	4,222*	0.21	7,316	0.33
Wuchow	7,063	0.75	7,666	0.80	28	...	31	...	83,131	4.07	114	...
Nanning	21	...	22	...	3,778	0.42	15,685	1.17	606*	0.03	324,178	14.85
Luichow	899	0.10	1,370	0.14	3,623	0.41	1,326*	0.10	845	0.04	135*	0.01
Kiungchow	2,522	0.27	3,508	0.37	774	0.09	2,340	0.17	98*	0.05	845	0.04
Pakhoi	669	0.07	1,192	0.12	273	0.03	36,439	2.71	4,095	0.20	1,720	0.08
Lungchow	49	0.01	83	0.01	11,465	1.28	21,942	1.63	21,016	1.03	5,668	0.26
Mengtsz	8,117	0.86	9,612	1.01	310	0.04	346	0.03	1,632	0.08	3,863	0.18
Szema	857	0.09	423	0.04	2,035	0.23	3,772	0.28	7,808	0.38	87,872	4.03
Tengyueh	1,044	0.11	1,141	0.12	...	...	...	...	...	...	...	...
Total	944,523	100.00	956,234	100.00	893,500	100.00	1,343,018	100.00	2,044,385	100.00	2,182,180	100.00
Unoccupied Ports*	...	...	...	...	289,484	32.40	130,558	9.72	284,875	12.95	527,923	24.20
Occupied Ports*	...	...	...	...	604,016	67.60	1,212,460	90.28	1,779,990	87.05	1,664,187	75.80

EXPORTS BY PORTS IN LAST SIX YEARS, 1936-41
('000 omitted)

Port	1936		1937		1938		1939		1940		1941	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
Chinwangtao	NC \$ 7,066	1.00	NC \$ 11,404	1.36	NC \$ 28,725*	3.76	NC \$ 30,409*	3.53	NC \$ 48,527*	2.46	NC \$ 63,262*	2.45
Tientsin	117,827	16.67	128,872	15.36	176,061*	23.05	95,594*	9.28	156,023*	7.90	161,770*	6.25
Lungkow	2,599	0.37	2,647	0.32	1,774*	0.23	471*	0.05	972	0.05	203*	0.01
Cheefoo	9,788	1.38	12,315	1.47	15,167*	1.99	10,780*	1.05	14,909*	0.75	11,061*	0.43
Weihaiwei	2,349	0.33	2,464	0.29	1,354*	0.18	1,587*	0.15	5,219*	0.26	1,761*	0.07
Kiaochow	51,533	7.29	58,039	6.92	31,445*	4.12	56,010*	5.44	101,830*	5.15	98,279*	3.80
Chungking	57	0.01	204	0.02	203	0.03	373	0.04	519	0.03	3,486	0.13
Wanshsien	...	...	...	...	...	...	...	...	...	...	...	...
Ichang	...	...	...	...	45	0.01	...	...	...	...	...	...
Shasi	6	...	1	...	...	...	...	...	...	...	...	...
Changsha	2	...	4	...	...	...	...	...	...	...	...	...
Yochow	...	...	...	...	371	0.05	21*	...	...	...	...	...
Hankow	13,559	1.92	9,011	1.07	...	...	...	...	...	...	...	...
Kiukiang	80	0.01	1,369	0.16	...	...	...	...	...	...	...	...
Wuhu	2,848	0.40	1,195	0.14	...	...	...	...	...	...	...	...
Nanking	1,672	0.24	...	...	...	...	...	...	...	...	...	...
Chinkiang	...	...	...	...	...	...	...	...	...	...	...	...
Shanghai	362,274	51.26	404,672	48.25	223,039*	29.20	594,693*	57.72	1,372,810*	69.47	1,833,038*	70.86
Soochow	1	...	1	...	...	...	...	...	...	...	...	...
Hangchow	...	...	...	...	...	...	...	...	...	...	...	...
Ningpo	135	0.02	541	0.06	4,768	0.62	9,816	0.95	46,024	2.33	...	...
Wenchow	8	...	14	...	6,240	0.82	11,779	1.14	24,900	1.24	3,643	0.14
Santua	4,443	0.63	6,381	0.76	51	0.01	3,753	0.36	1,778	0.09	...	...
Foochow	4,002	0.57	4,006	0.55	5,834	0.70	4,650	0.45	1,173	0.01	...	...
Amoy	23,224	3.29	33,515	4.00	37,553	4.92	34,950*	3.32	234*	0.01	18,900*	0.73
Swatow	42,487	6.01	63,846	7.61	106,694	13.97	5,322*	0.52	15,504*	0.79	77,348*	2.99
Canton	6,245	0.88	16,945	1.98	30,650	4.01	6,429	0.62	16,449	0.83	26,833	1.04
Kowloon	2,954	0.42	3,698	0.44	7,037	0.92	20,073	1.95	10,986*	0.56	...	...
Lappa	3,242	0.46	4,766	0.57	4,404	0.58	1,381*	0.13	...	...	...	...
Kongmoon	280	0.04	188	0.02	213	0.03	...	...	...	...	...	...
Samsui	13,861	1.95	26,416	3.15	21,724	2.84	...	...	...	...	...	...
Wuchow	1	...	1	...	2	...	...	...	...	...	...	...
Nanning	1,717	0.24	2,324	0.28	5,720	0.75	18,566	1.80	68,818	3.48	102	...
Luichow	2,915	0.41	3,509	0.42	4,267	0.56	1,645*	0.16	1,322*	0.07	89,685	3.47
K lungchow	1,482	0.21	1,574	0.19	2,546	0.33	17,602	1.86	4*	...	948*	0.04
Pakhoi	177	0.02	296	0.04	425	0.05	57,602	5.59	11,966	0.61	267	0.01
Lungchow	23,663	3.35	34,179	4.08	40,718	5.33	34,928	3.39	60,290	3.05	187,598	7.25
Mengtsz	415	0.06	466	0.06	228	0.03	377	0.04	982	0.05	1,081	0.04
Szema	3,923	0.55	3,580	0.43	3,761	0.49	3,312	0.32	4,769	0.24	6,984	0.27
Total	706,791	100.00	838,770	100.00	763,731	100.00	1,030,359	100.00	1,976,071	100.00	2,586,809	100.00
Unoccupied Ports*	...	...	...	...	282,067	37.05	188,723	18.32	247,354	12.52	320,143	12.38
Occupied Ports*	...	...	...	...	480,764	62.95	841,636	81.68	1,728,717	87.48	2,266,667	87.62

PRINCIPAL IMPORTS IN LAST SIX YEARS, 1936-41
(NC \$ '000 omitted.)

