WAR DAMAGE IN THE NANKING AREA

December, 1937 to March, 1938

URBAN AND RURAL SURVEYS

By

Dr. Lewis S. C. Smythe
(Professor of Sociology, University of Nanking)
AND ASSISTANTS

On Behalf of

THE
NANKING INTERNATIONAL RELIEF COMMITTEE
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Foreword

IN the course of its efforts to aid the impoverished and troubled people of Nanking and adjacent districts, the Nanking International Relief Committee early felt the necessity of discovering with reasonable accuracy their true economic position. What were both the extent and the nature of their losses? How far impaired are their opportunities and abilities for making a living? What supplies of food may be expected from the farms of this area? What are the fundamental deficiencies or obstacles that stand in the way of normal economic effort on the farms and in the city? Such questions were basic to any sound consideration of policy and methods in relief. The only good way to answer them was to go out to seek the facts.

The Nanking International Relief Committee here makes known the results of its inquiries primarily for the information of those concerned with the practice and the support of relief work in this and other areas; secondarily, for the wider public which is or should be concerned with the ravages of warfare among civilians, in whatever country. Our own position is humanitarian, without regard to the nationality of war victims. In this report we seldom use the terms "Chinese" and "Japanese", and consider persons simply as farmers, housewives or children.

The International Committee is aware, however, that statements have been published by Chinese, putting upon the Japanese an exclusive and exaggerated blame for the injuries to the people of the Nanking area; likewise that statements have been published by Japanese, charging the Chinese with burning and looting which they themselves benevolently checked. In order to guard against controversial misuse of the present report, we feel it necessary to make a brief factual statement as to the causation of the injuries listed.

The burning in the municipal areas immediately adjoining the walled city of Nanking, and in some of the towns and villages along the southeasterly approaches to Nanking, was done by the Chinese armies as a military measure—whether proper or improper, is not for us to determine. A very small amount of damage to civilian life and property was done by military operations along the roads from the southeast, and in the four days of moderately severe attack upon the city. Practically all of the burning within the city walls, and a good deal of that in rural areas, was done gradually by the Japanese forces (in Nanking, from December 19, one week after entry, to the beginning of February). For the period covered in the surveys, most of the looting in the entire area, and practically all of the violence against civilians, was also done by the Japanese forces—whether justifiably or unjustifiably in terms of policy, is not for us to decide. Beginning early in January, there gradually developed looting and robbery by Chinese civilians; and later, particularly after March, the struggle for fuel brought serious structural damage to unoccupied buildings. Also, there has latterly grown up in the rural areas a serious banditry which currently rivals and sometimes surpasses the robbery and violence by Japanese soldiers. In some portions of our report, these elements of causation can be distinguished.

From a humanitarian point of view, we venture merely to point out that losses to life and property from actual warfare are shown by these surveys to be one or two per cent of the total. The rest could have been prevented if both sides had wished to give sufficient consideration to the welfare of civilians, including reasonable protection by military and civilian police.

The International Committee which authorised these surveys had within its membership a trained sociologist, Dr. Lewis S. C. Smythe Professor of Sociology at the University of Nanking, who not only had general experience in survey methods, but also had taken a responsible part in two earlier surveys of calamities in this region. These inquiries were: the Economic Survey made on behalf of the National Flood Relief Commission by the Department of Agricultural Economics of the College of Agriculture and Forestry of the University of Nanking (report published by Professor J. Lossing Buck, Director, under the title "The 1931 Flood in China"); and the Survey of the Rural Areas Affected by the Shanghai Hostilities (1932), made at the request of the Minister of Finance by the same Department of Agricultural Economics (unpublished). Both these surveys were for the purpose of ascertaining actual needs as against vague or tendencious reports from local officials. The accomplishment of the present surveys is largely dependent upon the unusual abilities and energies of Dr. Smythe, even though he has not been able to give full time to them while acting both as Treasurer and as Secretary of the International Committee. Full acknowledgment is due to the surveys mentioned above, which were drawn upon both for points of method and for check or comparison of results. Likewise to the vast survey recently completed under Professor Buck's direction, and reported in his book, *Land Utilization in China,* with supplementary *Atlas* and volume of *Statistics.*

M. S. BATES

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TABLE 15

NUMBER OF BUILDINGS DAMAGED OR LOOTED ON MAIN BUSINESS STREETS,

According to type of building, and cause, shown in percentages

Street	*Number of buildings*	*Per cent damaged by*			
		Military operations	*Fire*	*Looting*	*All causes*
1. Tai Ping Road	233	1.7	68.2	26.6	96.6
2. Chung Hwa Rd.	319	3.1	51.4	43.9	98.4
3. Chien Kang Rd.	585	0.5	47.5	49.6	97.6
4. Pai Hsia Road	411	3.1	34.3	61.1	98.5
5. Sheng Chow Rd.	320	—	25.0	53.1	78.1
6. Chung Shan Rd.	498	5.0	15.5	53.6	74.1
7. Chu Chiao Road	122	—	7.4	76.2	83.6
8. Chung Cheng Road	340	5.9	3.8	75.9	85.6
Total for business streets	2,828	2.7	32.6	54.1	89.4

TABLE 16

LOSSES BY DAMAGE AND LOOTING OF BUILDINGS AND CONTENTS ON MAIN BUSINESS STREETS, ACCORDING TO CAUSE,

shown in percentages

Streets	*Losses in dollars*	*Per cent caused by*			
		Military operations	*Fire*	*Looting*	*Unknown*
1. Chung Hwa	12,452,145		77.0	18.5	4.5
2. Chung Cheng	11,088,775	1.7	86.6	11.7	
3. Tai Ping	9,327,530		49.7	29.0	21.3
4. Chung Shan	5,591,070		39.2	60.8	
5. Chien Kang	4,306,030		97.8	2.2	
6. Pai Hsia	3,819,095	4.2	69.3	26.5	
7. Sheng Chow	2,129,655		35.4	46.9	17.7
8. Chu Chiao	944,725		16.6	72.3	11.1
Total for business streets	49,659,025	0.7	65.2	28.0	6.1

TABLE 17

POPULATION AND CULTIVATED AREA OF FIVE HSIEN OF NINGSHU

Hsien	*Part of hsien studied*	*Number of farm families* studied*	*Average size of family***	*Average size of farm (mow)*	*Represented in survey (in thousands)*			*Total (in thousands)*		
					*Number of farm families in area studied****	*Cultivated area (mow)*	*Resident rural population***	*Farm families****	*Cultivated area† (mow)*	*Rural population††*
Kiangning	1	205	5.3	16.7	81.6	1,336.0	433.3	81.6	1,431.0	492.9
Kuyung	1	195	5.7	11.6	39.6	461.3	227.3	39.6	731.0	279.7
Lishui	1	199	6.1	20.8	27.8	577.4	170.7	27.8	525.8	276.7
Kiangpu	1	174	7.0	39.4	15.8	623.1	110.9	15.8	302.8	123.9
Luho	0.5	132	6.4	21.8	21.2	463.7	135.8	21.2	464.0	178.6
Totals	4.5	905	5.8	18.8	186.0	3,491.5	1,078.0	186.0	3,454.6	1,351.8

*In the present study the "family" is all persons living and eating together and therefore corresponds to "household", as used by Buck and some others.

**The figures for average size of family represent those persons actually reported in this survey as residents in families visited in March. Compare Table 23 for possible adjustments on account of war migration, which suggest that the original size of these same families was 6.5; and proportionately, the original farm population was 1,211,200. Buck gives 6.0 per farm household for the Yangtze Rice-wheat Area, and 7.2 (on one type of data only) for Kiangning Hsien. His figures for the farm family are clustered near 5.0 for the Area, but are all from sources prone to under-reporting, especially of children; he gives none for Kiangning or other hsien in Ningshu. J. L. Buck: *Land Utilization in China, Statistics*, p. 421.

****Statistics* p. 417. Buck's figure is employed as the best available. At the time of this survey, the figure might be reduced by as much as 30 per cent through the absence of whole families who leave no trace in the survey of farm families. (See appendix B, where this problem is discussed in reference to its bearing on other results.) In the matter of losses, which bulk large in the present report, such a reduction would not be critically significant, since presumably the absent families lost at least as heavily as the resident ones. Kaoshun had 32,100 farm families but is not included in survey. For the one-half of Luho the figure actually used was 21,250 farm families.

†*Ibid.*, p. 24.

††D. Y. Lin. Letter, March 2, 1938. (Mr. Lin was formerly head of the Ningshu Agricultural Relief Association; and for years was a leading agricultural expert and administrator in this region.)

TABLE 18

VALUE OF FARM LOSSES*
(in thousands of dollars)

Hsien	*Buildings*	*Labor animals*	*Implements*	*Stored grain*	*Crops destroyed*	*All losses reported*	*Per cent of all losses reported*	*Per cent of all families represented*
Kiangning	12,078	3,541	2,785	1,898	210	20,512	50%	44%
Kuyung	2,438	1,050	927	1,122	272	5,809	14%	21%
Lishui	6,042	585	987	686	98	8,398	21%	15%
Kiangpu	2,449	698	301	252	69	3,769	9%	9%
Luho (½)	993	794	241	218	116	2,362	6%	11%
Total	24,000	6,668	5,241	4,176	765	40,850	100%	100%
Per cent of all losses reported	58.8%	16.3%	12.8%	10.2%	1.9%	100.0%		
Losses per family in dollars	$129.00	$35.84	$28.17	$22.44	$4.11	$219.56		

*For unit values see Table 20.

TABLE 19

AVERAGE LOSSES PER FAMILY

Hsien	*Number of chien completely destroyed**	*Number of labor animals*	*Number of implements*	*Stored grain (shih-tan)*	*Number of mow of winter crops destroyed*	*Total losses reported per family** (dollars)*
Kiangning	1.90	0.84	4.67	6.11	0.62	$251
Kuyung	0.79	0.43	2.31	7.46	1.40	147
Lishui	2.79	0.38	3.09	7.21	0.77	302
Kiangpu	1.99	0.74	2.63	4.66	0.72	239
Luho (½)	0.60	0.73	2.88	2.73	0.89	111
Average for 4.5 hsien	1.66	0.66	3.55	6.05	0.85	$220

* A *chien* is the space between main rafters, not corresponding to the division between rooms. It has a nearly standardized width of 10 to 12 feet; a variable length, averaging in this region 15 to 18 feet. Thus the average floor space is about 175 square feet. The number of *chien* per building averages about 4.2 in this region for residences, about 2 for other farm buildings. Compare Buck, *Land Utilization*, pp. 440—442, where the less common romanization *gien* is employed. These measurements are in terms of the Chinese carpenter's foot, equal to about 12.6 English inches or .32 meter, according to Buck, and to about 13.25 English inches according to other authorities."

** For unit values, see Table 20.

TABLE 20

LOSSES OF FARM FAMILIES WITH DETAIL OF ITEMS

Items	Average amount lost per family	Unit value*	Value of average loss per family	Total losses of all farm families	Total value of losses for all farm families
	(chien)			(chien)	
1. Buildings	1.656	$77.90	$129.00	308,100	$23,999,500
2. Labor animals	(head)		35.84	(head)	6,668,100
Water buffaloes	0.313	70.00	21.91	58,200	4,076,500
Oxen	0.137	55.00	7.55	25,500	1,404,600
Donkeys	0.213	30.00	6.38	39,600	1,187,000
3. Farm implements	(pieces)		28.17	(pieces)	5,241,100
Plows	0.509	6.50	3.31	94,700	615,300
Harrows	0.449	5.50	2.47	83,700	460,000
Pumps	0.618	33.00	20.41	115,100	3,798,100
Hoes	1.976	1.00	1.98	367,700	367,700
4. Stored cereals	(shih tan)		22.44	(shih tan)	4,175,900
Wheat	1.002	5.00	5.01	186,400	931,800
Barley	0.451	3.00	1.35	84,000	252,000
Rice	2.507	3.00	7.52	466,400	1,399,100
Corn	0.234	2.75	0.64	43,500	119,700
Soybeans	1.563	4.30	6.72	290,800	1,250,300
Others	0.300	4.00	1.20	55,700	223,000
5. Winter crops	(shih tan)		4.11	(shih tan)	765,200
Wheat	0.616	5.00	3.08	114,600	572,900
Barley	0.212	3.00	0.63	39,500	118,300
Rapeseed	0.019	4.50	0.08	3,500	15,700
Broad beans	0.042	4.00	0.17	7,700	31,000
Field peas	0.035	4.20	0.15	6,500	27,300
Total			$219.56		$40,849,800

*The unit value, except in the case of buildings, is based on the average prices found in the market towns during the survey. These market town prices are moderate, some of them markedly low, in the actual lack of buyers and the generally uncommercial conditions of the time. For the building unit value, see Table 26, Note 2.

TABLE 21

ESTIMATE OF VOLUME OF WINTER CROPS

Items used in estimate	Total winter crops	Winter Crops*				
		Wheat	Barley	Rapeseed	Broad beans	Field peas
1. Average number of mow planted per farm	8.75	5.83	1.82	0.29	0.34	0.47
2. Total number of mow planted	1,628,600	1,085,100	338,200	53,300	63,600	88,400
3. Total number of planted mow destroyed	137,200	89,200	31,000	4,500	7,100	5,400
4. Planted mow not destroyed	1,491,400	995,900	307,200	48,800	56,500	83,000
5. Per cent of normal crop expected on area not destroyed	62.7	63.6	58.3	60.4	64.6	67.1
6. Most frequent yield in *shih tan* per per mow**	—	1.285†	1.273	0.772	1.090	1.198
7. Total crop expected***	1,171,800	814,400	228,100	22,800	39,800	66,700
8. Average amount of crop available per family****	3.82	2.66	0.74	0.07	0.13	0.22

*In addition to above crops was 0.34 mow planted to vegetables but it was impossible to estimate yield. This would add 42,000 mow to the total of planted mow, not destroyed, in item 4. (See Tables 30 and 31).

**Calculated from quintals per hectare as given by Buck, for Yangtze Rice-Wheat Area. (*Land Utilization in China*, "Statistics" pp. 223, 225, by 1 Kiangning mow=0.06067 hectares and 1 quintal=2 *shih tan*, *Ibid.*, p. 473.

***These estimates are the sums of the crops expected in each hsien, or the products of items 4 x 5 x 6.

****Based on 239,450 families in the 4.5 hsien (including town families) and 67,000 families in Nanking, a total of 306,450 families. Buck, *Ibid.*, p. 417.

†R. T. Ts'ui in a forthcoming article in "Economic Facts" finds the most frequent yield of wheat in Kiangning to be 1.74 *shih tan* per *shih mow*, that is, 1.583 *shih tan* per Kiangning mow.

TABLE 22

TOTAL SEED REQUIREMENTS FOR SPRING PLANTING

Hsien	*Seeds for spring crops* (shih tan)*						*Total require-ments in dollars†*	*Average per farm family in dollars*
	Rice	*Soybeans*	*Corn*	*Cotton*	*Sweet potatoes*	*Vege-tables*		
Kiangning	57,900	19,100	3,500	150	—	163	$266,000	$3.26
Kuyung**	6,800	1,800	—	190	3,500	4	37,300	0.94
Lishui	16,000	700	—	470	3,900	—	61,900	2.23
Kiangpu	21,300	600	1,800	1,020	600	—	76,100	4.82
Luho*** (½)	23,200	5,500	—	—	—	—	93,100	4.38
Average per family for 4.5 hsien	0.673	0.149	0.029	0.010	0.043	0.001	—	$2.87
Total seed for 4.5 hsien	125,200	27,700	5,300	1,830	8,000	167	—	—
Total value of seed needed in dollars for 4.5 hsien†	$375,600	$119,100	$14,600	$5,100	$20,000	$34,000	$568,400	—

* The amounts of seed needed include what could be purchased locally but for which the farmer did not have money, as well as seed that could not be purchased locally.