DESCRIPTION OF GOODS	Unit of Quantity	1936		1937		1938		1939		1940		1941 (January-October)	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Wheat Flour*	1,000 Quintals	310	4,669	304	6,183	2,548	52,985	3,573	76,817	3,203	141,801	3,921	209,043
Wheat	"	1,168	11,848	430	6,071	..	..	4,671	35,575	1,489	19,449	1,602	54,056
Rice**	"	3,103	26,736	3,457	40,781	4,961	58,390	3,202	55,142	6,495	171,283	8,354	276,295
Tobacco	"	114	14,998	169	19,449	190	19,661	348	30,468	393	41,746	181	22,484
Cigarettes	1,000,000's	97	1,273	142	1,348	136	1,657	297	3,407	331	4,677	693	4,641
Sugar	1,000 Quintals	..	20,535	..	22,031	..	19,363	..	52,151	..	70,102	..	80,789
Diesel Oil	Tons	313,480	16,175	258,997	14,968	165,976	10,723	165,685	10,755	207,311	13,665	159,535	17,945
Kerosene	1,000 Am. Gallons	104,427	39,885	118,346	47,860	66,736	30,046	61,941	30,943	69,745	49,412	38,598	41,932
Gasoline	"	45,509	22,730	54,786	27,613	31,903	20,528	35,892	24,760	34,105	33,148	28,816	42,767
Machinery and Tools***	"	..	59,549	..	64,632	..	56,073	..	60,484	..	75,074	..	53,383
Vehicles	"	..	50,471	..	40,233	..	32,514	..	45,650	..	45,788	..	53,148
Electrical Appliances	"	..	11,332	..	12,253	..	12,051	..	13,814	..	18,074	..	13,261
Iron and Steel	"	..	92,456	..	108,539	..	52,865	..	62,361	..	108,034	..	35,111
Lubricating Oil	1,000 Am. Gallons	13,122	7,847	12,512	8,724	6,953	7,824	8,409	8,868	8,525	13,860	6,987	16,318
Woolen Piecegoods	"	..	10,105	..	10,284	..	14,076	..	13,413	..	13,961	..	9,818
Cotton Piecegoods	"	..	12,090	..	14,669	..	22,540	..	15,398	..	56,464	..	227,106
Cotton Yarn	1,000 Quintals	6	1,629	11	2,696	17	3,312	37	7,166	105	40,939	235	81,488
Cotton	"	407	36,147	153	16,005	166	12,735	2,477	172,857	2,444	261,877	1,631	240,036
Rubber and Manufactures thereof	"	..	16,005	..	17,312	..	11,004	..	16,482	..	27,938	..	34,486
Cement	1,000 Quintals	349	797	254	544	627	1,764	674	2,352	444	2,475	497	2,854
Coal	1,000 Tons	561	6,442	427	4,988	1,092	20,809	1,414	25,313	2,008	49,647	1,012	26,240
Paper	"	..	51,849	..	59,134	..	39,930	..	52,905	..	67,554	..	81,512
Sundry	"	..	425,977	..	407,069	..	385,350	..	516,373	..	700,174	..	529,703
TOTAL	..	..	941,545	..	953,386	..	886,200	..	1,333,654	..	2,027,143	..	2,163,756

*Including Flour, v.o.r.

**Including Unbleached Rice

***Excluding Saw

PRINCIPAL EXPORTS IN LAST SIX YEARS, 1936-41
(NC \$ '000 omitted.)

DESCRIPTION OF GOODS	Unit of Quantity	1936		1937		1938		1939		1940		1941 (January-October)	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Tea	Quintals	372,843	30,662	30,787	416,246	33,054	225,578	30,386	30,386	344,925	104,571	81,356	40,761
Wood Oil	"	867,383	73,379	89,846	695,777	39,237	335,016	33,615	33,615	232,472	56,358	205,778	93,871
Animal Hair	Kilograms	18,760,231	20,022	13,744,272	23,499	4,927,671	11,297	2,114,742	6,514	2,441,034	18,745	1,107,159	12,067
Bristles	"	5,264,800	25,304	4,044,900	27,921	3,633,800	28,064	3,332,700	41,118	3,556,664	94,184	2,638,010	127,170
Silk Cocoons	"	134,152	880	677,560	3,431	720,812	2,334	566,492	2,236	14,015	1,362	51,310	1,502
Silk	"	8,905,089	43,634	8,979,031	53,192	5,706,226	37,701	8,189,567	142,351	5,763,909	280,941	5,199,800	232,334
Nutgalls	Quintals	42,599	1,491	50,801	1,791	23,179	896	30,064	2,566	24,047	4,624	21,181	6,345
Goat Skin	Sheets	10,350,205	14,489	19,948	3,541,672	4,623	2,473,056	6,874	3,579,913	17,667	2,146,576	14,486	14,486
Hides	Quintals	148,276	10,706	149,596	12,890	62,034	4,995	19,658	2,056	13,848	5,782	11,456	12,133
Animal Intestines	"	32,086	10,894	27,503	12,111	17,601	7,776	18,731	14,041	12,347	11,873	7,990	10,701
Ramie	"	197,427	7,962	132,998	5,074	111,915	4,513	11,732	641	20,227	7,143	9,422	3,778
Cotton	"	368,426	28,198	636,529	37,556	105,769	328,789	19,042	37,999	8,462	308,525	308,525	75,900
Cotton Yarn	"	89,885	12,398	37,913	4,845	131,759	22,883	118,095	31,767	134,380	70,780	159,686	136,741
Egg and Egg Products	"	..	41,802	..	52,813	..	49,275	..	82,313	..	133,156	..	55,528
Feathers	Quintals	47,982	3,238	9,042	35,859	6,727	30,010	8,770	8,770	21,598	16,240	28,090	21,932
Rhubarb	"	20,779	1,125	21,790	1,268	21,147	1,115	21,032	1,365	24,477	4,045	20,653	5,958
Tea Oil	"	37,905	1,407	129,038	6,098	61,584	2,297	24,793	1,137	20,979	3,625	2,703	908
Tallow Vegetable	"	11,935	506	33,455	1,477	1,633	46	11,768	383	56	5	..	..
Coal (including Ships' Coal)	Tons	1,374,942	11,025	1,834,566	13,533	2,077,409	14,420	2,964,603	29,141	4,838,009	68,305	4,881,704	100,867
Hand-made Embroideries	"	..	31,384	..	40,750	..	37,034	..	49,559	..	76,912	..	76,048
Silk Piecegoods	Kilograms	534,007	7,438	1,142,573	12,589	998,427	10,533	1,385,593	19,842	586,930	23,003	1,057,024	49,461
Woolfram	Quintals	70,499	9,342	165,178	40,759	123,577	50,492	106,891	44,675	28,737	13,616	84,699	83,736
Antimony	"	173,116	9,887	153,884	11,446	79,834	6,100	67,599	5,276	55,745	9,024	10,105	4,921
Tin Slabs	"	112,604	26,769	130,772	39,717	117,916	35,987	105,890	32,793	63,493	28,269	57,281	90,414
Straw Braid	"	14,217	2,291	11,063	1,847	9,616	1,967	23,011	5,426	16,835	5,557	7,250	2,184
Sundry	"	..	277,509	..	284,346	..	243,507	..	413,359	..	895,903	..	1,317,697
TOTAL	..	..	705,741	..	838,256	..	762,641	..	1,027,247	..	1,970,121	..	2,577,443

GROSS IMPORTS FROM FOREIGN COUNTRIES, 1937-41. VALUE OF MERCHANDISE: BY COUNTRIES

('000 omitted)

COUNTRY & REGION	1937		1938		1939		1940		1941	
	NC \$	%	NC \$	%	NC \$	%	NC \$	%	NC \$	%
Australia	16,337	1.71	28,065	3.14	68,680	5.11	85,762	4.20	100,667	5.29
Belgium	28,333	2.96	18,126	2.03	21,044	1.57	14,908	0.73	1,677	0.09
British India	12,467	1.30	16,214	1.81	119,439	8.89	175,275	8.57	151,578	7.96
Burma	8,220	0.86	12,801	1.43	6,466	0.48	13,267	0.65	91,414	4.80
Canada	17,093	1.79	7,572	0.88	10,530	0.78	11,272	0.55	21,818	1.15
Formosa	3,584	0.38	2,277	0.26	28,649	2.13	29,105	1.42	28,825	1.51
France	15,106	1.58	18,304	2.05	10,307	0.84	7,815	0.38	2,050	0.14
French Indo-China	29,991	3.14	27,351	3.06	28,508	2.12	138,126	6.76	128,174	6.73
Germany	146,374	15.31	112,939	12.64	87,167	6.49	55,033	2.69	42,842	2.25
Great Britain	111,695	11.68	70,606	7.90	77,860	5.80	81,609	3.99	39,560	2.08
Hongkong	19,078	2.00	24,589	2.76	35,416	2.64	146,972	7.19	270,779	14.23
Italy	9,906	1.04	17,465	1.95	11,108	0.83	6,766	0.33	788	0.04
Japan	150,432	15.73	209,864	23.49	313,398	23.34	466,289	22.81	349,839	18.38
Korea	2,346	0.25	5,577	0.62	20,827	1.55	15,958	0.78	17,219	0.90
Netherlands India	80,718	8.44	45,744	5.12	58,350	4.35	107,504	5.26	112,015	5.89
Thailand	15,833	1.66	34,939	3.79	20,966	1.56	47,868	2.34	48,233	2.53
Straits Settlements and F. M. S.	10,362	1.08	7,313	0.82	12,032	0.90	22,676	1.12	14,173	0.74
Brazil	...	...	...	...	38,243	2.85	44,229	2.16	44,009	2.31
U. S. A.	188,859	19.75	151,254	16.93	214,100	15.94	435,486	21.30	374,903	19.70
Kwantung Leased Territory	9,546	1.00	37,411	4.19	98,958	7.37	75,928	3.71	23,032	1.21
Other Countries	78,954	8.34	54,789	6.13	60,970	4.46	62,317	3.06	39,304	2.00
Total	956,234	100.00	893,500	100.00	1,343,018	100.00	2,044,365	100.00	1,903,499	100.00

GROSS EXPORTS TO FOREIGN COUNTRIES, 1937-41. VALUE OF MERCHANDISE: BY COUNTRIES

('000 omitted)

COUNTRY & REGION	1937		1938		1939		1940		1941	
	NC \$	%	NC \$	%	NC \$	%	NC \$	%	NC \$	%
Australia	5,401	0.64	3,897	0.51	6,393	0.62	14,704	0.74	10,098	0.44
Belgium	5,794	0.69	2,547	0.33	3,193	0.31	745	0.04	...	...
British India	11,791	1.41	19,720	2.58	30,700	2.98	89,903	4.55	95,500	4.17
Burma	4,503	0.54	4,661	0.61	5,629	0.55	19,125	0.97	26,680	1.16
Canada	7,091	0.85	3,675	0.48	10,213	0.99	24,557	1.24	13,404	0.58
Egypt (including Anglo-Egypt, Sudan)	2,654	0.32	2,852	0.37	5,369	0.52	2,986	0.15	21,688	0.95
Formosa	2,845	0.34	177	0.02	6,891	0.67	39,897	2.02	54,033	2.26
France	32,643	3.89	20,402	2.67	32,641	3.17	31,819	1.61	7	...
French Indo-China	12,827	1.53	15,816	2.07	71,046	6.90	45,222	2.29	79,145	3.41
Germany	72,477	8.64	56,440	7.39	45,097	4.38	4,099	0.21	19,969	0.87
Great Britain	80,380	9.58	56,769	7.43	90,863	8.82	197,798	9.96	87,246	3.81
Hongkong	162,904	19.42	243,395	31.87	222,099	21.56	367,502	18.60	511,063	22.32
Italy	6,840	0.82	1,267	0.17	2,593	0.22	6,634	0.34	120	...
Japan	84,306	10.05	116,547	15.26	66,621	6.47	126,408	6.40	192,707	8.41
Korea	7,712	0.92	6,873	0.90	5,598	0.54	12,495	0.63	22,268	0.97
Macao	5,127	0.61	9,624	1.26	21,551	2.09	19,627	0.99	32,967	1.44
Morocco	8,327	0.99	7,550	0.99	7,610	0.74	13,687	0.69	264	0.01
Netherlands	14,261	1.70	8,170	1.07	10,742	1.04	2,669	0.13	...	...
Netherlands India	6,228	0.74	6,664	0.87	17,688	1.72	48,521	2.46	118,920	5.19
Philippine Islands	6,945	0.83	6,703	0.88	15,582	1.51	32,257	1.63	62,086	2.71
South Africa, Union of, and Rhodesia	...	...	...	...	3,080	0.30	12,430	0.63	14,903	0.64
Straits Settlements and F. M. S.	19,213	2.29	17,546	2.30	33,786	3.28	64,865	3.28	85,546	3.74
Thailand	4,111	0.49	6,019	0.79	11,583	1.12	43,170	2.18	62,730	2.74
U. S. A.	231,449	27.59	86,853	11.37	225,873	21.92	565,669	28.63	522,591	22.82
Kwangchowwan	1,157	0.14	2,381	0.31	8,468	0.82	43,266	2.10	35,782	1.56
Kwantung Leased Territory	14,603	1.74	41,507	5.44	48,552	4.71	105,082	5.32	192,511	8.41
Other Countries	27,181	3.24	15,676	2.06	21,198	2.05	40,934	2.12	29,139	1.29
Total	838,770	100.00	763,731	100.00	1,030,359	100.00	1,976,071	100.00	2,290,067	100.00