** The Kuyung investigators with unusual strictness pinned the farmers down to considering seed requirements only for that fraction of land which they planted last year but could find no possible way to plant this year.

***In Luho the investigators soon came to feel that farmers were exaggerating their requirements of rice for seed, because of a local shortage of food rice. As a limitation, the investigators arbitrarily set the figure of one *tou* (11.7 *shih chin*) per mow. Thus the rice-seed figure for Luho was originally reported on the basis of calculation from the area of expected planting. The few initial cases in which the Luho investigators reported the farmer's own figure, give an average of 7.64 *shih-chin* per mow which is here used to calculate seed needs from area planted, in lieu of satisfactory data. For other seeds, the Luho investigators recorded the farmer's statements without meeting serious problems.

† The unit values used in computing the value of seed needed were the same market town prices as given in Table 20 with the addition of $2.80 per *shih tan* for cotton seed and $2.50 for sweet potatoes. For vegetable seed an estimated value of $198 per *shih tan* is reached by calculation from two factors: (1) the ratio of the quantity of each important kind of seed needed by Nanking gardeners (as reported in the special garden group of the Family Survey), to the total quantity of seed needed by them; (2) for each kind of seed, a price per *shih tan* based on half the quoted price in the latest edition of the University of Nanking Seed List (in most items that List was far below what the International Committee actually paid in Shanghai for vegetable seeds purchased this spring.)

TABLE 23

MIGRATION AND LABOR SUPPLY*

Hsien	*Estimated total original population*	*Number of people left and not returned*	*Per cent left and not returned*	*Number of laborers*			*Expected shortage of laborers*	*Per cent of expected shortage of laborers*
				During past year	*At present*	*Expected back soon*		
Kiangning	544,300	110,980	20	264,400	213,800	32,600	18,000	7
Kuyung	229,300	1,980	1	95,400	87,900	1,200	6,300	7
Lishui	181,200	10,560	6	54,800	45,900	2,200	6,700	12
Kiangpu	112,300	1,420	1	45,700	40,900	600	4,100	9
Luho (½)	144,100	8,290	6	66,900	58,900	400	7,700	11
Total	1,211,200	133,230	11%	527,200	447,400	37,000	42,800	8%
Average per family for 4.5 hsien	6.5	0.7		2.8	2.4	0.2	0.2	

*Consult Appendix B.

TABLE 24

SEX AND AGE OF DEATHS

shown in percentages

Age group	*Death by violence*		*Deaths by sickness*	*All deaths*	*Per cent of males in killed*
	Male	*Female*			
Under 5 years	3	—	—	2	100
5—14	9	6	14	9	92
15—29	35	11	9	30	96
30—44	24	—	22	21	100
45—59	21	44	41	26	77
60 and above	8	39	14	12	59
Total	100	100	100	100	84

TABLE 25

NUMBER AND CAUSES OF DEATHS
(during 100 days covered by study)

Hsien	*Total resident population represented*	*Total deaths*	*Deaths per 1,000 residents*	*Causes of Death*			*Total killed*	*Number killed per 1,000 residents*	*Deaths from sickness per 1,000 residents*
				Violence		*Sickness*			
				Males	*Females*				
Kiangning	433,300	10,750	25	7,170	1,990	1,590	9,160	21	3.7
Kuyung	227,300	9,140	40	6,700	1,830	610	8,530	37	2.7
Lishui	170,700	2,370	14	1,540	560	280	2,100	12	1.6
Kiangpu	10,900	5,630	51	4,990	—	630	4,990	45	5.7
Luho (½)	135,800	3,060	23	2,090	—	970	2,090	15	7.1
Total	1,078,000	30,905	29	22,490	4,380	4,080	26,870	25	3.8*

*Buck in *Land Utilization* gives an annual rate per 1,000 of 27.1 (p. 338). The same rate for 100 days would equal 7.4 per 1,000. See discussion in text.

TABLE 26

DAMAGE TO BUILDINGS

Hsien	*Original number of chien* per family*	*Number of chien completely destroyed per family*	*Per cent all chien completely destroyed*	*Number of chien completely destroyed*	*Average loss per family in dollars***	*Total building loss in dollars***
Kiangning	4.03	1.90	46	155,000	$148.01	$12,077,600
Kuyung	2.99	0.79	26	31,300	61.55	2,437,300
Lishui	4.72	2.79	59	77,600	217.34	6,042,100
Kiangpu	4.76	1.99	42	31,400	155.02	2,449,300
Luho (½)	4.54	0.60	13	12,800	46.74	993,200
Total						$23,999,500
Average per family for 4.5 hsien	4.17	1.656	40	308,100	$129.00	

* See explanation in footnote Table 19.

** The building value per *chien* is Buck's average for the Yangtze Rice-wheat Area, (*Land Utilization* pp. 441, 445) dividing total value of buildings per family ($631) by the total number of *chien* (8.1) per farm ($77.90). If this calculation is made by types of buildings, giving due value and weighting for each, the result would be $74.77 per *chien*. If Buck's valuation of all buildings per farm ($631) were divided by our reported original number of *chien* per surveyed farm (4.17), the valuation per *chien* would be $151.32. All these are Area figures.

R. T. Ts'ui's current and careful study, "Land Classification of Kiangning Hsien" (soon to appear in *Economic Facts*), shows a valuation of $743 for buildings, livestock, farm implements, furniture. Buck's *Chinese Farm Economy*, p. 57, reports that in the items buildings, livestock, farm equipment, and supplies, the first-named count for 69 per cent in Kiangsu. This percentage of Ts'ui's $743 would give $512.67 as value of buildings per farm in Kiangning Hsien, so important in our study. If this figure is divided by 4.03, our reported number of *chien* per family in that hsien, the result is a valuation of $127.21 per *chien*.

The fundamental difficulty in setting a unit value for buildings is that Buck's estimates for the Area are based upon nearly double the number of *chien* per farm that were reported to our investigators in this locality. (He has no figures for individual hsien in our group.) However, our report of 4.17 *chien* per farm is supported by Buck's results for South Kiangsu (4.0 *chien*) in *The 1931 Flood in China*, p. 17. If his valuation per *chien* is multiplied by a factor from our lower figures as to number of *chien*, the results are probably below the truth. If, on the other hand, his or other valuations of all buildings are divided by our low figures for *chien*, the value per *chien* is probably too high. In the interests of caution, we will follow the first type of valuation. Our loss figure for buildings might well be increased by half.

TABLE 27

LOSSES OF LABOR ANIMALS

Hsien	Percent of families losing			Number lost per family				Losses in 4.5 hsien	
	Water buffaloes	*Oxen**	*Donkeys*	*Water buffaloes*	*Oxen*	*Donkeys*	*All*	*Number*	*Value***
								(head)	
Kiangning	27	16	18	0.33	0.20	0.31	0.84	68,500	$3,541,400
Kuyung	28	8	6	0.29	0.08	0.06	0.43	17,000	1,049,400
Lishui	10	20	3	0.11	0.21	0.06	0.38	10,600	585,200
Kiangpu	44	—	20	0.55	—	0.19	0.74	11,700	698,400
Luho (½)	34	2	32	0.38	0.01	0.34	0.73	15,500	793,700
Average per family 4.5 hsien	27	12	15	0.31	0.14	0.21	0.66		$35.84
Total								123,300	$6,668,100

* The term "oxen" is used for convenience to represent draft cattle, whether steers, bulls or cows. There are practically no dairy cattle in these farm localities.

** For unit value, see Table 20.

TABLE 28

LOSSES OF IMPLEMENTS

Hsien	Per cent of families losing				Number lost per family				Total number of implements lost	Average loss per family in dollars	Total loss in dollars**
	Plows	*Harrows*	*Pumps**	*Hoes**	*Plows*	*Harrows*	*Pumps*	*Hoes*			
Kiangning	50	51	57	78	0.55	0.54	0.75	2.83	381,100	34.12	$2,784,600
Kuyung	39	37	44	46	0.46	0.43	0.52	0.90	91,500	23.41	927,300
Lishui	58	47	58	67	0.78	0.49	0.81	1.01	85,900	35.50	986,900
Kiangpu	31	30	35	34	0.37	0.35	0.40	1.51	41,500	19.04	300,800
Luho	19	16	21	49	0.19	0.16	0.21	2.32	61,200	11.39	241,500
Average per family for 4.5 hsien	44	42	49	63	0.51	0.45	0.62	1.98	3.55	$28.17	$28.17
Totals									661.200		$5,241,100

* The term "pumps" refers to the wooden, many bladed irrigation pumps on the endless-chain principle. "Hoes" include not only the type familiar in the west, but also the heavy, four-tined variety used instead of a spade.

**For unit values, see Table 20.

TABLE 29

LOSSES OF STORED GRAIN

Hsien	Per cent of families losing						Number of shih tan lost per family							Total amount of grain lost	Total loss in dollars*
	Rice	Wheat	Soy-beans	Barley	Corn	Other	Rice	Wheat	Soy-beans	Barley	Corn	Other	All		
Kiangning	72	19	54	1	14	2	1.96	0.53	3.02	0.02	0.52	0.06	6.11	498,900	$1,897,700
Kuyung	71	63	61	39	3	14	3.67	2.45	0.68	0.45	0.005	0.20	7.46	495,200	1,122,600
Lishui	81	53	38	56	—	11	2.87	0.80	0.57	2.28	—	0.69	7.21	200,500	685,700
Kiangpu	30	10	2	1	7	13	2.96	0.19	0.04	0.01	0.004	1.46	4.66	74,100	251,900
Luho	51	32	4	2	—	—	1.64	0.98	0.07	0.04	—	—	2.73	58,100	218,000
Average per family for 4.5 hsien	67	34	43	17	7	7	2.51	1.00	1.56	0.45	0.23	0.30	6.05		$22.44
Total														1,126,800	$4,175,900

* For unit values, see Table 20.

TABLE 30

AREA PLANTED TO WINTER CROPS

(in thousands of mow)

Hsien	Total cultivated area	Total area planted to winter crops	Total mow by crops					
			Wheat	Barley	Rape seed	Broad beans	Field peas	Vege-tables
Kiangning	1,366	693	516	57	9	21	55	35
Kuyung	461	315	177	84	11	22	10	11
Lishui	577	233	68	117	22	1	8	17
Kiangpu	623	260	184	40	1	20	15	—
Luho (½)	464	190	140	40	10	—	—	—
Total	3,491	1,691	1,085	338	53	64	88	63

TABLE 31

PER CENT OF AREA PLANTED TO WINTER CROPS TOTALLY DESTROYED

Hsien	Per cent of all winter crops destroyed	Individual			Crops		
		Wheat	Barley	Rape-seed	Broad beans	Field peas	Vege tables
Kiangning	7	5	6	27	14	4	40
Kuyung	18	17	16	14	13	19	50
Lishui	9	11	10	1	33	11	6
Kiangpu	4	5	2	1	3	1	—
Luho	10	12	5	—	—	—	—
Total for 4.5 hsien*	9	8	9	8	11	6	33

* Weighted by hsien according to number of mow planted.

TABLE 32

EXPECTED PER CENT OF NORMAL WINTER CROPS ON PLANTED AREA NOT TOTALLY DESTROYED

Hsien	*Individual crops*					*Average crop expected per farm family* (shih tan)*	*Total winter crops* (shih tan)*
	Wheat	*Barley*	*Rapeseed*	*Broad bean*	*Field peas*		
Kiangning	62	41	48	50	65	5.81	474,000
Kuyung	72	73	79	80	77	5.87	232,400
Lishui	53	55	46	70	53	4.58	127,400
Kiangpu	69	70	81	62	74	13.66	215,800
Luho (½)	57	54	80	—	—	5.75	122,200
Per cent for 4.5 hsien	64	58	60	65	67	—	63%
Average volume expected per farm family* *shih tan*	4.38	1.23	0.12	0.21	0.36	6.30	
Total crops expected* *(shih tan)*	814,400	228,100	22,800	39,800	66,700		1,171,800

* Based on most frequent yield per mow (see Table 21). The grand average by crop is weighted by hsien according to number of mow planted, not destroyed.

INTRODUCTION

ORGANIZATION AND METHOD*

The International Committee's Surveys were really two, though each of them was compound. The City Survey was essentially an inquiry among families resident in Nanking, supplemented by an investigation of all buildings unoccupied as well as occupied, and also separating for special attention as food-producers the market gardeners who are scattered through three or four sections of the city. The Agricultural Survey was essentially an inquiry among resident farm families, supplemented by a village survey described in Appendix B, and by the listing of significant prices in market towns.

1. FIELD PROCEDURE.

The family investigators in the City Survey in Nanking were instructed to fill out a family schedule for every family in every 50th inhabited house. A "House" was defined as a "house number" even though in some instances there were several apartments or buildings at one number. In March many entrances were barred, and there was some little difficulty in determining which houses were inhabited. Consequently, some may have been passed over. A control map served to check areas skipped. Each man was assigned a specified section on the map to cover and to record the count of house numbers in selecting his 50th inhabited house. The investigators were well received because of the favorable reputation of the Committee but were careful to explain that they came only to inquire about facts and not as the family relief investigators working in the regular service of the Committee. Men who participated in both activities thought very definitely that the Family Survey was much less subject to exaggeration of losses than the relief investigations.

The building investigators in the City Survey had two tasks: (1) to count every building in the city and indicate whether it had been damaged by military operations, fire or looting; and (2) to make an estimate of the loss on every 10th building. For the purpose a house number was considered a "building", though in some cases it included more than one structure. A well-trained construction engineer worked out unit-cost figures for each of the common types of construction, which greatly facilitated the accuracy of these estimates. Furthermore, of each pair of investigators, one was a contractor. Estimates on loss of contents in uninhabited buildings had to be based on the nature of the building and inquiries from neighbors. A control map located areas overlooked and these were carefully re-done.

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*This "Introduction" is written to inform general readers as to how the surveys were conducted. Those interested in technical considerations are referred to Appendix A, "Further Notes on Organization and Method."

Both the family and building investigations covered the whole of the city inside the walls and the areas just outside some of the gates as well. But they did not take in all that formerly comprised the Nanking Municipality, which included Pukow and a number of surrounding small towns. Only certain small areas and scattered individual houses inhabited by the Japanese military or civilians could not be studied.

In the Agricultural Survey two investigators were sent out across each of the six hsien armed with passes from three organizations. They were instructed to follow a main road one way and then to return zigzagging across the main road in the form of a figure eight in order to cover the areas back from the main roads. On this circuit they were to secure a village schedule from every third village on their route and in that village fill out one farm schedule for every tenth farm family that had returned to the village. A market town price schedule was to be answered for every market town passed through.

2. TIME OF DATA.

The field work for the Agricultural Survey extended from March 8th to 23rd. For the City Survey the family investigation extended from March 9th to April 2nd with supplementary work April 19th to 23rd; the building investigation, from March 15th to June 15th. During the longer period for the building investigation there was little change in contents already lost, but there were some cases in which partial taking away of building materials occurred. Rebuilding during the period was practically nil.

3. STATISTICAL PROCEDURE.

Both in training the investigators and in supervising the tabulation work it was fortunate that an experienced man trained in Agricultural Economics was available as supervisor; and some men who formerly worked in Professor Buck's tabulation department were here to help in that work. In the writing of the report and the interpretation of the results of the survey the Director has had the invaluable cooperation of Dr. M. S. Bates of the University of Nanking whose extensive knowledge of economic history and of conditions in China has thrown additional light on the statistical findings.

Both the Agricultural and Family Surveys were based on a sample instead of attempting complete enumeration. Consequently, totals and grand averages are estimates based on results learned in the cases studied. But with the exception of rice seed for Luho, explained in the proper place, the data on which the estimates in the tables are based remain as reported by the investigators.

In the Agricultural Survey the average per farm family studied was worked out by hsien and then that average was multiplied by the total number of farm families in each hsien, as given by Professor Buck in his *Land Utilization in China*. The grand total was secured by adding up the hsien totals and any grand averages were then computed from these totals, thereby giving grand averages weighted according to the number of farm families in each hsien. Although a village schedule was used to get a broader picture of general conditions, all calculations were based on the farm schedule. (See Appendix B.)

The totals in the family investigation of the City Survey were calculated by multiplying by 50 the average per family secured from a study of every 50th

inhabited house. Likewise the estimates of loss in the building investigation were computed by multiplying by 10 the total loss secured from a study of every 10th building. In the printed tables, the convenience of the reader has been considered by dropping as many decimal places as possible. All totals are given in round hundreds.

4. UNITS OF WEIGHT, MEASUREMENT AND CURRENCY:

The measure of grains and vegetables was a *shih tan* by weight which is 100 *shih chin*, or one-half the metric quintal. This is 50 kilograms or 110.23 pounds, which is very close to the English hundredweight (112 lbs.), and is 0.83 of a picul. The mow used for measure of area is the local mow as reported by the farmers; but in calculations the Kiangning mow has been used, as it represents two-fifths of the cultivated area studied. It is equal to 0.06067 hectares. The *shih mow* (standard mow) referred to on occasion is slightly larger, 0.06667 hectares or one-sixth of an acre.

All monetary values in these reports are in Chinese currency. For the period covered in the surveys, the Chinese dollar was practically steady at about $3.40 per United States dollar or $17.00 per British pound.

LEWIS S. C. SMYTHE.

I. CITY SURVEY

1. POPULATION

The city of Nanking had before the war a population of just 1,000,000, which was considerably reduced by repeated bombings and latterly by approaching attack and the removal of all Chinese governmental organs. At the time the city fell (December 12-13), its population was between 200,000 and 250,000. The persons reported in our sampling survey in March, multiplied by 50, give 221,150 as the population directly represented by the City Survey. This number was probably 80 to 90 per cent of the total residents at that time, some of whom lived in places not accessible to investigators. (See Note to Table 1 for fuller discussion of population).

27,500 persons were living in refugee camps maintained by the International Committee, 12 per cent of the surveyed population.[1] Outside the camps, but within the Safety Zone Area were an additional 68,000 persons, 31 per cent of the total. Some idea of the crowding, the price willingly paid for partial security, is indicated by the fact that 43 per cent of the population, 14 weeks after the fall of the city, was living in an area which had only 4 per cent of the total number of buildings noted in the Survey, and which comprised roughly one-eighth of the total area within the walls. The fact that practically no burning occurred within the Zone was a further advantage, and suggests the generally preferential treatment given to the Zone area as compared with the destruction and violence outside, even though the Zone was not officially recognized by the Japanese authorities.[2]

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[1] At its maximum in the second half of December and in January, this number was 70,000. The reduction was irregularly due to the following causes: crowding and discomforts of the camps, though they were generally preferred to the greater dangers and difficulties outside; the need to care for homes and remains of property, whenever there was sufficient security to make the effort worth while; encouragement by the International Committee for return to other parts of the city in every possible case; threats of forcible eviction from the camps as of February 4, fortunately not realized in action, but bringing about much unnecessary suffering and many regrettable incidents.

[2] We must here trace the divisions of the city as used for the purpose of the Survey. The Safety Zone Area was bounded by Han Chung Road on the South; by North Chungshan Road from Hsin Chieh K'ou past the Drum Tower to Shansi Road, on the east and northeast; by Shansi Road on the north, continued to Sikang Road, which formed the westerly boundary. Within the Safety Zone Area were the Refugee Camps, reported separately. South of the Safety Zone Area lay Cheng Hsi, reaching to Shengchow Road, and bounded on the east by Chungcheng and Chunghwa Roads. The remaining southwest corner of the city was called Men Hsi. The southeastern corner, north to Pai-hsia Road and east to Tungchimen, was considered as Men Tung. The region from Chungcheng Road eastward to the wall was named Cheng Tung. All the remaining northwestern, northern, and northeastern (as far south as East Chungshan Road) sections were considered Cheng Pei. For purposes of the building investigation, Cheng Pei Tung was split off from Cheng Pei; this eastern section of the north City ran from North Chungshan Road to the wall bounded on the north by the Drum Tower and Peichiko. The four sections outside the wall are easily recognized by their names; the Shuihsimen Area extended northward past Hanchungmen. (See City Survey map of Nanking.) The family investigators found the area outside Tungchimen deserted. Con-

The average size of family for all sections was 4.7. Outside the wall, the average was 4.0, suggesting the presence of more men without families, or of more broken families. Compare the 1932 figures for 2,027 families in the same portions of Nanking from which many of the present population are derived. They show an average family of 4.34.[1] It is probable that in normal times there are more persons detached from their families for reasons of employment. The data on population are given in Table 1.

DISTRIBUTION BY SEX AND AGE

The March population of Nanking showed clearly the characteristics of a war time population. The present survey reports for all ages, in all sections of the city, a sex ratio of 103.4 (males to 100 females);[2] while the 1932 study showed for all ages 114.5; and in the entire population before the war, there was a very high ratio of males to females, at one time 150. The drop of 9 points in the sex ratio since 1932 is accounted for in part by the withdrawal of males not native to Nanking but formerly working here, and in part by the killings of males in the critical period. Most serious is the acute fall in the ratio for the age-group 15 to 49 years, which roughly represents the productive life of the population; here the decline was from 124 to 111, or 11 per cent. This change presents the fact that a large number of women and children are deprived of men who were the support of the family. If the comparison is carried into narrower age-groups, fluctuations are found because of the fewer cases forming the base for each figure; but the results for the 25 years of young maturity are sufficiently consistent to be startling: 15-19 years, 108 now as against 123 in 1932; 20-24 years, 106/124; 25-29 years, 100/128; 30-34 years, 89/123; 35-39 years, 105/123. The decline in the males of productive age is shown in another manner. Of all males in 1932, those 15 to 49 years old were 57 per cent; in the present survey, they were only 49 per cent, a decrease at the rate of 14 per cent, which constitutes a serious economic and social problem. Correspondingly, of all males those over 50 years of age gained from 13 per cent in 1932 to 18 per cent now, an advance of some 30 per cent.

The variations in sex ratios by sections of the city are of some importance. Although the ratio for all sections was 103, for the refugee camps it was only 80, since they were overcrowded with women seeking security; on

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sequently, it does not occur in the family investigation but is included in the building investigation.

The normally crowded sections in the southerly portions of the city (Cheng Hsi, Men Hsi, Men Tung), were the first to show a fair degree of recovery from the practically complete depopulation of the critical period. Together they had 81,000 residents, 37 per cent of the total. (By June this number of residents had doubled, according to the City Government records of registration.)

The sections thus far named had practically 80 per cent of the total for the city. There were only 8,550 persons in the districts studied outside the wall, which suffered so terribly from the burning by the Chinese army and from violence, and in March were still more dangerous on the whole than the inner city.

[1] Smythe, "The Composition of the Chinese Family," *Nanking Journal*, University of Nanking, November, 1935, v. 5, No. 2, p. 371-393.

[2] The May 31 registration figures of the Municipal Government, patently incomplete for females, show 109.4.

the other hand, in the less secure areas the men were relatively much more numerous, as is shown by the ratios for Cheng Pei, 121, the garden group, 150, outside the wall, 144. If we consider the ages for which security was a most acute problem, 15 to 39 years, we find in the refugee camps sex ratios running very low, from 40 to 67 in different five-year units; for the Safety Zone Area, roughly 90; for Cheng Hsi over 150, for outside the wall, well over 200. Thus men were returning first to the more dangerous localities, with old women and children following along more or less closely; but many of the young women remained in places of relative safety.

The data on sex and age are given in Table 2.

FAMILY COMPOSITION

The families remaining in Nanking were classified as "Normal," that is, either husband and wife or husband and wife with children living together; "Broken," man or women with children; and "Non-family," man alone or woman alone. Then each of these three types was repeated "with relatives."

The "normal" families were much fewer in proportion to all families than in an earlier study made among Nanking people in more settled times, 1932: now only 4.4 per cent with husband and wife as compared with 9.5; now only 26.2 per cent with husband, wife and children instead of 33.1 per cent. This represents a reduction of these types by one-fourth. A slight increase in "Normal with Relatives" occurred: 32.3 per cent as compared with 29.8 per cent in 1932. In other words there is a net loss of normal families amounting to 9.5 per cent of the total families, or one-seventh reduction of normal families.

This decline in normal families is largely due to an increase in the broken families, 21.4 per cent as compared with only 12.9 in 1932, or an increase of 8.5 per cent for the four types of broken families. Of that increase 6.9 per cent was in families without a man for support, that is, families consisting of only women with children. This means that the number of broken families was almost doubled. This increase in broken families is more clearly understood when we realize that 14.3 per cent of the members of the families remaining in Nanking had migrated, but only 2.2 per cent of the wives lost husbands by this migration. In addition to these there were 4,400 wives, or 8.9 per cent of the wives, whose husbands had either been killed, injured or taken away. Two-thirds of these were killed or taken away, 6.5 per cent. Or more poignantly, 3,250 children (5 per cent of all children) had their fathers killed, injured or taken away. These broken families could only to a small extent be due to families being divided within the city because only 3 per cent were so reported. The three factors combined of migration, persons killed or taken away, and divided families, broke 11.7 per cent of the families remaining in Nanking, or 5,500 families.

Within the city the refugee camps showed a very high figure for broken families, especially in the case of women with children, 13.2 per cent as compared with 6.6 per cent for all sections and with 3.4 per cent in the more normal times of 1932. Fourteen per cent of the families in the refugee camps were women, children and relatives (the latter usually dependent). Altogether, 27.2 per cent of the families in the refugee camps were women with children and in some cases with dependent relatives. In the camps 35 per cent of the families had a woman as head, while in the remainder of the population only 17 per cent of the families had a woman head.

A man or woman alone constituted the family in 14 per cent of the families living outside of the wall, as compared with general figure of 7.4 in 1932. In another 16.3 per cent of the families outside the wall, the family was a man with relatives.

For family composition analysis see Table 3.

2. DEATHS AND INJURIES DUE TO HOSTILITIES

NUMBER AND CAUSE

The figures here reported are for civilians, with the very slight possibility of the inclusion of a few scattered soldiers. The reports made in the Survey indicate that 3,250 were killed by military action under known circumstances. Of those killed 2,400 (74 per cent) were killed by soldiers' violence apart from military operations.[1] There is reason to expect under-reporting of deaths and violence at the hands of the Japanese soldiers, because of the fear of retaliation from the army of occupation. Indeed, under-reporting is clearly emphasized by the failure to record any violent deaths of young children, although not a few are known to have occurred.

Of the 3,100 receiving injuries under known circumstances, 3,050 (98 per cent) were definitely by soldiers' violence aside from warfare. There was a noticeable tendency to ignore injuries from which some sort of recovery had been made.[2]

89 per cent of the deaths and 90 per cent of the injuries by soldiers' violence occurred after December 13, when occupation of the city was entirely completed.

In addition to those reported killed and injured, 4,200 were taken away under military arrest. Persons seized for temporary carrying or other military labor were seldom so reported. Very few of those here mentioned were heard from in any way up to June. The fate of others gives reason to think that most of them were killed early in the period.[3]

The figures for persons taken away are undoubtedly incomplete. Indeed, upon the original survey schedules, they were written in under the heading "Circumstances," within the topic of deaths and injuries; and were not called for or expected in the planning of the Survey. Thus they have an unusual significance, and are more important than the simple figures indicate. Thus, those 4,200 must contribute an important addition to the number killed by soldiers.[1]

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[1] "Military operations" is here used for shells, bombs, or bullets fired in battle.

[2] Among the injuries reported to our Rehabilitation Commission by the 13,530 families applicants for relief, whom they investigated during March, was rape to the extent of 8 per cent of all females of 16-50 years. This figure is a serious under-statement, since most women who suffered such treatment would not volunteer the information, nor would their male relatives. While raping was such a common matter in December and January, people were much freer in admitting rape than under ordinary circumstances. But by March families were trying to hush up the fact that women in their families had been raped. The matter is mentioned here as illustrating the acute insecurity from which the social and economic life of the city has suffered.

[3] The seriousness of "taking away" is underlined by the fact that all so listed are males. Actually many women were taken for shorter or longer service as waitresses, for laundry work, and as prostitutes. But not one of them is listed.

Ignoring many minor cases, the casualties of military operations and the sum of those killed and injured by soldiers' violence, and of those taken away, represents 1 person in 23, or 1 in every 5 families.

The critical social and economic results of these killings are in part indicated by the following direct calculations from our listings. The number of women whose husbands were killed, injured, or taken away, was 4,400.[2] The number of children whose fathers were killed, injured, or taken away, was 3,250.

Of the 6,750 persons violently killed and injured, only 900 (or 13 per cent) came to grief through military operations.

The data on numbers of deaths and injuries are given in Table 4.

DISTRIBUTION BY SEX AND AGE

If we analyze by sex and age those who suffered violence or abduction, we find that the per cent of males in the killed and injured was for all ages 64, and reached for ages 30-44 the high percentage of 76. Able-bodied men were under suspicion of being ex-soldiers; many were killed for having callouses on their hands, supposed evidence of carrying rifles. Among the injured females, 65 per cent were between the ages of 15 and 29, although the terms and method of inquiry excluded rape *per se*.

A revealing picture of the tragedy is shown in the relatively large number of persons over 60 years old who were killed by soldiers: 28 per cent of all men so killed, and 39 per cent of the women. Elderly people were often the most reluctant to leave their homes in exposed areas, and they were considered in advance to be safe from wanton attack.

The men taken away were often accused, at least in form, of being ex-soldiers; or were used as carriers and laborers. Hence it is not surprising to find that 55 per cent of them were between the ages of 15 and 29 years; with another 36 per cent between 30 and 44 years.

The data on sex and age of deaths and injuries are given in Table 5.

3. EMPLOYMENT AND EARNINGS

FORMER CONDITION OF THE RESIDENTS SURVEYED

Among the represented population of 221,000, no less than 58,000 were formerly employed (53,000 men and 5,000 women), equalling 26 per cent of the total population, 33 per cent of persons 10 years and over, 38 per cent of persons 15 years and over. The women (9 per cent of the total formerly employed) were chiefly engaged in trade and general labor, secondarily in manufacturing and in domestic service.