ESTIMATED WARTIME ANNUAL PRODUCTION OF TEA

Province	(Pounds)
Chekiang	31,570,000
Hunan	27,500,000
Anhwei	25,960,000
Fukien	23,094,500
Hupei	12,650,000
Szechwan	11,972,400
Kiangsi	11,880,000
Kwangtung	8,800,000
Yunnan	8,327,000
Sikang	4,400,000
Kwangsi	4,004,000
Kweichow	750,200
Shensi	550,000
Honan	462,000
Kiangsu	110,000
TOTAL	172,030,100

Estimates based upon the actual amounts of tea available for foreign and domestic markets. Local consumption is excluded.

TOTAL EXPORTS OF CHINESE TEA BETWEEN 1937-40

COUNTRY AND REGION	1937		1938		1939		1940	
	Quintals	NC \$	Quintals	NC \$	Quintals	NC \$	Quintals	NC \$
Aden, Perim I	2,346	158,280	10,041	124	7,069	190	3,179	96
Algeria	15,130	1,833,959		1,346,940		1,221,208		2,456,971
Arabia	356	16,646						
Argentina	372	37,903						
Australia	3,435	269,897	2,486	60	256	51,349	332	122,588
Belgium	133	18,563	1	411				
British India	6,058	534,356	2,259	163,004	1,363	246,085	694	276,757
British W. Africa	88	10,941	825	73,722	299	31,902	2	1,054
Burma	8,788	305,405	7,208	224,470	13,560	305,570	7,710	807,286
Canada	3,279	250,409	559	54,523	289	38,307	205	103,218
Chile	17	2,249						
Danzig								
Denmark	438	37,888	5	7,056				
Egypt	1,383	78,296	150	10,292	15	1,500	47	18,493
Formosa	1,067	81,344	87	23,167	141	12,030	126	12,493
France	8,028	926,701	3,284	311,100	37	6,770	1,223	530,519
French E. Africa	1,448	92,126			1	240		
French Indo-China	1,114	71,382	546	35,705	1,505	58,996	798	92,588
French W. Africa	3,134	346,181	2,922	287,914	2,478	274,606	780	324,320
Germany	5,723	506,406	4,695	372,983	398	41,276	8	4,678
Gibraltar	688	69,105	797	71,350	392	28,834	2,174	910,656
Great Britain	56,969	5,187,919	9,023	809,441	2,988	265,522	9,804	1,867,761
Hongkong	41,705	2,777,392	239,099	17,072,659	118,241	18,190,761	234,854	60,879,673
Italy	85	8,600	123	14,464	298	47,895	48	22,069
Japan	2,372	195,616	348	28,427	95	14,957	1,903	964,532
Korea	109	15,500						
Macao	1,074	43,688						
Morocco	74,952	8,173,065	1,920	71,037	4,072	208,202	940	156,785
Netherlands	8,610	954,674	375	7,403,519	47,888	6,725,594	25,509	18,170,511
Dutch East Indies	229	23,809	309	25,522	26	3,306	1	560
New Zealand	408	40,227	43	3,206	183	25,495	260	58,752
Palestine								
Peru	409	28,812	87	5,025			95	27,220
Philippine Islands	922	82,719	655	58,768	525	50,419	560	143,799
Portugal	809	80,640	108	10,481	28	2,812	45	17,294
Rumania	62	2,667						
Siam								
South Africa	1,645	131,952	319	20,909	288	36,268	412	289,449
Spain	128	7,680	330	32,944			126	37,139
Spanish W. Africa								
Singapore	5,859	532,405	3,589	291,907	2,099	175,527	5,114	1,107,128
Peru	82	2,657	56	4,949	11	1,094	11	4,553
Thailand	688	52,515	2,428	169,581	288	16,954	375	64,365
Tripoli	481	57,821						
Tunis	4,646	473,477	4,214	419,456	1,639	1,611	2,122	502,025
United States	32,972	2,873,759	21,660	1,905,181	2,857	291,498	13,618	6,181,465
U. S. Pacific Territory and Possessions	30	2,581	37	5,748	10,336	1,535,668	140	37,587
U. S. S. R.	98,661	2,868,995	2,409	243,078	61	10,197		
Kwangchowwan								
Kwantung Leased Territory	9,768	516,353	11,772	651,512	2,992	251,272	28,390	18,364,217
Other Countries	324	40,554	80	8,719	13	7,119	20	35,200
Re-Imports from Abroad	-472	-36,840	-140	-14,941	-94	-8,628	-2,955	1,254,978
TOTAL	406,572	30,787,274	416,246	33,054,085	225,578	30,385,831	344,925	104,571,195

CHAPTER XV

AGRICULTURAL ECONOMY

GENERAL REVIEW

Chinese agriculture is generally divided into two main types, namely: grazing on natural grasses and arable farming.

On the plateaus and steppe lands with low temperature, short growing seasons and scanty rainfall, grazing on natural grasses is the fundamental type of agriculture. Cultivation is limited to small regions where favorable natural conditions prevail. This type of agriculture is found in Outer Mongolia, the western part of Heilungkiang, the northern part of Jehol, the northern part of Chahar, the northern part of Suiyuan, the northern and western parts of Ningsia, Sinkiang, the western part of Sikang, and Tibet.

Arable farming in China can be divided into four regions. They are:

- (1) The Spring Wheat Region—Covering Kirin, Liaoning, the eastern part of Heilungkiang, the southern and eastern parts of Jehol, the southern part of Chahar, the southern part of Suiyuan, the northern and western parts of Kansu, the southern and eastern parts of Ningsia, the northern part of Shansi, the northern part of Chinghai, the northwestern part of Szechwan and the northern part of Sikang.
- (2) The Winter Wheat Region—Covering Hopei, Shantung, the northern part of Kiangsu, the northern part of Anhwei, Honan, the southern part of Shansi, the southern part of Shensi, the southern and eastern parts of Kansu, the northern part of Szechwan, the southern and eastern parts of Sikang, and the northwestern part of Yunnan.
- (3) The Wheat and Rice Regions—Covering the southern part of Kiangsu, the northern part of Chekiang, the southern part of Anhwei, all except the southern tip of Hupeh, the eastern and

central parts of Szechwan, the central part of Yunnan, and the northern part of Kweichow.