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[1] A careful estimate from the burials in the city and in areas adjacent to the wall, indicates 12,000 civilians killed by violence. The tens of thousands of unarmed or disarmed soldiers are not considered in these lists. Among the 13,530 applicant families investigated during March by the Committee's Rehabilitation Commission, there were reported men taken away equivalent to almost 20 per cent of all males of 16-50 years of age. That would mean for the whole city population 10,860 men. There may well be an element of exaggeration in the statements of applicants for relief; but the majority of the difference between this figure and the 4,200 of the survey report is probably due to the inclusion of cases of detention or forced labor which the men are known to have survived.

[2] The 13,530 applicant families investigated by our Rehabilitation Commission during March, reported data which indicate that 14 per cent of all women over 16 were widows.

Of all formerly employed, 34 per cent (20,000) were previously in trade; 18 per cent (10,500) in manufacturing and mechanical industries; 12 per cent (6,500) in domestic and personal service; 10 per cent (5,500) in agriculture; 7 per cent (4,000) in general labor; 6 per cent (3,500) in transportation; 5 per cent (3,000) in "combined shops" (that is, shops which both make and sell articles, and which therefore cannot be assigned exclusively to manufacturing or to trade); 3 per cent each (2,000) to public service not elsewhere classified and to professional service; 2 per cent (1,000) to clerical occupations.

The average daily earnings of the persons employed were $1.01 for the total. For those in trade, the average reported was $1.20; in manufacturing and mechanical industries, $1.08; in domestic and personal service, $0.96; in agriculture, $0.73; in general labor, $0.34. The average family income was $1.23 per day.

The data on former employment are given in Table 6.

CURRENT EMPLOYMENT AND INCOME

Employment and earnings in March present a dismal picture by contrast with the report of former conditions for the same people. The total employed were 20,500, of whom 950 (less than 5 per cent) were women. The 20,500 constituted 9 per cent of the whole population, 12 per cent of those 10 years and over, 14 per cent of those 15 years and over.

Of the total employed, 67 per cent (13,500) were in trade,[1] 12 per cent (2,500) in agriculture; 5 per cent each (1,000) in manufacturing and mechanical industries, and in domestic and personal service; 4 per cent (1,000) in transportation; 3 per cent each (500) in combined shops and in general labor; less than 1 per cent each in public service not elsewhere classified and in professional service. The average earnings per person per day for the total were $0.32. Those engaged in trade reported $0.31; in agriculture, $0.20; in manufacturing and mechanical industries, $0.45; in transportation, $0.42; on combined shops, $0.22; in general labor, $0.25.

The rates of employment were lowest in the refugee camps and in the eastern sections of the city. They were highest among the gardeners, 17 per cent of all ages and 26 per cent of those 15 years and over. Traders were bunched in the Safety Zone, and in Cheng Hsi and Men Hsi, the first districts to open up noticeably; these three areas comprised roughly 40, 20, and 20 per cent of the relatively numerous traders. The Safety Zone still contained 33 per cent of all employed, with the other named areas 15 per cent each. The combined areas outside the wall had less than 5 per cent of all employed, and Cheng Tung less than 4.

The data on current employment are given in Table 7.

The number of families reporting no earnings was 37,050, or 78 per cent of all families in the city. The number of families reporting income insufficient to maintain life was 44,650, or 94 per cent of all families.[2] Our observation agrees with this picture. Life was continued by the use of buried hoards and other surviving accumulations; which were spread through kinship, friendship, and loans; and were supplemented by organized relief plus irregular releases from military storehouses, chiefly in the form of pay to a comparatively small number of laborers.

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[1] Largely the petty peddling of daily necessities and the roadside selling of the remaining personal possessions of self or others.

COMPARISON OF PAST AND PRESENT

March employment was 35 per cent of former employment among the resident population reporting; and earnings of those employed were 32 per cent of former earnings. These two factors give a gross income for all residents equal to 11 per cent of former income. This gloomy figure corresponds to the observation of those who knew the situation closely. Family earnings in March were on the average $0.14 per day, as compared with $1.23 in former times. Prices were low, but not low enough to help the situation greatly.

When we compare the groups of the employed, we find that those engaged in trade were two-thirds of the former number, but earnings were only 26 per cent of former earnings; those in agriculture, under one-half, with 27 per cent of former earnings; in domestic and personal service, under one-sixth, with 47 per cent of former income; in manufacturing and mechanical industries, under one-tenth, with 35 per cent of former income; in general labor, under one-eighth, but wages of those employed were 73 per cent of old wages. Public service employment practically disappeared, as did professional service; while clerical occupations literally were not found.

SOURCES OF FOOD

At any time the diet of the mass of the people in China is basically cereal. Under the economic conditions of March, that was true *a fortiori;* for the poorer people had practically nothing in the way of vegetables or oils, much less of meat or fruits. Aside from a handful of families that secured flour, all others were dependent upon rice, normally the major cereal of this region. Considering all sections of the city, 17 per cent of the people were getting their rice from food kitchens[1] (free, or at a nominal charge); 64 per cent from small private dealers; 14 per cent from the stores conducted by the Self-Government Committee; 5 per cent from "others," which usually obscured the real source by interposing a friend or a relative.

Outside the wall no people could get food from the kitchens, while at the other extreme were 82 per cent of the people in the refugee camps, plainly among the poorest in the city, on the average. In the Safety Zone Area, 17

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[1] 17 per cent of the population was nearly 38,000. This report on the use of the food kitchens checks very closely with the International Committee's records of feeding some 35,000 persons in late March, though minor corrections are to be made both ways because of other methods of food distribution and other organizations to be considered.

[2] The subsistence level was conservatively calculated at $0.26 per family per day. Gamble's *How Chinese Families Live in Peiping*, p. 326, shows 1.39 *shih tan* per month to be the family consumption of cereals from the median group down well toward the bottom of the families studied. Rice in late March sold for $10.63 per bag of 212.25 lb. From these data the figure of $0.26 per day is derived, ignoring fuel, shelter, clothing, or any food save the dominant cereal.

per cent were dependent on the kitchens, and in Cheng Hsi 12; both districts were adjacent to the kitchens that were in operation.

The data on sources of food occur in Table 8.

4. LOSSES OF FAMILIES REMAINING IN NANKING

MAIN ITEMS PER FAMILY AND IN TOTALS

The families remaining in Nanking during the war period were in general the poorer groups, though they included many small shop-owners and house-owners. A view of their losses shows most specifically the economic condition of resident Nanking people, though it is highly inadequate to indicate the total economic blow that the city suffered, quantitatively or qualitatively.

The average losses per family were $838, of which $271 was in buildings and $567 in movables, the latter divided almost equally between movables for economic uses (such as stock for sale, shop equipment, materials for manufacture, machinery and tools), and movables for domestic uses (such as clothing and bedding, household furniture and utensils, cash and jewelry, family food and supplies, and so forth).[1] Stocks for sale was a large item, $187 per family; shop equipment, $65. For these elements of the population, losses of machinery and materials for manufacture were relatively small. Clothing and bedding losses were heavy at $115, household furniture and utensils at $110. Food and supplies were listed at only $8, cash and jewelry at $10, indications both of moderate reporting and of the poverty of many of the families.

The total losses reported in the family investigation are big enough, though they touch only a relatively poor fraction of the city. Practically $40,000,000 was recorded chiefly in the following items; buildings, 13 millions; stock for sale, 9; shop equipment, 3; for clothing and bedding, 5 millions, as also for furniture and utensils.

When the total losses of families remaining in Nanking are analyzed by causes, they show that 2 per cent were due to military operations, 52 to fire, 33 to military looting and 9 to other robbery, with 4 per cent unknown. Fire inflicted almost all the building loss, but only 31 per cent of the loss in movables. Indeed, nearly half the movables lost were taken by soldiers, and a seventh by others. The military robbery comprised over $6,000,000 of movables for economic uses, and nearly $7,000,000 of movables for domestic uses, blows each in its own way disastrous to the daily life of the Nanking population.

The data for family losses by main items and cause are given in Table 9.

DISTRIBUTION BY SECTION AND BY CAUSE

If the total losses $40,000,000 of families resident in Nanking during March are assigned to the districts of the original addresses of those families (where most of the losses occurred), the results are as follows: Cheng Tung $12 millions, Men Tung 7, Cheng Hsi 6, Men Hsi and Cheng Pei Tung, each 5; others small. The total losses were divided between business and residence properties as $19 millions against $21 millions. In the more important districts, fire losses were proportionately heaviest in Men Tung, 66 per cent of all losses; in Cheng Tung, 62; and lightest in Cheng Hsi and Men Hsi, 34 and 38 per cent of all losses. The differences in causation of loss for business and for residential properties were not sharply marked. As might be expected, this population did not share largely in the big fire losses of the main commercial and industrial districts; thus their fire losses in business properties were 21 per cent of all their losses and in all properties; but were greater in residential properties, 30 per cent.

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[1] All money figures are in Chinese currency.

The data for family losses by section of city are given in Table 10.

5. TOTAL LOSSES OF BUILDINGS AND CONTENTS

Introduction by Count of Buildings

The total count of street-numbers is 39,200, of which 30,500 are inside the wall and 8,700 outside. The three crowded areas of Cheng Hsi, Men Hsi, and Men Tung had nearly 60 per cent of the buildings inside the wall (17,700); indeed, 45 per cent of the grand total.

Report of destruction or of damage to buildings was made only when the injury was sufficiently obvious from the street to call the attention of the investigator. In a number of specific examples we know of injury that was not recorded, but prefer to leave the figures as moderate as possible.

Of all buildings, 2 per cent were destroyed or damaged by military operations; 24 by fire; and additional 63 per cent by looting: a total of 89 per cent by all causes, leaving 11 per cent without obvious injury. It must be noted that most of the buildings burned within the city were thoroughly, even systematically stripped of their contents before the burning; and that practically without exception the fortunate 11 per cent were entered by soldiers who robbed to some degree, later followed by civilian thieves in unoccupied buildings.

Outside the wall, 62 per cent of the buildings were burned, even 78 per cent in the case of Tungchimen. Inside the wall, the percentage was 13, ranging from 29 in Men Tung down to 0.6 in the Safety Zone and 3.5 in the sparsely built Cheng Pei.

Military operations had noticeable effects only in the south and east parts of the city, and in Shuihsimen; though some cases must have been obscured in the areas severely burned.

Looting grossly affected 73 per cent of the buildings within the wall, but is reported for only 27 per cent outside the wall, where so much was burned, reaching 34 per cent in Hsiakwan. Inside areas ran as high as 96 per cent for Chen Pei and 85 for Cheng Pei Tung; the only one below 65 was the Safety Zone Area, in which the low report of 9 per cent appears for buildings showing damage by looting.

If we turn to consider the damage by all causes according to sections, we find that inside areas averaged 88 per cent of buildings affected, outside areas 90. Cheng Pei reported the dismal figure of 99.2 per cent; and indeed all the inside areas were above 90 save the Safety Zone with 10 and Men Hsi with 78. Outside areas touched 99.7 in the case of Tungchimen and 98 in that of Hsiakwan, while Shuihsimen was favored with only 70.

The data on count of buildings damaged or looted are given in Table 11.

Total Values Destroyed, By Items And Section Of City

The building investigation shows a grand total of losses of buildings and contents for all sections of $246,000,000, of which $143 millions were incurred outside the walls, and $103 millions inside. The grand total consisted first of 58 per cent movables ($143 millions), in which movables for economic uses were $114 millions, and movables for domestic uses were $29 million; and secondly of 42 per cent buildings, amounting to $103 millions.[1]

The loss in economic movables was especially heavy outside the walls, amounting to $82 millions there as against $32 millions inside while on the other hand, movables for domestic uses were $23 millions within the walls and only $7 millions outside. Buildings were a little heavier outside, $55 millions against $48 millions.

When we analyze specific items in percentages of the grand total, we find that stock for sale was 30 per cent ($74 millions); shop equipment 6 per cent ($16 millions), approximated by machinery and tools with $14 millions; materials for manufacturing were 4 per cent ($10 millions); ricshas were less than 0.1 per cent ($270 thousands). Clothing and bedding accounted for 5 per cent ($11 millions); household furniture and utensils for nearly 4 per cent ($9 millions); family food and supplies for 0.7 per cent ($2 millions); cash and jewelry for 0.3 per cent ($700 thousand); bicycles for a little less; "others" for nearly 3 per cent (over $6 millions). Almost all the machinery and tool losses occurred outside the wall, as also most of the material for manufacturing and two-thirds of the shop equipment and stock for sale.

In the classification of losses of buildings and contents according to sections of the city, there are a number of points of importance. By far the heaviest total was in Hsiakwan, the largely destroyed center of transportation, storage, and manufacturing: $117 millions. Cheng Tung, Men Tung, and Men Hsi ranged from $26 millions down to $20 millions; Tungchimen reported $16 millions and Cheng Pei Tung $14 millions. The smallest total losses were the Safety Zone with $4 millions and the notoriously poor area outside Shuihsimen.

Of the $117 millions lost in Hsiakwan, 69 was in economic movables, and 42 in buildings. No other area lost as much as $10 millions in economic movables, though several were above 6. After Hsiakwan, the next heaviest losers in buildings were Cheng Tung and Men Tung, with $13 and 12 millions respectively. The Safety Zone was lowest, with $551 thousands. As might be expected, there was no great concentration of losses in domestic movables, most of the areas ranged from $5 to 2 millions.

The data for total values destroyed by items and section of the city are given in Table 12.

Causes Of Loss: Totals And Main Items

Of the grand (or wretched) total of all losses, $246,000,000, one per cent ($3 millions) was due to military operations, which chiefly affected buildings. 67 per cent ($165 millions) was caused by fire, including 97 millions in buildings, 30 millions in stock for sale, 13 millions in machinery and tools, 10 millions in shop equipment. 31 per cent ($75 millions) of all losses were due to robbery, including 41 millions of stock for sale, 9 millions of clothing and bedding, 5 millions of shop equipment.

The data on causes of loss are given in Table 13.

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[1] The similarity of these two sets of figures is fortuitous but true.

Losses From Business Properties And Residence Properties Distinguished

The total losses of buildings and contents, $246,000,000, were reported as $210 millions from business properties and $36 millions from residence properties. Of the $210 millions of losses incurred by business properties, 131 millions were outside the wall, 110 of them in Hsiakwan and 15 near Tungchimen. Of the $79 millions in business losses inside the wall, 23 occurred in Cheng Tung, 16 each in Men Hsi and Men Tung; 10 in Cheng Pei Tung; the smallest losses of this type were in the Safety Zone Area, $2 millions.

The $36 millions lost in residence properties were divided into 24 millions inside and 12 millions outside the wall. Inside there were $6 millions in Men Tung, and 4 each in Men Hsi and Cheng Pei Tung; the other areas ran from 2 to 3. Of the $12 millions in residential losses outside the wall, 7 were in Hsiakwan and 3 in Chunghwamen.

If cause is considered, the heavy business losses are classified as follows: due to military operations, 1 per cent; to fire, 69 per cent; to looting, 29 per cent. The relatively lighter losses in residential properties were due to these factors: military operations, 4 per cent; fire, 59 per cent; looting, 37 per cent. The differences are explicable in part by the fact that many residences lay close to the gates seriously attacked in the southeast portion of the wall; and, for the more important cause of fire, to the deliberate burning of extensive commercial and industrial sections.

The data comparing losses from business and residence properties are given in Table 14.

Losses on Main Commercial Streets

In order to understand more clearly one aspect of the economic plight of the city not adequately reached by the family or general building investigations, the condition and losses on 8 of the main commercial streets were listed separately for examination (though of course they are included in all general totals, and do not constitute an additional loss). These 8 streets comprised over 2,800 numbers, an average of 350 per street. They lie mainly in the southeast quadrant of the walled city.

2.7 per cent of the buildings were damaged by military operations, 33 per cent by fire, 54 per cent by additional looting (most of the burned stores were casually looted by soldiers, then regularly stripped by the use of fleets of military trucks); making 89 per cent to suffer from all causes. Considering all causes, Pai Hsia, Chung Hwa, Chien Kang, and Tai Ping Roads were destroyed or damaged to the extent of 97 and 98 per cent of the buildings; the others, 70 to 80 per cent. From the positive side, 11 per cent escaped serious damage.

When we consider the individual streets according to the havoc wrought by different methods, we find that military operations were most obvious in Chung Cheng Road (6 per cent of buildings) and in Chung Shan Road (5 per cent), while in some they were insignificant or not reported at all. The percentage of injury by fire was greatest in Tai Ping Road with 68, followed by Chung Hwa and Chien Kang Road with 51 and 47 respectively. Looting in buildings not burned was naturally the converse of fire injury, since most of the preserved buildings have to be listed as looted. In Tai Ping Road only 27 per cent of the buildings are recorded as looted, as against 76 in Chung Cheng and Chu Chiao Road.

The losses of buildings and contents on the 8 main commercial streets within the city reached a figure just short of $50,000,000, of which $47,000,000 was in commercial buildings and their contents. In the report just following, it should be remembered that percentages and differences among the streets are listed in terms of dollars' worth of property lost, not in numbers of buildings as in the items of preceding paragraphs. Chung Hwa Road lost most heavily, with $12,500,000, a fourth of the total for the 8 streets; Chung Cheng Road, $11,000,000; Tai Ping Road, $9,000,000; Chung Shan Road, $6,000,000; Chien Kang and Pai Hsia Roads, $4,000,000 each; Sheng Chow Road, $2,000,000; Chu Chiao Road (the southern extension of Tai Ping Road), $1,000,000.

If the money losses on the 8 streets are divided by causes, we find 0.7 per cent by military operations, 65 per cent by fire, 28 by additional looting, 6 reported as unknown. When individual streets are considered, Chien Kang Road reported 98 per cent of losses due to fire, Chung Cheng Road 87, Chung Hwa 77, Pai Hsia 69. For additional looting, the streets appear in the converse order, since unburned property is now the subject: Chu Chiao Road 72 per cent of losses due to looting, Chung Shan Road 61, Sheng Chow 47, Tai Ping 29. For Tai Ping, Sheng Chow, and Chu Chiao Roads in particular, sizable percentages are recorded as unknown, doubtless a combination of fire and looting, which must be to some extent interfused in all reports under these two headings.

The data on losses on main commercial streets are shown in Tables 15 and 16.

Losses of Buildings and Contents per Family of Original Residents

The weight of total losses may be in part appreciated by an estimate of their extent per family of the original population, which can be calculated with fair approximation.[1] In a sense these figures are academic, since they include the few public buildings destroyed and some important institutional properties, while excluding personal, public, and institutional property removed before the taking of the city. Yet they serve both to bring down figures of hundreds of millions to thinkable concreteness, and to correct the misleading impression given by the low reports from the relatively poor families remaining in Nanking.

The total loss reports show an average per family of $1,262, of which $527 was in buildings, $582 in economic movables, $152 in domestic movables. The economic movables comprised $377 worth of stock for sale, $80 of shop equipment, $73 of machinery and tools, $51 of materials for manufacture, $1 in ricshas. The domestic movables comprised $58 worth of clothing and bedding, $44 of household furniture and utensils, $9 of family food and supplies, $4 of cash and jewelry, $3 of bicycles.

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[1] We find a close check between direct use of the factors of total loss, population considered, and number of persons per family; and on the other hand loss per house-number divided by our figures of 4.9 families per house-number in the original population considered.

The data on losses per family of original residents are shown in the right hand column of Table 13.

COMPARISON OF LOSSES AS REPORTED FROM THE FAMILY INVESTIGATION AND THE BUILDING INVESTIGATION

When the losses per family of the original population are compared with the losses of the families remaining in Nanking, it is seen that the buildings are nearly doubled ($527 to $271), and movables for economic uses are actually doubled ($582 to $291), while domestic movables are almost halved ($152 to $276). These reports fairly represent the two situations: the total losses for the entire city were a half greater per family of its population than were the loss for the families remaining in Nanking ($1,262 to $838). The city-wide losses included the larger properties of all types: commercial, industrial, institutional. On the other hand, many domestic goods were removed by those who migrated; and losses of the domestic goods which they left in Nanking could not be adequately reported.

The data for comparison of losses for families remaining in Nanking and for all families in the original population may be found in Tables 9 and 13.

II. AGRICULTURAL SURVEY

The Agricultural Survey attempted to cover the Ningshu Area, a natural and historical unit of six hsien grouped around Nanking. Two of the hsien, Kiangpu and Luho, lie north of the Yangtze River; while to the south are Kiangning (in which Nanking is located), Kuyung, Lishui, and Kaoshun. Owing to conditions explained in Appendix A on Organization and Method, Kaoshun and half of Luho could not be investigated in March. The 4.5 hsien included in the survey had at that time a maximum of 1,080,000 farm population, probably 1,200,000 to 1,350,000 before the war. They also included market towns which originally had some 275,000 inhabitants;[1] and the city of Nanking, formerly with a million, shrunken to approximately 250,000 in March. Thus the whole population of the 4.5 hsien was roughly a million and a half in March (the people of the market towns, however, do not enter the scope of the Surveys). The land area of the 4.5 hsien is 2,438 sq. m.,[2] about that of the State of Delaware or of two fair-sized English counties. Of this area, almost exactly one-third is cultivated, 819 sq. m.[2] It is important to note the bulk of Kiangning Hsien in the Agricultural Survey. It comprises 41 per cent of the cultivated area in the 4.5 hsien, and almost the same percentage of the total farm population.

1. FARM LOSSES

EXTENT AND SIGNIFICANCE

The five types of farm losses reported (buildings, labor animals, major farm implements, stored grain, crops destroyed) totalled nearly $41,000,000 in the four and one-half hsien, or $220 per family. It is important to note that the approximate annual income of a farm family in East Central China, as indicated by Buck's figure for the value of all goods consumed per year by an average family, is $289.[3] The margin of savings and possible rate of accumulating farm capital are so small that the loss of three-fourths of a year's income is a fearful blow to farm families, both in productive power and in standard of life.[4] Losses of $220 per family in the present calamity may be compared with the 1931 flood losses of $457,[5] and the 1932 war losses of $147.[6] (Both the surveys of 1931 and of 1932 included many smaller items not reported this year; and the unit prices used in 1931 are much above the low ones now employed). Lishui Hsien suffered the heaviest losses per family, $302; the large and populous Kiangning, $251; Luho only $111; Kuyung rising to $147; and Kiangpu to $239, nearest to the general average of $220.

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[1] Estimated from Buck's figures in *Land Utilization in China, Statistics,* P. 417.

[2] Buck, *Statistics,* p. 24, shows the correct government figures to be 6315 sq. km. and 2122 sq. km., respectively, from which the sq. m. are now calculated.

[3] Buck, *Chinese Farm Economy,* p. 387. All money figures are in Chinese currency.

[4] On data of fifteen years ago (from only three localities, and at lower valuations and prices than he has recently given) Buck reports a farm capital for Kiangsu averaging $478. This figure includes buildings, livestock, supplies, farm equipment, not land and trees. Total capital with land he gives as $1,775, subject of course to problems of tenancy and mortgage. *Chinese Farm Economy,* p. 57.

For Kiangning Hsien, so large an element in the Ningshu area, a current estimate of $743 is given for the average farmer's buildings, implements, livestock, and furniture. R. T. Ts'ui, *Land Classification of Kiangning Hsien,* soon to be published in "Economic Facts."

[5] *The 1931 Flood in China,* p. 13.

[6] By another calculation, $135 per family.

Buildings

Buildings alone comprised 59 per cent of the total reported losses, $129 per family. This means that 1.7 *chien*[1] of buildings per family, or two-fifths of all farm buildings in the area, were destroyed—most of them by burning. Building losses were particularly heavy in Lishui, 2.8 *chien* per family; in Kiangpu, 2; and in Kangning, 1.9. The total number of *chien* destroyed was 308,000 valued at $24,000,000.

Labour Animals

Labor animals were second in importance among the types of losses, accounting for 16 per cent of the total, and 0.66 of an animal per family. The latter figure seems high, particularly the portion of it relating to water-buffaloes. In the 1931 flood, the general average for labor animals lost was 0.44 per family, counting the three kinds of animals listed in this survey.[2] Buck reports a normal figure for the Yangtze rice-wheat area of only 0.71, but 1.20 for the important Kiangning hsien,[3] the only one of our hsien there recorded. War losses of animals were proportionately higher in Kiangning (0.84), and in Kiangpu and Luho. For the whole area, the loss was 123,000 head (buffaloes, oxen, donkeys), valued at $6,700,000 or $36 per family.[4]

Farm Implements

Farm implements represented 13 per cent of all reported losses, and amounted to 3.55 items per family. It appears that most of these losses were of the wooden portions of the implements, burned with the buildings or taken for fuel; the wooden element is largest in the indispensable and costly many-bladed pumps for the irrigation of rice-fields. (0.6 per family). Present losses of the principal tools appear to be a half greater than in the flood of 1931.[5] Buck gives 6.5 items for the normal average (Yangtze Rice-wheat Area, medium-size farms) of the types of implements listed in this survey.[6] Implement losses were heaviest in Kiangning and Lishui, medium in Kiangpu. For the whole area, the loss was 661,000 implements, valued at $5,240,000 or $28 per family.[7]

Stored Grain

Stored grain counted 10 per cent of all losses, and in quantity amounted to 1,100,000 *shih tan*, or 6.1 *shih tan* per family; of which half was rice, a sixth wheat, and a sixth soybeans. Kuyung, at 7.5 *shih tan* per family, Lishui at 7.2, and Kiangning at 6.1, suffered most severely; Luho very lightly at 2.7. The average family in the war areas of 1932 lost just over 2 *shih tan*. The average loss in the flood of 1931 was 4.2 piculs (5.1 *shih tan*).[1] The recent grain losses reached a value of $4,200,000, or $22 per family.[2]

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[1] A *chien* is the space between main rafters, averaging about 11′ x 16′. Farm residences often contain 4 *chien*, other farm buildings 2 *chien*. See Table 17 Note 1.

[2] *The 1931 Flood in China*, p. 17.

[3] Buck, *Statistics*, p. 122-123.

[4] Buck many years ago indicated for Kiangsu Province a normal inventory amounting to $53. *Chinese Farm Economy*, p. 57.

[5] *The 1931 Flood in China*, p. 18.

[6] *Statistics*, p. 396.

[7] Buck earlier reported for Kiangsu Province a normal equipment value of $64. *Chinese Farm Economy*, p. 57.

Destroyed Crops

Crops destroyed were fortunately a small loss, only 2 per cent of the total. For the winter wheat, like some of the younger women, was partly hidden in the ground during the worst period. Yet this item, relatively small though it was, indicates a real burden upon farm families. More than 8 per cent of the area planted to wheat was destroyed, chiefly by the soldiers' feeding of animals. In Kiangning and Kuyung the crop from 40 to 50 per cent of the intensively cultivated vegetable plots was lost to the farmer. The area of all winter crops destroyed was proportionately highest in Kuyung, 1.4 mow per family; and lowest in Kiangning, 0.62. The total area destroyed was 137,200 mow, or 0.85 per family; the total value $785,000 or $4 per family.

The types of recent war losses differ from those of the 1931 flood as fire from water. Counting in values, buildings destroyed in the present calamity are 31 times the crops ($129 per family, as against $4). In 1931, crops were twice the buildings ($215 per family, as against $108).[3] The 1932 war areas (rural) near Shanghai resembled Ningshu of the past few months, showing building losses as 28 times crops ($97 as against $3.50).

The data regarding farm losses are reported in Tables 18, 19, 20, 26, 27, 28, 29, 31, of which the first three are general.

2. WINTER CROPS AND SPRING SEED

Importance of Food Production in This Area

The importance of food production in this area, and its bearing upon relief needs, is emphasized by two facts. First, the 4.5 hsien here studied have an abnormally large city and town population. Even in the depleted condition of Nanking, it had at least 67,000 families, about one-fourth the number of a year ago; the market towns normally have 53,400 families, from which an unknown number should be subtracted for war migrants; the farm families originally numbered 186,000, from which a possible 30 per cent were absent in March as families, and an additional 11 per cent as individuals.[4] If we add these three figures, without making allowances, to form a total for the area, it exaggerates the importance of the farm families; yet even on this basis, they number only 61 per cent of the total, as against 22 for Nanking and 17 for the market towns. Compare the percentages for the Yangtze Rice-wheat Area as a whole: farms 83; cities 5; market towns, 12[5]. Secondly, transport of food from a distance has been practically impossible under war conditions, and there is scant improvement in sight. Most of the rice brought into Nanking this spring has come from Lishui and Kaoshun.

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[1] *The 1931 Flood in China*, p. 12.

[2] In the prices of fifteen years ago, Buck valued the normal inventory of grain in Kiangsu province as $29. *Chinese Farm Economy*, p. 57.

[3] *The 1931 Flood in China*, p. 13.

[4] Cf. Table 21, Note (****) and reference. Also Appendix B.

[5] Buck, *Land Utilization in China*, p. 365.

Winter Crops: Their Significance

A large part of the cultivated land in this area is normally put into winter crops.[3] For Ningshu, Lin says 70 to 80 per cent;[4] for the Yangtze Rice-wheat Area, Buck reports 62 per cent, and for Kiangning Hsien,[5] 92; for Kiangning, Ts'ui in his recent and close study, says 65 per cent.[6] In general, the winter crop is followed by a summer crop on the same land; while the remainer of cultivated land grows a spring crop. Thus, in use of land, the winter crops represent 40 or more per cent of all crops, and are a large factor in the farm economy as well as in food production for the whole community.

Extent Of Last Fall's Planting ...

Last autumn's planting of winter crops was 1,629,000 mow (8.75 per family), or 47 per cent of the cultivated land. If we follow Ts'ui, whose figure seems the best-founded in itself and is supported by the best of Buck's figures (the regional one), this would mean that 47/65, or 72 per cent of normal planting, was carried out. War conditions of active preparations and of bombing, prevailed through portions of this region all through the autumn, and became acute at some points before the normal planting time. Moreover, the weather was unusually dry, another cause of delay which pushed some farmers along till early December, when the full calamity came and field work was impossible. Of the planting, 64 per cent was in wheat, 20 per cent in barley.

Destruction of Crops; Other Shortage

Of the winter crops planted, 9 per cent are reported as destroyed. The estimated losses were 172,000 *shih tan*, or in money $765,000. Kuyung Hsien lost most heavily, 18 per cent; Kiangpu only 4; the remainder not far from the average. The different crops suffered at about the same level, save 33 per cent for the intensively cultivated and not inconsiderable plots of vegetables, which were persistently attractive to soldiers, as were the other crops to military horses.