- (4) The Rice Region—Covering the southern part of Chekiang, Kiangsi, Hunan, the southern tip of Hupeh, Fukien, Kwangtung, Kwangsi, the southern part of Kweichow, and the southern part of Yunnan.

The Spring Wheat Region is the only arable farming region in China where no winter crops can be planted on account of low winter temperature. Crops must be planted in the spring or early summer. One crop a year is the rule, with spring wheat as the chief crop. Barley, oats, millet, proso millet, peas, beans, hemp, flax and kaoliang are also cultivated. Throughout this region, livestock raising is an important undertaking. Wool production is essential, but cotton is not grown except in the Liaoning Peninsula.

Winter wheat is the premier crop in the Winter Wheat Region with barley as the main supplementary cereal. Other popular crops in this region include kaoliang, millet, corn, cotton, tobacco, peanuts, beans, and sweet potatoes. Double cropping is possible, but not common. Cattle and donkeys are the chief labor animals.

The Wheat and Rice Region is commonly known as the transitional boundary between the northern and southern agriculture in China. Rice is the most important summer crop in this region, while wheat is the most important winter crop. Other crops are beans, peas, kaoliang, sweet potatoes, cotton, barley, rapeseeds and oats. Yellow cattle and water buffaloes are the most important farm animals. Productive animals are also raised since there is a surplus of cereals.

Wheat growing is limited in the Rice Region. Farmers in this region usually grow two crops of rice a year, either by interplanting or by double cropping. Interplanting means planting late rice between the rows of early rice, while double cropping means planting late rice after the harvest of early rice. All

lands of labor and productive animals can be found in this region. In horticulture, this is a region of citrus fruits.

Scientific farming, large-scale farm management, industrialization of rural districts, commercialization of farm products and a better rural system are the main objectives of the Chinese Government in endeavoring to improve China's agricultural situation. Readjustments have been made in all the above-mentioned four agricultural regions. Special attention has been directed to the development of the Northwest in both grazing and farming.

The science of agriculture has but a short history in China, but it has made considerable progress under the direction of the National Agricultural Research Bureau of the Ministry of Agriculture and Forestry. Experimental work on rice, wheat, cotton, soy beans and other agricultural products has been well developed throughout the country.

The Chinese Government's agricultural policy tends to change household farming to large-scale organization. To enforce large-scale farm management, the first

step is to realize Dr. Sun Yat-sen's policy of enabling those who till the land to become its owners. The National Land Administration was created in June, 1942, to implement this policy with the cooperation of the Ministry of Agriculture and Forestry and the Farmers' Bank of China.

The industrialization of rural China has a bright future as the Government's policy today is to discourage the concentration of industrial enterprises in a few big cities, particularly in wartime. This is to be the policy of post-war reconstruction with emphasis on the hinterland. The industrialization of rural districts, if well balanced, will naturally absorb surplus labor, thus indirectly balancing the demand and supply of land in densely-populated localities.

Of the vast Chinese territory, much is not cultivable owing to the lack of moisture, excessive cold, or the poverty of soil. Not all the cultivable land, however, has been put under the plow. Details of the land and farm situation may be seen in the following three tables:

TABLE 1. ACREAGE OF CULTIVATED AND CULTIVABLE LAND AND NUMBER OF FARM HOUSEHOLDS IN CHINA

PROVINCE	Total Land Area in 1,000 Shih Mow	Acreege of Cultivated Land in 1,000 Shih Mow	Acreege of Cultivated Land as a Percentage of Total Land Area	Acreege of Cultivable Land in 1,000 Shih Mow	Acreege of Cultivable Land as a Percentage of Total Land Area	No. of Households (in 1,000)	No. of Farm Households (in 1,000)	No. of Farm Households as a Percentage of No. of Households	Average No. of Shih Mow of Cultivated Land per Farm Household
Chahar	377,530	15,519	4.1	161,394	42.75	394	309	78	50
Suiyuan	400,567	17,178	3.7	91,914	19.70	367	250	68	69
Ningsia	350,065	1,847	0.5	40,503	11.57	76	54	71	34
Chinghai	702,128	7,808	1.0	61,311	7.74	230	169	73	46
Kansu	584,056	21,667	3.7	16,412	2.81	1,076	793	74	27
Shensi	279,985	30,870	11.0	12,693	4.53	1,897	1,385	73	22
Shansi	257,060	55,812	21.7	9,820	3.82	2,263	1,874	83	30
Hopei	206,891	95,323	46.1	6,496	3.14	5,474	4,224	77	23
Shantung	219,457	101,986	46.5	13,694	6.24	6,740	5,918	88	17
Kiangsu	163,216	84,482	51.6	3,982	2.44	7,151	5,057	71	17
Anhwei	217,073	49,316	22.7	9,074	4.18	3,789	2,682	71	18
Honan	276,877	104,123	37.6	8,362	3.02	6,029	5,062	84	21
Hupeh	288,906	56,227	19.5	20,166	6.98	5,913	3,960	67	14
Szechwan	591,204	88,724	15.0	22,586	3.82	7,264	4,975	68	18
Yunnan	592,464	24,905	4.2	59,246	10.00	1,947	1,384	71	12
Kweichow	260,780	21,197	8.1	18,072	6.93	1,769	1,193	67	18
Hunan	325,577	42,036	12.9	37,279	11.45	5,538	3,900	70	11
Kiangsi	271,736	38,866	14.1	13,859	5.10	4,942	3,292	67	12
Chekiang	144,635	37,978	26.3	2,763	1.91	4,658	3,165	68	12
Fukien	188,771	21,464	11.4	18,330	9.71	2,288	1,626	71	13
Kwangtung	339,742	39,124	11.5	26,704	7.86	5,635	3,479	62	11
Kwangsi	278,913	29,893	10.7	8,501	3.08	2,638	2,260	86	13
Total	7,473,698	985,938	13.2	663,241	8.87	78,078	57,011	73	17*

* Weighted average.

Source: The National Agricultural Research Bureau.

TABLE 2. ACREAGE CHANGES OF CULTIVATED LAND IN LAST 60 YEARS

PROVINCE	INDEX OF ACREAGE OF CULTIVATED LAND (1873=100)				LINK INDEX		
	1873	1893	1913	1933	1893	1913	1933
					(1873=100)	(1893=100)	(1913=100)
Chahar	100	104	112	104	104	108	93
Suiyuan	100	95	93	88	95	97	95
Ningsia	100	100	102	99	100	102	97
Chinghai	100	169	175	203	169	104	116
Kansu	100	116	117	118	116	100	101
Shensi	100	98	95	91	98	96	96
Shansi	100	103	110	110	103	106	101
Hopei	100	98	100	98	98	103	98
Shantung	100	103	105	99	103	102	94
Kiangsu	100	101	102	110	101	101	108
Anhwei	100	106	107	107	106	101	100
Honan	100	99	117	115	99	118	99
Hupeh	100	104	109	128	104	105	118
Szechwan	100	102	104	110	102	102	106
Yunnan	100	111	133	131	111	120	99
Kweichow	100	115	121	130	115	105	108
Hunan	100	88	89	88	88	101	98
Kiangsi	100	99	93	91	99	94	97
Chekiang	100	102	73	78	102	71	107
Fukien	100	96	92	81	96	96	87
Kwangtung	100	101	101	102	101	100	101
Kwangsi	100	105	117	123	105	111	105
TOTAL	100	101	101	101	101	100	100

Source: The National Agricultural Research Bureau.

TABLE 3. AREA OF WASTELAND

PROVINCE	Area of Wasteland as a Percentage of Total Land Area		
	Area of Wasteland as a Percentage of Total Land Area	Area of Cultivable Wasteland as a Percentage of Total Area of Wasteland	Area of Cultivable Land as a Percentage of Total Land Area
Chahar	75.0	57.0	42.75
Suiyuan	34.5	57.1	19.70
Ningsia	53.3	21.7	11.57
Chinghai	18.0	43.0	7.74
Kansu	17.8	15.8	2.81
Shensi	19.7	23.0	4.53
Shansi	13.8	27.7	3.82
Hopei	12.0	26.2	3.14
Shantung	16.9	36.9	6.24
Kiangsu	12.2	20.0	2.44
Anhwei	12.0	34.8	4.18
Honan	11.5	26.3	3.02
Hupeh	17.8	39.2	6.98
Szechwan	16.7	22.9	3.82
Yunnan	20.0	50.0	10.00
Kweichow	21.0	33.0	6.93
Hunan	22.5	50.9	11.45
Kiangsi	17.9	28.5	5.10
Chekiang	9.8	19.5	1.91
Fukien	20.8	46.7	9.71
Kwangtung	16.2	48.5	7.86
Kwangsi	17.2	17.9	3.08
Weighted Average	19.1	33.3	6.36

Source: The National Agricultural Research Bureau.

Rice and wheat are the main staple food crops in China with corn, barley, kaoliang, sweet potatoes, potatoes, millet and soy beans as supplementary cereals. Rice is largely consumed in central and southern provinces, such as Szechwan, Hunan, Hupeh, Kiangsi Kwangtung, Kwangsi, Yunnan and Fukien, while wheat in northern provinces, such as Honan, Shensi, Kansu, Chinghai and Ningsia. The production of rice in Free China is more than sufficient, while that of wheat, corn, millet, barley, kaoliang and soy beans is slightly insufficient. The differences, however, can be made up by restricting non-essential uses of cereals, such as the manufacture of wine. The problem of food supply in China is, therefore, not acute, and is far from being so serious as to create uneasiness among the people. (See Tables 4, 5 and 6.)

TABLE 4. ESTIMATED AMOUNT OF SURPLUS (+) OR INSUFFICIENCY (-) OF IMPORTANT FOODSTUFFS IN 15 FREE CHINA PROVINCES

	1940	1941
Unhusked rice	+38,123	+463
Wheat	-780	-2,890
Barley	-91	-1,103
Corn	-491	-2,567
Kaoliang	-293	-527
Millet	+345	-91
Sweet potatoes	+6,409	+2,506
Soy beans	-2,849	-2,791

TABLE 5. PER CAPITA CONSUMPTION OF FOOD PRODUCTS

(Unit: Catties)

	1938	1939	1940	1941	Chekiang	Kiangsi	Hupeh	Hunan	Szechwan	Honan	Shensi	Kansu	Chinghai	Fukien	Kwangtung	Kwangsi	Yunnan	Kweichow	Ningsia
Rice	288.3	299.2	294.6	289.2	243.8	453.3	289.3	432.2	335.8	20.2	39.4	12.3	1.4	426.1	371.1	344.5	308.1	347.0	74.0
Wheat	56.9	65.1	69.4	72.9	34.0	5.5	57.2	12.9	47.7	198.8	301.3	224.6	134.6	18.7	6.0	13.4	25.2	17.7	188.5
Barley	12.7	13.7	13.7	13.6	9.3	1.3	24.8	3.9	12.3	30.6	10.1	47.6	232.4	3.6	1.4	3.5	7.0	15.9	13.2
Corn	47.5	48.5	56.0	63.3	21.6	1.0	23.6	4.8	100.4	104.7	94.9	30.9		2.3	2.4	57.3	94.7	122.6	1.3
Kaoliang	70.5	41.3	11.7	11.3	1.7	0.2	11.9	4.5	12.2	75.3	14.4	20.8		1.8	0.7	3.2	2.9	7.2	13.6
Millet	16.8	18.3	16.6	17.7	2.1	6.0	28.8	3.1	3.6	92.0	52.2	41.7	7.9	2.0	2.0	9.5	6.8	7.6	75.3
Proso millet	3.8	5.1	5.3	5.0	0.1		0.5	0.8	0.1	0.7	21.4	33.9	5.5	0.1	0.1	0.6	0.8	0.4	88.8
Hard-yeard millet	4.7	4.7	4.4	4.4		0.2		0.8		2.0	7.2	41.5	6.9	1.3	2.6	1.7	1.8	0.8	57.5
Oats	2.7	3.1	3.1	3.7	0.5	0.5	0.2	1.6	4.1	1.1	23.3	30.6	0.1	0.2	0.2	0.6	7.2	5.7	
Buck wheat	8.1	9.7	10.1	11.5	6.3	6.8	0.8	5.7	7.8	11.2	22.6	34.9	11.3	1.3	1.4	6.1	21.6	16.4	17.8
Soy beans	16.9	18.1	17.3	16.9	12.1	15.2	27.8	9.0	23.2	27.7	12.4	7.8	8.0	9.3	6.7	12.4	19.7	28.5	3.2
Broad beans	8.1	9.8	9.8	9.8	4.2	3.5	22.4	6.0	22.3	0.5	3.6	4.5	3.0	1.8	1.0	3.1	24.1	10.3	3.6
Field peas	11.2	12.1	11.8	12.7	4.9	4.9	21.8	4.8	24.9	16.8	9.3	18.4	43.3	2.9	1.4	6.6	16.1	10.5	1.8
Black beans	2.7	3.1	2.9	2.9	1.0	3.9	0.6	2.0	2.6	5.1	4.5	0.7	3.3	2.6	2.5	3.8	1.9	2.5	2.6
Green beans	6.6	6.6	6.8	7.0	1.6	3.1	0.6	5.5	6.9	47.1	10.9	1.4		2.5	1.0	3.5	1.9	3.2	1.8
Sweet potatoes	65.2	62.3	61.0	62.4	87.3	70.1	36.2	55.5	94.2	118.6	21.2	7.4	6.3	151.6	137.0	39.5	14.4	31.8	10.3
Potatoes	17.9	19.0	18.1	20.3	17.7	4.9	30.7	10.1	28.3	10.3	18.6	64.3	85.6	5.8	7.6	7.0	30.8	20.4	29.8
Taroos	1.0	1.0	1.1	1.2	1.3	0.7		0.4	0.4					1.2	10.5	4.1			