On the area planted but not destroyed (72 per cent of normal, discounted 9 per cent, leaving 65 per cent of normal) farmers expected 63 per cent of normal crops, fairly uniform according to grains. Remarkably dry weather prevailed until March; and there was also minor injury not to be classed as destruction, along with excess of weeds. Nevertheless, the expectation seems low, and this percentage may be colored by the farmers' thoughts of their total yield in ordinary times. To that extent, this figure represents a comprehensive estimate of expectations and shortage. However, the questions were sharply stated, and the investigators and farmers tried to provide the proper answers. If we take 63 per cent of the remaining 65 per cent of normal planting, the result would be an expectation of 41 per cent of the ordinary crop. Perhaps the truth lies between the percentages of 41 and 63. Two later factors must be mentioned. Beginning in March, there was better rainfall, with marked improvement of the prospects. But in June the rainfall has been excessive at the time of wheat harvest in some localities, with great spoilage before threshing.

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1. In the following paragraphs, unless otherwise specified, wheat, barley, rapeseed, broadbeans, and field peas are considered; in certain of the tables, vegetables are also recorded.
2. D. Y. Lin, letter March 2, 1938.
3. *Statistics*, p. 207.
4. *Land Classification of Kiangning Hsien.*

Expected Crop in Terms of Consumption

What does the harvest of wheat and barley mean in provision of food for the population of the hsien studied and the city population linked with them? It is expected to provide 3.40 *shih tan* of grain per family, which would feed them for less than seven weeks, according to grain consumption reports by Buck and by Gamble for farm and city populations, respectively.[1]

The data regarding winter crops are found in Tables 21, 30, 31, 32, of which 21 is general.

Shortage of Seed

Data on this subject are perhaps the least satisfactory in the survey, and they are not counted in the list of losses (where they are of course involved in the losses of stored grain). Answers to inquiries, even assuming that questions were skilfully pressed, concerned estimates and wants rather than plain statements of fact; and in several items seed was also food, in a time of scarcity and uncertainty. Nevertheless the results of the survey were very moderate, and on the whole gave confidence in the essential integrity of farmers and investigators. The requirements reported total $2.87 per family, under 0.9 *shih tan*. Compare the 1931 flood data, which show a total want of winter and spring seeds in terms of 2.7 piculs (3.3 *shih tan*), of which spring seeds were 1.67 piculs (2.1 *shih tan*), the latter alone more than double the reports of the present inquiry.[2]

Evaluation of Seed Requirements

Farmers reported that they intended to plant, on the average, nearly 15 mow per family of the 18.5 mow which they ordinarily would put into rice; and that they needed seed to the extent of almost 5 *shih chin* per mow of the intended planting. Was such an estimate unreasonable? Buck gives seed use as 5 per cent of total rice production in the Yangtze Rice-wheat Area, which on the base of most frequent yield works out at 19.3 *shih chin* per Kiangning mow.[3] Ts'ui's recent data for Kiangning would give 26.6 *shih chin*.[4] Traditional allowances are lower. In any case, the farmers' figures do not seem excessive.

Among the types of seed required, rice represented 66 per cent by value, and soybeans 20. Total value was $570,000, of which $376,000 was rice. It is inferred that there were serious individual and local difficulties, but that by one means or another most of the families affected could find some way of secur-

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1. *Statistics*, p. 417, shows 239,450 families in the 4.5 hsien, including town families. We count 67,000 families in Nanking, making a total of 306,450 families. The average consumption of grain per farm family of 5.79 individuals, is 2.3 *shih tan* per month, based on the averages of three localities in South Kiangsu (Wutsin 1, Wutsin 2, and Changshu) as given in *Statistics* pp. 105,107. For the city families, Gamble's figures for a median income group (which extends with slight change down even to $10 per month) are employed, working out at 1.39 *shih tan*. The weighted average of these two types of consumption is 2.1 *shih tan* monthly for all families in the area considered. *How Chinese Families Live in Peiping*, p. 326.
2. *The 1931 Flood in China*, p. 30.
3. *Statistics*, pp. 238, 210.
4. *Land Classification of Kiangning Hsien*, soon to appear in "Economic Facts."

ing seed for the fields they would be able to prepare for cultivation under the conditions of this spring.

The data regarding seed requirements are reported in Table 22.

3. THE WAR AND PERSONS

Migration from the Farms

Investigators' reports show that 133,000 members of farm families resident in March (11 per cent of the estimated original members of those families) had left and had not returned. It must be remembered that possibly three times as many persons in entire families were still away; but we cannot accurately consider them because of inadequate information. (See Appendix B.). Of the 133,000 migrants, 111,000 were from Kiangning, 11,000 from Lishui, and 8,000 from Luho. The absent members from Kiangning were 20 per cent of the estimated total original population; perhaps this hsien was especially high because of its proximity to Nanking, the abundance of communications, and the association of individuals directly or indirectly with the government and private enterprises so largely removed before December 1937.[1]

Labor Shortage

Separate inquiries were made as to the original number of laborers in the family, the actual number of laborers, and the number expected back soon. The results show the actual shortage of laborers to be serious in Kiangning, 19 per cent; but the majority of absentee laborers were expected to return soon, leaving a predicted shortage of 18,000 or 7 per cent of the original number of laborers. For the 4.5 hsien, the actual shortage was 15 per cent; the expected shortage, 8 per cent or 42,800. The expected shortage was highest in Lishui, 12 per cent; and in Luho, 11. (Again see Appendix B for the possible shortage through the absence of whole families).[2]

Data on migration and labor supply are recorded in Table 23.

Deaths by Violence

The total deaths reported were 31,000 or 29 per 1,000 residents for the 100 days covered, at the rate of 106 per annum. Compare the normal death rate for China of 27 per annum.[3] 87 per cent of the deaths were caused by violence, most of them the intentional acts of soldiers. One was killed in every seven families, equivalent to a total of some 1,700,000 killings if the same rate were applied to the rural families of the United States; over 8,000,000 among the farm families of all China; perhaps 800,000 among the strictly defined farm families of Japan proper. The conditions of this region and the methods of the survey were such as practically to exclude soldiers of any sort, though it is possible that a few local men acting as police or guards were included. The rate of killing was highest in Kiangpu, 45 per 1,000 in the 100 days; Kuyung 37, Kiangning 21, the others 15 and 12; for the 4.5 hsien, 25.

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[1] Migration within the hsien, or within this group of hsien, would leave the family within the net of this survey insofar as the sampling is satisfactory; though some escape in the hills is probable. In the 1931 flood, the total migration of families and of individuals showed more than 70 per cent of migrants remaining within the same hsien; and, apparently, a little more than 20 per cent migrating to other hsien, whether or not adjoining ones. *The 1931 Flood in China*, pp. 27, 33.

[2] It is interesting to note the report of 2.8 laborers in an average family originally numbering 6.5. This suggests that according to the farmers' own interpretation of the term "laborer," there are some 43 per cent of the family to be so considered.

[3] *Land Utilization in China*, p. 338.

The per cent of males among the killed was terrific, especially up to 45 years, and amounted to 84 per cent of the killed for all ages. Among the 22,490 males killed, those falling between 15 and 60 years were 80 per cent, a real drain upon economic strength. Among the 4,380 females killed, 83 per cent were above 45 years. More of the younger women migrated in search of safety, or were kept out of harm's way in times of obvious danger; while old women did more than their share of guard duty, as supposably less liable to attack than young women or able-bodied men.

Deaths by Sickness

Deaths from sickness were reported as very low, totalling 4,080 or 3.8 per thousand residents in the 100 days. This is apparently a serious under-reporting; none at all was recorded under the age of 5 years, for example. A similar tendency is noticeable in normal times, and in the past winter attention was inevitably centered upon the great number of abnormal deaths. It is also possible that some deaths by sickness were confused with the killed, though the original questions presented the two as alternatives; and the margin of this confusion, as tested by comparison with the normal death rate, could not have been large enough to affect in noticeable degree the number reported as killed. The 100 days occurred in a healthy season with unusually mild and fair weather, after two successive years of big harvests. It is plain that there was no epidemic or extraordinary disease.

In the great flood of 1931, deaths were reported at the rate of 22 per 1,000 during an almost identical period of time; of the deaths, 70 per cent were definitely attributed to disease, and 24 per cent to drowning.[1] The present survey indicates only 12 per cent from sickness, which could at most be doubled by complete reporting. This only serves to emphasize the extent of the killings.

Data on deaths are reported in Tables 24 and 25.

4. EFFECTS OF WAR: FARMS AND CITY COMPARED

Although before the war the rural population of the 4.5 hsien studied was not much greater than that of Nanking, at the period of the survey in March it was more than four times as great. While the remaining farm families lost only some 11 per cent of their members by migration, and possibly as many as 30 per cent went away and stayed away as entire families; the city lost by migration 14 per cent of the members of remaining families, and some 75 per cent of the original families entire. The surveyed population in Nanking was 221,000, as against 1,078,000 in the farm villages.

On the farms, one resident in every 7 families was killed. In the city, one resident in every 5 families was killed, injured, or taken away; which works out to about an equal degree of social evil and distress.

The total farm losses were $41,000,000, with no domestic property reported. The total losses for families remaining in Nanking were $40,000,000; while those of buildings and contents for the entire city were $246,000,000.

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[1] *The 1931 Flood in China*, p. 37.

The farm losses per family (domestic property not considered) were $220, of which buildings were $129. Among the city population remaining, all losses per family were $838, of which buildings accounted for $271, stock for sale $187, and domestic movables $276. Total city losses divided among original families would run to $1,262, of which buildings counted for $527, stock for $377, and domestic movables $152.

It is not possible to compute the losses of farm and city in ratio to their respective total property values. It seems, however, that the farmer's losses do not weigh so heavily against his major property, land; as do the city people's losses against their total property. In any case, the farmer's basic capital for production has not been destroyed; while many city people have lost all important material means of production. These comments are not intended to lessen appreciation for the suffering and hardships of the large farm population; but merely to suggest that the average farmer has left to him more to struggle with and more to struggle for, than the average denizen of Nanking in this year of distress.

III. RESULTS OF THE SURVEY IN THEIR BEARING UPON RELIEF NEEDS AND RELIEF PROGRAM

The loss of 40 per cent of all farm buildings is a critical blow at the farmer's capital, his standard of living, and his productive power. Some families or parts of families have been delayed in their return to the land because of lack of housing; that means shortage of labor, lessened production, even further worsening through neglect or robbery in the farmer's absence. Moreover, the preservation and care of animals, implements, and stored crops is affected by deficiency of buildings. In recent heavy rains, some farmers were unable to prevent their cut wheat from spoiling before threshing, and did not even have a place for improvised indoor threshing.

Working power is affected by shortage of laborers, of animals, and of implements. Deficiency of laborers is due (1) to irremediable deaths and injuries and to such war migration as will not be reversed in a few months; (2) more largely, to personal insecurity, especially for women. Improvement in such matters depends upon the purpose and the quality of government, a field which relief workers do not enter. Both animals and implements are insufficient, though farmers have done well in exchange and borrowing and cooperation, to make the most of what they have. Direct aid for the bringing in of animals, tools, and wood needed for handles and blades for implements, is desirable. Credits to assist in purchases, and in maintenance of breeding stock and young animals, are widely needed. In principle, and usually in practice, credit can be most usefully and most safely extended through cooperative societies.

Seed does not appear to be a separate problem henceforward. However, grain is the staple food; and serious shortage of food would press some farmers hard for seed.

The current wheat crop is seriously below normal, hurting farm incomes, and constituting a factor in the total food problem. Nevertheless, old supplies of various grains seem adequate to carry, till the autumn rice-harvest, all who have a little purchasing power or credit. More significant is the question of the coming rice crop, which cannot be accurately answered without further inquiry in July after the completion of transplanting. Interrogation of farmers and travelers from different localities brings a picture of wide variation: at many points a practically normal planting; at others a distressing deficiency.

Farmers are scarcely able to restore their injured capital and productive power, while short in those same necessities, and while working under conditions which in part are still those of war and military occupation. For example, as soon as spring crops were in around Nanking many farmers sold their buffalo for slaughter rather than take the risk of keeping the animal. Much less is there any margin against flood or drouth. After two years of excellent harvests, chanceful nature does not guarantee the next two. Indeed, there is already great concern over the probability of flood in this Ningshu area sprawled across and along the Great River, excessively drenched in June rains and threatened by the extraordinary levels of the Middle and Upper Yangtze, plus the complication of the Yellow and Hwai waters through the Grand Canal (which overload the out-flow from the Lower Yangtze.)

In thinking of this year's relief problem by comparison with that of the flood in 1931, there is the apparent difference that then there was one government concerned with the problem as a whole, and putting large resources into relief. Under existing conditions there are various authorities (in some sections none), the more important of which are so intensely concerned with military and political operations, and are receiving so little of regular revenue from the localities considered, that relatively small efforts at relief have been made thus far. Surely the facts themselves appeal to all present authorities, however constituted, to do their utmost in constructive aid to farmers. Such aid is not only a humanitarian necessity but will strengthen the economic basis of the community and of the government itself, and will be worth infinitely more than propaganda in securing the good will and cooperation of the people. Furthermore, the needs are so great that the total of all potential aid, public and private, would still be inadequate. The experience and resources of the China International Famine Relief Committee, or of any other private, non-political organization concerned with relief, should be welcome as useful supplements to the large-scale relief that governmental authorities ought to be undertaking.

Freedom of transport by water, rail, and highway, is essential to any considerable recovery. In practice such freedom is dependent upon actual security as well as upon policy. Improvement of transport is acutely necessary both for producers and for consumers of food and of household requirements of all sorts. Fuel and raw materials are largely unprocurable in the places where they are most needed.

In normal times needs for credit were great, and interest rates high. Now normal supplies of credit are generally missing, and the necessities for credit are multiplied. Both farms and city need all types of banking and means for transfer of money and credit.

The need for security cannot be over emphasized. In many places, over a period of months, normal labor and normal family life have been continually disturbed by violence; while transport and credit and the incentive for productive effort, alike on the farm and in the shop, have been hamstrung by insecurity. The farmers and the city workers have done splendidly in helping themselves under adverse conditions, but further progress is dependent upon adequate safety for communications; protection of persons and private property against soldiers, bandits, and robbers of all types; and in particular, safe facilities for banks and for stocks of commodities. If political and military conditions do not provide better security, misery will continue and may increase. Insecurity and misery have bred a large part of the present insecurity; and the vicious circle will not easily be broken without unified, vigorous, and enlightened government.

The comparison of the effects of the war upon the farms and upon the city suggests that in the Nanking region more of the cultivators will pull through without planned aid, than will artisans and shopkeepers and peddlers. Even in the city, however, tribute must be paid to a population that could endure the experiences of December to March as the climax of a war period, and still have only 35 per cent securing food in part by relief whether through kitchens or through cash. There has been an upturn since March, but reserves are now lower. Furthermore, material resources, excepting for agricultural products, are continually being consumed without chance of replacement. Deterioration is also taking its toll daily. Further economic trouble would bring a sharp worsening. But administrators of public welfare in the United States or in some other countries may well marvel at the endurance and self-reliance of the plain Chinese people. The price, however, in health and in all opportunities of life has been heavy, and ought not to be further exacted.

It has been demonstrated that refugee camps are no longer needed as a major method of relief in Nanking. There are sufficient looted and damaged houses to shelter the present reduced population. Relief can best proceed through homes and personal services, supplying food, medical care, employment, credit, aid in reuniting separated families, to such degrees as ability, intent, and resources permit. Communal cooking may, however, become necessary if fuel stocks are not made available to the public. Every possible encouragement should be given to the restoration and development of municipal services: police, sanitation, light, water, public works. If only some system of garbage disposal could be instituted, health conditions would improve. A police force with some authority could rapidly check the nightly depredations on property and persons.

Finally, reports of losses and of needs are necessarily in terms of totals and averages. It must never be forgotten that many persons, families, villages or city streets, have suffered far more grievously than statistics or generalizations show. The reckoning for the whole community will gain from the corresponding items on the better side of the average; but that by no means brings an automatic compensation to those in the worse position. Relief efforts must look to the actual persons in greatest need, not merely to mathematical reports.

IV. APPENDICES

APPENDIX A

FURTHER NOTES ON ORGANIZATION AND METHOD

1. Field Procedure.

The technique of random sampling was followed instead of trying to locate "average villages" as done by Professor J. L. Buck in his surveys, because the difficulties existing in the situation made it improbable that investigators could go over the ground twice. Furthermore, it was not possible to put into the field a large group of trained observers such as worked in the war survey of rural areas around Shanghai in 1932. Lacking these opportunities and realizing how patchy war damage was in 1932, it was thought that a random sample selected at regular intervals would be less likely to misrepresent than would a hasty selection of "average villages." Furthermore, there is something to be said in principle for such random sampling by regular intervals as usually less subjective than the attempt to select "representative cases." The one instance in which this method seems to have failed is the average size of farm in Kiangpu Hsien and the resulting excess of total cultivated area. (See Table 17).

The procedure was more successful than at first expected. However, the investigators in Luho Hsien were stopped by the Chinese authorities in control of the northern part of the hsien, and were held as spies until a letter from the Committee was sent to them. The same difficulty occurred in Kaoshun Hsien so early in the field work that that hsien had to be dropped from the results. Only the southern half of Luho is included in the reports. In Lishui Hsien the Chinese authorities in control sent a guard with the investigators; and the guard compelled the investigators to go to villages which they selected and to families in the villages selected by the village head. Consequently, their sample tended to come from the worse areas. In the western part of Kiangning Hsien the investigators let local expediency interfere with selecting every tenth family. A careful check on sampling village by village revealed errors both ways or so haphazard that any attempt at correcting for them by weighting would be just as likely to increase the error as to reduce it. So no correction was attempted. The men in Kuyung, Kiangpu, and Luho followed their sampling instructions very systematically.

At the start of the building investigation in the City Survey, it was only intended to cover the main streets. But it was found difficult to fit together the family and building investigations, because the families remaining in the city were only one-fourth and the poorer part of the original population. Consequently, in order to get an estimate of total damage, the building survey was extended to every building in the city. If this had been expected at the beginning a smaller sample than one in ten would have been taken for estimating value of loss, with consequent greater speed in securing results, but possible sacrifice of accuracy.

2. Statistical Procedure.

The adequacy of the sample in the Agricultural Survey with 1 family in 206, is midway between the 1 to 359 families in the 1931 flood survey and the 1 to 79 in the survey of the rural areas affected by the Shanghai hostilities (1932). However, the ratio was much lower in Kiangning Hsien (1: 398) and relatively high in Lishui Hsien (1: 140). (See Table 17).

3. Checks on Accuracy.

(1) *Previous surveys* were available in the form of *The 1931 Flood in China*, and the "Survey of the Rural Areas affected by the Shanghai Hostilities (1932)" as well as Buck's *Land Utilization in China.* For instance if the hsien average for rice seed needed as reported in the 1931 flood survey (Table 17) were applied to the 4.5 hsien in the present study, it would yield a figure of 211,000 *shih tan* needed. The result herein (Table 22) is only 125,200 *shih tan.* The average loss per family, $220, is not too much greater than the loss of $147 per family in the Shanghai hostilities in 1932 when the more prolonged destruction in this area is taken into consideration. The comparisons are made under each item of loss of damage. The *Land Utilization in China* was useful in comparing reported losses with actual farm inventory in normal times.

(2) *Independent figures* have been secured wherever possible. Independent estimates of the total cultivated area involved were used to check farming area covered. (See Table 17). For the current Nanking city population there are the number of persons registered by the Japanese in December and January, and the registration totals given by the new City Government for May 31st, 1938. No independent count or valuation of buildings in Nanking has been obtainable. Comparison of family losses in the city with losses reported to relief investigators was not possible on all items because their information was much more sketchy and for buildings they failed to secure values of losses in the majority of cases. But on the items of bedding, clothing and money, they reported an average loss of $162.83 per family helped in March (9,256 families). Our figure of $124.96 for family loss of the same items is conservative, even allowing for the fact that the above were "relief families"—though 20 per cent of all families in the city!

For comparison with normal conditions of the Nanking population representing the areas and classes that remained, the study of 2,027 families by Smythe in 1932 was the only work available. It made possible, however, some estimate of deviation from "normal."

A further independent check in the city survey was that the group doing the study had lived through the situation and at every point could critically examine every survey result to see whether it agreed with known circumstances. (But in *no* case were survey results altered). The most striking agreement was the low percentage of damage caused by military operations which fact was readily observed by many on December 14th. Conversely, the extent and method of the burning and looting could only be understood by eyewitnesses. The survey more accurately measures the extent and value of the damage done.

(3) *Internal consistency and moderation* in both the Agricultural and City Surveys support the general conclusions and most points in detail. Such internal checks have been applied all through the report so only a few instances need be cited here. In the Agricultural Survey the variation in hsien results are within the reasonable expectation of what is known of local conditions. Except for crops destroyed (a small factor in the total), the order of loss by hsien shows a fair degree of correlation between items.

In the City Survey the average loss per family as shown by the family investigation agrees very well with that shown by the building investigation when allowance is made for the fact that the poorer section of the population remained (though by no means limited to the very poor). (Compare Tables 3 and 27.) The sex and age distribution of the killed and taken away agrees with the decline of proportion of young males as compared with figures for the 1932 population. The family composition analysis shows a proportion of broken families similar to what one would expect in view of the number of persons migrating, killed and taken away. Compare Tables 2, 3, and 5.)

For instances of moderation, the prices used in estimating agricultural losses are actual current prices which were below average; stored grain losses of 5.9 *shih tan,* while about the same as in the case of the 1931 flood and the 1932 Shanghai hostilities, are low considering the time of year and the fact that the troop movements and military occupation in this area followed two large rice harvests. Furthermore, this year's rice crop had little chance to move before the critical period.

The city losses are moderate. $271 would only build a very modest house (and a high per cent of families remaining owned their houses); $291 worth of movables for economic uses is quite within range of the small trade group remaining; as is also the figure of $276 for domestic movables. The total property loss of $838 per family is only equal to two year's income previous to hostilities. The item on which exaggeration could have been most expected, in view of the extent of military looting that had taken place, was money. Yet that is only $9.53 per family—less than what every family not on relief must have paid monthly for rice in order to survive. (See Table 9.)

APPENDIX B.

MIGRATION OF WHOLE FAMILIES

ITS POSSIBLE INFLUENCE ON REPORTS OF RESIDENT POPULATION, MIGRATION, LOSSES, LABOR SUPPLY, DEATHS.

As a supplement to the survey of farm families, investigators were asked to make careful inquiries from at least three leading men in every third village on the survey route, as to their estimate for their own village people on the same points included in the farm family survey.[1] This method was employed in the Flood Survey of 1931, and more widely in the Land Utilization Survey under Dr. Buck's direction. In March, 224 villages were reported in this manner, an average of 50 per hsien (4.5 hsien). This body of data confirmed the general picture of the farm survey, but varied irregularly in specific results, even within itself. Since the data consisted only of estimates on behalf of a community, they are of less value than the more precise individual report of each farm family secured on the spot. We have therefore not employed the village data in our general listing and reports.

But on one point the village data throw light secured in no other way. They give an estimate of the number of whole families which migrated and had not returned; while the farm survey could touch only those whole families or parts of families actually found in the farm villages. Thus they indicate a possible supplement or correction to our farm survey figures on estimate of population, migration, losses, labor supply, and death rate. We do not feel that our detailed figures from village estimates justify printing, but the best inference we can make from them is that only 70 per cent of the original families were actually present in March. Comparison of this with the individual farmers' reports that 11 per cent of their family members were absent, suggests that migration under war conditions was usually by whole families, a result confirmed by the city survey and most remarkably by the practical coincidence of reports from the 1931 flood.[1]

It is possible that some of the supposed 30 per cent of migrant families still remained within the *hsiens* studied, but in remote hilly sections not adequately reached by investigators, though the samples obtained covered the ground fairly well. It seems justifiable to assume that the estimates of losses for the area studied need not be modified by consideration of the family migration, for they are calculated upon the average loss per family studied, times the original number of families. Common observation in city and country alike is that absent families suffered in general more grievous losses than those watchful on the spot; whether by burning or by looting. This disparity was offset only in part by the sometimes successful removal of animals and a limited amount of portable property along with the migrating family; and moreover, most of the losses here recorded were of possessions not easily moved in practice.

If the figures of 30 per cent could be relied upon, it would in Table 23 increase the number of people left and not returned to a total of 496,590 (41 per cent of the estimated total original population of 1,211,200); and would increase the actual shortage of laborers enormously (62,000 families with an apparent average of 2.8 laborers in each, removing a figure of 173,600 laborers from the 447,400 mentioned in the Table as present in March); but would increase the expected shortage of laborers by a lesser figure, unknown because there is no report of intention to return.

The figures for deaths (Table 25) are all in terms of rates for families reporting, and therefore are not subject to change unless we assume that the presumed 30 per cent of families suffered an incidence of death greater or less than did the resident majority. Probably some families who migrated early and to a considerable distance or to the relatively safer portions of Nanking, fared better than the rest. On the other hand, the reason why some families migrated and did not return was simply because they or their accompanying neighbors had already experienced military murder and wounding and burning.

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[1] All farmers in Ningshu live in villages; farm families and village families are equivalent terms.

[1] "Forty per cent of all people had to leave their homes, thirty-one per cent as families and nine per cent as individuals." *The 1931 Flood in China,* p. 27.

APPENDIX C

1. FAMILY INVESTIGATION SCHEDULE

(City Survey)

File number ——————

1. Name of family head—————— 2. Present address: (a)———(b)——— 3. Former address:——————

4. Name of investigator:—————— 5. Date of investigation——————

6. Total family members —————— (Include all members sharing in same economic support)

Relation to head	Age	Former occupation	Former daily income	Present occupation	Present daily income	Killed or wounded					
						Date	Killed	Wounded	Circumstances	Cause*	
										Accident	Warfare
1.											
2.											
3. etc.											

* "Accident" was used as a code word to record effect of military operations; "warfare" as a code word for violence by Japanese soldiers apart from military operations.

7. Losses

Item	Number or amount	Original total value	Total value lost	Total value left	Cause of loss		
					Fire	Looting*	Stealing
1. Building address: a) Owned	chien						
b) Rented	chien						
2. Machinery or parts	pieces						
3. Shop equipment	"						
4. Material for manufacture							
5. Goods for sale							
6. Rickshas	pieces						
7. Household furniture	"						
8. Bedding and clothing	"						
9. Food supplies							
10. Bicycles	pieces						
11. Others							

"Looting" was used specifically to record robbery by Japanese soldiers. All other robbery is listed under "Stealing".

8. Migration

Relation to head	Age	Out				In			
		Before Dec. 13	After Dec. 13	Returned		Before Dec. 13	After Dec. 13	Returned	
				Yes	No			Yes	No
1.									
2.									
3. etc.									

9. Sources of cereals last week:
(a) Rice———— (b) Flour ———— c) Price of rice ———— (d) Price of flour ————

2. BUILDING INVESTIGATION SCHEDULE

(City Survey)

File number ——————

1. Building —————— 2. Name of investigator :—————— 3. Date of investigation ——————

4. Name of street: (a) Owned —————— Other address, if any ——————
(b) Rented —————— Other address, if any ——————

5. **Building loss**

Type of building	Residence	Shop	Factory	Godown	Number of buildings (tso)	Number of floors	Construction material				Number of fang	Unit value	Minimum estimated value of losses	Maximum estimated value of losses
							Reinforced concrete	Mortised bricks filled with rubble	Wood	Others				
Main														
Secondary														

6. Loss of contents

Items	Original total value	Total value lost	Cause of loss				Remarks
			Fire	Accident*	Looting*	Stealing	
1. Machinery or parts							
2. Shop equipment							
3. Material for manufacture							
4. Goods for sale							
5. Rickshas							
6. Furniture							
7. Bedding and clothing							
8. Food supplies							
9. Bicycles							
10. Cash, etc.							
11. Others							

* See notes on these headings, Family Investigation.

7. Number of persons now living in buildings——————
Number of persons formerly living in buildings——————
Number of persons now employed——————
Number of persons formerly employed——————

3. FARM FAMILY SCHEDULE

Number————

1. ————Village,————Hsiang ————District,————Hsien. 2. Date of information:————year————month————day.

3. Investigator: Name———— Address:————

4. Total number of persons in family (Babies included. Do not include persons not now living with the family.)————

5. Area planted————(mow) Area owned————(mow) Area rented————(mow)

6. Winter crops

Name of crop	*Number of mow planted in each crop*	*Number of mow of each crop completely destroyed*	*Per cent of a normal (plentiful year) crop expected (including crops not destroyed or partly destroyed)*
1. Wheat			
2. Barley			
3. Rape			
4. Broad beans			
5. Field peas			
6. Others			

8. Seeds needed for crops to be planted this year. (If the farmer has the money to buy the seed, and the seed is available locally, do not include in this table.)

Name of crop	*Number of tou of seed lacking*	*If had money, could you buy locally?*
1. Rice		
2. Corn		
3. Soybean		
4. Cotton seed		
5. Others		

10. Greatest needs (If the farmer has the money to buy the item, and the item is available locally, do not include in this table.)

Kind	*Tou*
1. Wheat	
2. Barley	
3. Rice	
4. Corn	
5. Soybean	

7. Changes of kind and area for spring and summer crops

Name of crop	*Number of mow usually planted*	*Expected planting this year (mow)*	*Reasons for change*
1. Rice			
2. Cotton			
3. Soybeans			
4. Corn			
5. Others			

9. Losses

Kind		*Number*
Animals	1. Water buffaloes	
	2. Oxen	
	3. Donkeys	
Stored grain	4. Wheat	(tou)
	5. Barley	”
	6. Rice	”
	7. Corn	”
	8. Soybeans	”
	9.	
	10.	
Implements	11. Plows	
	12. Harrows	
	13. Pumps	
	14. Hoes	

12. Deaths during the hostilities.

Relationship to family head	*Age*	*Cause of death*		
		Violence	*Disease*	*Other (with explanation)*
1.				
2.				
3.				
4.				

11. Original number of *chien* of buildings, total————
Number of *chien* destroyed completely, total————partly, total ————

13. Number of persons who migrated at time of hostilities and have not yet returned ————

14. Laborers: (1) Number of laborers last spring————(2) Number of laborers now ————
(3) Number of laborers expected to return for spring cultivation ————

15. Number of mow made unfit for cultivation because of the hostilities ————

Tables

Urban Survey: Tables 1 to 16

Rural Survey: Tables 17 to 32.