TABLE 6.—PER CAPITA CONSUMPTION OF MEAT AND FISH
(Unit: Catties)

LOCALITY	Pork	Mutton	Beef	Chickens and Ducks	Fish	Eggs (Piece)
1938	18.3	3.2	6.1	5.6	7.8	41
1939	18.3	4.3	6.6	5.5	6.7	43
1940	18.0	3.3	5.8	4.8	6.2	38
1941	18.1	3.5	5.6	5.1	5.7	35
Chekiang	12.4	1.6	2.0	4.8	11.5	36
Kiangsi	17.4	0.7	3.9	5.5	8.8	34
Hupeh	19.1	7.4	8.7	3.7	4.2	44
Hunan	20.3	1.8	4.8	5.4	9.5	37
Szechwan	20.3	4.5	4.1	4.7	3.8	34
Honan	8.7	3.2	4.9	2.5	2.1	39
Shensi	9.7	2.9	1.7	2.0	0.5	38
Kansu	13.3	9.9	4.5	4.2	0.6	55
Chinghai	8.7	7.4	7.8	0.8	0.4	22
Fukien	16.1	1.4	4.9	4.5	9.0	27
Kwangtung	13.6	1.4	5.4	4.9	9.7	19
Kwangsi	20.6	0.9	12.9	7.6	10.9	22
Yunnan	23.9	5.8	7.8	8.4	5.4	46
Kweichow	28.3	3.1	6.4	6.8	3.9	43
Ningsia	11.8	14.6	7.2	2.7	1.9	22

Source: The National Agricultural Research Bureau.

AGRICULTURAL PRODUCTION PREWAR AND WARTIME COMPARED

The present comparison of the agricultural production in China in prewar and in wartime is confined to 1931-1937 and 1938-1941, based on reports made during the last ten years by the National Agricultural Research Bureau.

1. *Prewar Period.* Rice, wheat and barley are the chief crops that China produces and her people consume. Twenty-two provinces before the outbreak of the war in 1937 produced a total of 1,600,000,000 piculs of unhusked rice, wheat and barley. The estimated yearly production of important crops may be summarized as follows:

TABLE 7.—ESTIMATED YEARLY PRODUCTION OF IMPORTANT CROPS DURING PREWAR PERIOD

Kinds of Cereals	Production in Piculs
Unhusked rice	1,000,000,000
Wheat and barley	600,000,000
Sweet potatoes	400,000,000
Kaoliang	140,000,000
Millet	140,000,000
Corn	140,000,000
Soy beans	140,000,000
Field peas	60,000,000
Broad beans	60,000,000
Peanuts	60,000,000
Rapeseeds	60,000,000
Proso millet	20,000,000
Oats	20,000,000
Sesame	20,000,000
Cotton	20,000,000
Tobacco	20,000,000
TOTAL	2,900,000,000

Livestock production in the prewar period may be seen in the following table:

TABLE 8.—ESTIMATED YEARLY PRODUCTION OF LIVESTOCK DURING PREWAR PERIOD

Kinds of Livestock	Number
LABOR ANIMALS—	
Water buffaloes and cattle	30,000,000
Horses, donkeys and mules	20,000,000
PRODUCTIVE ANIMALS—	
Poultry animals	300,000,000
Hogs	60,000,000
Sheep and goats	30,000,000
TOTAL	440,000,000

2. *Prewar and Wartime Compared.* Sixty per cent. of the agricultural and livestock production of the country is in Free China, while the rest is produced in the occupied areas. Of the agricultural products, 60 per cent of the rice is produced in Free China, while only 20 per cent is in the enemy-controlled regions. Wheat produced in Free China as compared with the total production amounts to 80 per cent; kaoliang, millet, proso millet, soy beans, oats and cotton from 70 to 80 per cent; and peanuts, sesame, corn, and barley from 50 to 60 per cent. A greater portion of field peas, broad beans, rape-seeds, sweet potatoes and tobacco is produced in Free China.

Of the livestock production, 80 per cent of the water buffaloes are found in the interior provinces. Horses, mules, donkeys, goats and sheep are largely

concentrated in the occupied and war areas, while hogs, chickens, ducks and geese are mostly in the hinterland. (See Table 9.)

TABLE 9.—CROP AND LIVESTOCK PRODUCTION IN CHINA
(Acreage in 1,000 shia mow, production in 1,000 piculs, livestock in 1,000 heads)

CROP	ACREAGE OF CROPS (1931-1937 AVERAGE)			PRODUCTION OF CROPS (1931-1937 AVERAGE)			NUMBER OF LIVESTOCK (1937)			Weighted Average	
	22 Provinces	15 Interior Provinces	Percentage of 15 Interior Provinces	22 Provinces	15 Interior Provinces	Percentage of 15 Interior Provinces	22 Provinces	15 Interior Provinces	Percentage of 15 Interior Provinces		
WINTER CROPS—											
Wheat	302,311	110,023	36	434,858	169,160	39	11,574	9,218	80	55	
Barley	101,079	51,604	51	157,427	83,553	53	23,081	13,013	59		
Field peas	53,626	33,815	63	63,805	41,205	65	3,260	1,631	50		
Broad beans	42,071	29,249	70	60,360	44,120	73	3,624	1,068	29		
Rapeseeds	59,554	42,494	71	49,460	36,642	74	9,018	2,480	28		
Oats	15,538	2,341	15	17,612	2,961	17					
SUMMER CROPS—											
Rice	267,448	210,868	79	911,918	726,315	80	15,744	8,121	52		
Glutinous rice	29,112	19,898	68	89,370	62,806	70	12,411	5,048	41		
Kaoliang	76,985	16,491	21	140,319	32,506	23	59,704	39,759	67		
Millet	80,502	17,283	21	132,971	25,137	19	241,850	142,687	59		
Proso millet	24,262	7,254	30	31,606	10,069	32	55,396	39,603	72		
Corn	70,674	29,065	41	129,949	59,527	46	9,516	6,528	69		
Soy beans	78,536	23,818	30	121,855	39,518	32					
Sweet potatoes	35,175	22,314	63	370,504	216,049	58					
Cotton	56,752	18,169	32	16,185	4,831	30					
Peanuts	22,839	9,247	40	54,788	19,956	36					
Sesame	21,746	9,294	43	17,016	6,911	41					
Tobacco	8,559	6,174	72	12,994	9,277	71					
LABOR ANIMALS—											
Water buffaloes											
Oxen											
Horses											
Mules											
Donkeys											
PRODUCTIVE ANIMALS											
Goats											
Sheep											
Hogs											
Chickens											
Ducks											
Geese											

Source: The National Agricultural Research Bureau.

Taking 1931-1937 as the prewar standard (100), the acreage of wheat, rapeseeds, corn, sweet potatoes, cotton, peanuts and sesame crops in 15 Free China provinces has been increased, while that of barley, field peas, broad beans, oats, soy beans and tobacco remains more or less the same. Other crops register slight decreases.

As to the production of winter crops, wheat, barley, broad beans, field peas, and oats registered an increase in 1938 over the prewar period, and there were additional increases in 1939 and 1940 in all crops, followed by a general slump in 1941 except for rapeseeds. Of the 12 kinds of summer crops, corn, sweet potatoes and peanuts exceeded the prewar standard throughout the war years, while glutinous rice, millet and soy

beans slightly decreased in production. Rice and kaoliang registered increased production in 1938 and 1939, but decreased in 1940 and 1941. In 1938, the production of cotton and sesame was slightly decreased, but began to increase over the prewar period in 1939, and continued to increase in 1940 and 1941. The production of proso millet has been decreasing in all the war years except in 1941.

Taking the winter and summer crops as a whole, the acreage decreased by one per cent in 1938 as compared with the prewar period, but increased by one per cent in 1939, two per cent in 1940, and three per cent in 1941. The production increased by six per cent in 1938, ten per cent in 1939, and two per cent in 1940, but decreased by two per cent in 1941. (See Tables 10 and 11.)

TABLE 10.—ACREAGE OF IMPORTANT CROPS IN 15 INTERIOR PROVINCES IN CHINA

CROP	ACREAGE (in 1,000 shih mow)					PREWAR AND WARTIME COMPARED (1931-1937=100)				
	1931-1937 Average	1938	1939	1940	1941	1931-1937 Average	1938	1939	1940	1941
WINTER CROPS										
Wheat	110,023	111,029	114,742	118,870	125,069	100	101	104	108	114
Barley	51,604	51,210	50,312	50,298	51,552	100	99	97	97	100
Fieldpeas	33,815	31,831	33,018	33,154	33,198	100	94	98	98	98
Broad beans	29,249	30,048	29,805	29,568	29,633	100	103	102	101	101
Rapeseeds	42,494	43,740	46,401	54,469	56,489	100	103	109	128	133
Oats	2,341	2,282	2,399	2,310	2,358	100	97	102	99	101
SUMMER CROPS										
Rice	210,868	206,341	207,048	198,714	198,258	100	98	98	94	94
Glutinous rice	19,898	17,788	17,146	15,757	14,056	100	89	86	79	71
Kaoliang	16,491	16,076	15,700	15,634	15,661	100	97	95	95	95
Millet	17,283	16,274	15,311	14,487	14,371	100	94	89	84	83
Proso millet	7,254	7,135	7,127	6,843	6,835	100	98	98	94	94
Corn	29,065	32,879	33,094	33,965	35,179	100	113	114	117	121
Soy beans	23,818	22,368	22,468	23,328	22,868	100	94	94	98	96
Sweet potatoes	22,314	25,193	25,616	27,469	28,941	100	113	115	123	130
Cotton	18,169	17,602	18,055	21,514	21,216	100	97	99	118	117
Peanuts	9,247	9,160	9,463	10,062	10,197	100	99	102	109	110
Sesame	9,294	9,057	9,771	10,505	10,183	100	97	105	113	110
Tobacco	6,174	6,057	6,187	6,626	6,124	100	98	100	107	99
TOTAL	659,401	656,070	663,663	673,573	682,188	100	99	101	102	103

Source: The National Agricultural Research Bureau.

TABLE 11.—CROP PRODUCTION IN 15 INTERIOR PROVINCES IN CHINA

CROP	PRODUCTION (in 1,000 piculs)					PREWAR AND WARTIME COMPARED (1931-1937=100)				
	1931-1937 Average	1938	1939	1940	1941	1931-1937 Average	1938	1939	1940	1941
WINTER CROPS										
Wheat	169,160	202,911	198,188	201,110	165,120	100	120	117	119	98
Barley	83,553	90,338	91,534	85,831	73,797	100	108	110	103	88
Field peas	41,295	43,694	47,172	43,064	37,548	100	106	114	104	91
Broad beans	44,120	47,644	52,359	47,715	41,906	100	108	119	108	95
Rapeseeds	36,642	35,846	43,111	48,539	45,630	100	98	118	132	125
Oats	2,961	3,118	3,375	3,048	2,877	100	105	114	103	97
SUMMER CROPS										
Rice	720,315	747,569	763,649	618,863	643,519	100	103	105	85	89
Glutinous rice	62,806	58,932	56,589	43,347	40,634	100	94	90	69	65
Kaoliang	32,506	33,997	34,299	31,264	29,665	100	105	106	96	91
Millet	25,137	23,814	23,990	21,171	20,706	100	95	95	84	82
Proso millet	10,069	9,269	9,645	8,631	10,108	100	92	96	86	100
Corn	59,527	70,371	71,293	67,039	66,533	100	118	120	113	112
Soy beans	39,518	36,470	37,646	38,576	34,714	100	92	95	98	88
Sweet potatoes	216,049	276,550	248,662	256,404	277,096	100	128	115	119	128
Cotton	4,831	4,688	5,833	6,078	5,381	100	97	121	126	111
Peanuts	19,956	21,901	22,420	22,799	22,848	100	110	112	114	114
Sesame	6,911	5,451	8,008	8,221	7,351	100	79	116	119	106
Tobacco	9,277	8,934	9,311	10,269	8,516	100	96	106	111	92
Weighted Average						100	106	110	102	96

Source: The National Agricultural Research Bureau.