TABLE 1

FAMILIES STUDIED AND ESTIMATED POPULATION

By section of city

Section	*Number of families studied*	*Total family members in families studied*	*Average size of family*	*Estimated total number of families*	*Estimated total family members*
A. Inside of wall	906	4,252	4.7	45,300	212,600
1. Safety Zone	298	1,358	4.6	14,900	67,900
2. Refugee Camps	114	550	4.8	5,700	27,500
3. Cheng Hsi	115	544	4.7	5,750	27,200
4. Cheng Tung	55	232	4.2	2,750	11,600
5. Cheng Pei	51	243	4.8	2,550	12,150
6. Men Hsi	126	631	5.0	6,300	31,500
7. Men Tung	103	451	4.4	5,150	22,600
8. Garden	44	243	5.5	2,200	12,150
B. Outside of wall	43	171	4.0	2,150	8,550
9. Hsiakwan	13	46	3.5	650	2,300
10. Chunghwamen	16	79	4.9	800	3,950
11. Shuihsimen	14	46	3.3	700	2,300
All Sections	949	4,423	4.7	47,450	221,150*

*On the basis of incomplete registrations carried out by the military authorities between the end of December and the end of January, members of the International Committee estimated the population of Nanking at that time to approach 250,000, a figure decidedly above their deliberately cautious guesses of earlier weeks. Semi-official Chinese conjectures ran closer to 300,000. There was no great change in February and March, but a noticeable inflow from less orderly areas near the city probably built up a small surplus over departures, which also were visibly significant. We venture an estimate of 250,000 to 270,000 in late March, some of whom were inaccessible to the investigators, and some of whom were passed by; 221,150 are represented in the survey. On May 31, the residents registered in the five district offices of the municipal government (including Hsiakwan, but apparently no other sections outside the gates), numbered 277,000. This figure is admittedly incomplete, particularly as to women and children, and is commonly amended to nearer 400,000. One year ago the population of the Nanking Municipality was just over 1,000,000, a figure sharply reduced in August and September, rising again to nearly 500,000 in early November. The old Municipality included a larger area than is now considered, comprising at least one-tenth more in population.

TABLE 2

AGE AND SEX DISTRIBUTION OF POPULATION STUDIED

shown in percentages

Age group	Per cent in each age group						Sex ratio*	
	1938, All Sections			1932**			Present study (1938)	1932**
	Male	Female	Male and female	Male	Female	Male and female		
0— 4	8.1	8.7	8.4	10.7	12.1	11.4	96.8	101.3
5— 9	12.5	12.5	12.5	9.4	9.8	9.5	103.3	109.3
10—14	12.3	11.1	11.7	9.9	9.5	9.7	114.0	119.2
15—19	8.6	8.2	8.4	9.0	8.4	8.7	108.4	123.4
20—24	6.6	6.5	6.6	8.0	7.4	7.7	105.7	124.5
25—29	6.1	6.4	6.2	9.7	8.7	9.3	100.0	128.1
30—34	5.6	6.4	6.0	8.3	7.7	8.0	89.3	123.2
35—39	6.1	6.0	6.1	8.0	7.4	7.8	105.3	123.4
40—44	7.8	7.2	7.5	7.4	6.8	7.1	112.1	124.5
45—49	8.4	5.3	6.9	6.1	5.7	5.9	163.5	121.0
50—54	5.8	5.8	5.8	4.8	4.2	4.5	104.8	131.6
55—59	3.9	4.2	4.0	3.7	4.9	4.3	95.6	85.3
60 and over	8.2	11.7	9.9	5.0	7.4	6.1	72.2	77.7
Totals	100.0	100.0	100.0	100.0	100.0	100.0	103.4	114.5
0—14	33	32	32	30	32	31	105	109
15—49	49	46	48	57	52	54	111	124
50 and over	18	22	20	13	16	15	85	94
Totals	100	100	100	100	100	100	103	114

*Number of males per 100 females.

**The data for 1932 are from the same study as the 2,027 families referred to in Table 3, but only for 1,756 families.

TABLE 3

FAMILY COMPOSITION

By section of the city, shown in percentages

Section	Type of Family												Total per cent in each section
	Normal		Broken		Non-family		Normal with relatives		Broken with relatives		Non-family with relatives		
	Husband and wife (1)	Husband, wife, and children (2)	Man, children (3)	Woman, children (4)	Man alone (5)	Woman alone (6)	Husband, Wife, relatives (7)	Husband, wife, children, relatives (8)	Man, children, relatives (9)	Woman, children, relatives (10)	Man, relatives (11)	Woman, relatives (12)	
A. Inside of city	4.3	26.3	2.5	6.8	5.1	2.0	5.0	27.7	5.9	6.5	5.7	2.2	100.0
1. Safety Zone	6.0	25.8	2.4	7.7	5.4	1.7	5.0	27.8	4.4	5.7	6.4	1.7	100.0
2. Refugee Camps	4.4	25.4	1.8	13.2	3.5	1.8	5.3	21.0	1.8	14.0	1.7	6.1	100.0
3. Chen Hsi	3.5	25.2	2.6	5.2	3.5	2.6	6.1	25.2	5.2	10.4	9.6	0.9	100.0
4. Chen Tung	3.6	27.3	7.3	9.1	7.3	3.7	1.8	30.9	3.6	1.8	3.6	—	100.0
5. Chen Pei	3.9	19.6	3.9	2.0	7.8	3.9	5.9	25.5	19.6	2.0	5.9	—	100.0
6. Men Hsi	2.4	27.8	0.8	5.6	5.6	2.4	5.5	29.3	7.1	7.9	4.0	1.6	100.0
7. Men Tung	3.9	29.1	1.9	4.9	5.8	1.0	4.9	33.0	3.9	1.9	4.9	4.8	100.0
8. Garden	2.3	29.5	4.5	—	2.3	—	2.3	31.8	15.9	—	11.4	—	100.0
B. Outside of city*	7.0	23.3	4.6	2.3	9.3	4.7	4.6	18.6	7.0	2.3	16.3	—	100.0
9. Hsiakwan	7.7	30.7	7.7	—	23.1	—	—	15.4	—	—	15.4	—	100.0
10. Chunghwamen	6.3	37.5	—	6.2	—	—	12.5	18.7	6.3	—	12.5	—	100.0
11. Shuihsimen	7.1	—	7.1	—	7.2	14.3	—	21.4	14.3	7.1	21.5	—	100.0
All Sections, 1938	4.4	26.2	2.6	6.6	5.3	2.1	5.0	27.3	5.9	6.3	6.2	2.1	100.0
Nanking, 1932**	9.5	33.1	2.3	3.4	5.3	2.1	4.1	25.7	4.6	2.6	7.1	0.1	100.0

*The number of cases studied in each area outside of the city wall was too small to make the percentage distribution very significant but for the areas combined the sample is comparable with sections in the city.

**A study of 2,027 families in sections of Nanking and class of people from which present population largely came.

(Lewis S. C. Smythe, "The Composition of the Chinese Family," *Nanking Journal*, University of Nanking, November, 1935, Vol. 5, No. 2, pp. 371-393. Figures cited, p. 382). In both studies the classification here used is by Dr. Mildred Parten, *Annals of the American Academy of Political and Social Science*. March, 1932. p. 32.

TABLE 4

NUMBER AND CAUSE OF DEATHS AND INJURIES, BY DATE

Date (*1937-1938*)	*Deaths by*			*Injuries by*			*Taken away***	*Total killed and injured*	*Per cent killed and injured by soldiers' violence*
	*Military operations**	*Soldiers' violence*	*Unknown*	*Military operations**	*Soldiers' violence*	*Unknown*			
Before Dec. 12	600	—	—	50	—	—	—	650	—
Dec. 12, 13	50	250	—	—	250	—	200	550	91
Dec. 14-Jan. 13	—	2,000	150	—	2,200	200	3,700	4,550	92
Jan. 14-Mar. 15	—	—	—	—	—	—	250	—	—
Date unknown	200	150	—	—	600	50	50	1,000	75
Total	850	2,400	150	50	3,050	250	4,200	6,750	81
Per cent of cases of violence occurring after Dec. 13th.		89			90				

*By "military operations" is meant bombing, shelling, or bullets fired in battle.

**Most of those "taken away" have not been heard from in any manner.

TABLE 5

SEX AND AGE OF DEATHS, INJURIES BY MILITARY VIOLENCE, AND OF PERSONS TAKEN AWAY

shown in percentages

Age group	*Death of*				*Injuries of*				*Taken away (males only)*	*Per cent males in killed and injured*
	Males by		*Females by*		*Males by*		*Females by*			
	Soldiers' violence	*Others**	*Soldiers' violence*	*Others**	*Soldiers' violence*	*Others**	*Soldiers' violence*	*Others**		
Under 5 years	—	—	—	—	—	—	—	—	—	—
5-14	6	8	8	—	—	—	8	—	—	50
15-29	25	25	23	—	44	80	65	—	55	61
30-44	22	8	15	14	35	20	11	50	36	76
45-59	19	42	15	57	15	—	8	—	9	68
60 and over	28	17	39	29	6	—	8	50	—	58
Total	100	100	100	100	100	100	100	100	100	64
Number per 1,000 in family members represented**	8	3	3	2	8	1	6	0.5	19	—
Number of persons	1,800	600	650	350	1,700	250	1,300	100	4,200	—

*"Others" includes both by "Military Operations" and "Unknown" as shown in Table 4.

**A total of 221,150 persons. See Table 1.

TABLE 6

FORMER EMPLOYMENT AND EARNINGS, BY OCCUPATION

Occupations	*Number*			*Per cent of all persons employed*	*Average daily earnings per person employed*
	Males	*Females*	*Total*		
Agriculture, mining	5,500	100	5,600	10	0.73
Manufacture, mechanical	9,650	800	10,450	18	1.08
Trade	18,200	1,700	19,900	34	1.20
Transportation	3,550	100	3,650	6	1.14
Clerical occupations	900	—	900	2	0.86
Domestic and personal service	6,000	700	6,700	12	0.96
Public service not elsewhere classified	1,800	100	1,900	3	1.03
Professional service	1,600	150	1,750	3	1.05
General labor*	3,050	1,150	4,200	7	0.34
Combined shops*	2,700	150	2,850	5	0.91
Total and averages	52,950	4,950	57,900	100	1.01
Per cent of total population employed				26	
Per cent of persons 10 years and over employed				33	
Per cent of persons 15 years and over employed				38	

*This classification follows the main groupings of the United States Census, adapted for local use by dropping the two groups of forestry and fishing, and extraction of minerals (the one miner reported was added to the single extractive group of agriculture); and by adding the two groups of general labor and combined shops. "Combined shops" refer to the common case of shops that both make and sell, and therefore do not fall into manufacture or into trade.

TABLE 7

PRESENT EMPLOYMENT AND EARNINGS BY OCCUPATION AND SECTION OF THE CITY

Occupations	*Inside of wall*		*Safety Zone*	*Refugee Camps*	*Cheng-hsi*	*Cheng-tung*	*Cheng-pei*	*Men hsi*	*Men tung*	*Garden*	*Outside of wall Males only*	*All Sections*			*Per cent of all persons employed*	*Average daily earnings per person employed*
	Male	*Female*										*Male*	*Female*	*Total*		
Agriculture, mining	2,450	50	350	50	—	—	100	—	—	2,000	—	2,450	50	2,500	12	0.20
Manufacture, mechanical	900	—	250	50	100	100	—	150	250	—	50	950	—	950	5	0.38
Trade	12,550	500	5,200	700	2,400	550	850	2,350	950	50	600	13,150	500	13,650	67	0.31
Transportation	900	—	300	150	250	—	50	50	100	—	—	900	—	900	4	0.42
Clerical occupations	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Domestic & personal service	650	200	300	50	100	50	50	200	100	—	100	750	200	950	5	0.45
Public service not elsewhere classified	150	—	100	—	—	—	50	—	—	—	—	150	—	150	1	1.00
Professional service	—	100	—	50	—	—	—	50	—	—	—	—	100	100	*	0.55
General labor	350	100	100	50	50	—	150	100	—	—	50	400	100	500	3	0.25
Combined shops	550	—	200	—	100	50	—	150	50	—	100	650	—	650	3	0.22
Total employed	18,500	950	6,800	1,100	3,000	750	1,250	3,050	1,450	2,050	900	19,400	950	20,350	100	0.32
Per cent of population employed	9		10	4	11	6	10	10	6	17	11	9				
Per cent of persons 10 years and employed	11		13	5	14	8	13	12	8	23	13	12				
Per cent of persons 15 years and over employed	14		15	6	17	10	15	15	9	26	15	14				

* Less than 0.5 per cent.

TABLE 8

SOURCES OF CEREALS DURING PRECEDING WEEK, BY SECTION OF THE CITY, SHOWN IN PERCENTAGES

Section	*Rice* from*			
	Self-government shops	*Small shops*	*Food kitchens*	*Friend and other sources*
A. Inside of city	14	64	18	4
1. Safety Zone	10	72	17	1
2. Refugee Camps	—	9	82	9
3. Cheng Hsi	15	69	12	4
4. Cheng Tung	29	60	2	9
5. Cheng Pei	23	73	2	2
6. Men Hsi	20	73	2	5
7. Men Tung	20	74	—	6
8. Garden	5	85	8	2
B. Outside of city	16	70	—	14
9. Hsiakwan	31	46	—	23
10 Chunghwamen	19	75	—	6
11. Shuihsimen	—	86	—	14
All Sections	14	64	17	5

*Only 2.5 per cent of the families reported the use of flour because there was practically none on the market in March.

TABLE 9

LOSSES OF BUILDINGS AND MOVABLE PROPERTY FOR FAMILIES REMAINING IN NANKING, BY CAUSE

Item	*Average per family*	*Total*	*C A U S E*				
			Military operations	*Fire*	*Military robbery*	*Other robbery*	*Unknown*
Buildings (owned)	$271.56	12,885,600	496,800	12,291,200	78,600	17,700	1,300
Movable property							
1. Machinery, tools	16.00	759,200	—	424,000	269,200	29,000	37,000
2. Shop equipment	65.01	3,084,600	—	1,833,500	1,025,000	150,000	76,100
3. Materials for manufacture	19.55	927,500	—	163,300	710,200	37,000	17,000
4. Stock for sale	186.71	8,859,300	6,000	2,607,700	4,178,000	1,911,400	156,200
5. Rickshas	3.60	171,000	11,500	65,500	79,200	—	14,800
Total movables for economic uses	290.87	13,801,600	17,500	5,094,000	6,261,600	2,127,400	301,100
6. Household furniture utensils	110.37	5,237,200	63,000	1,886,800	1,619,800	796,800	870,800
7. Clothing, bedding	115.43	5,477,200	24,200	1,196,300	3,155,800	782,900	318,000
8. Family food and supplies	7.93	376,400	3,500	50,300	290,300	15,200	17,100
9. Bicycles	2.59	122,800	12,500	6,000	102,300	—	2,000
10. Cash, jewelry	9.53	452,000	—	16,500	427,800	2,500	5,200
11. Others	29.83	1,415,300	57,100	149,000	1,167,300	26,000	15,900
Total movables for domestic uses	275.68	13,080,000	160,300	3,304,900	6,763,300	1,623,400	1,229,000
Total all movable property	566.55	26,882,500	177,800	8,398,900	13,024,900	3,750,800	1,530,100
Grand total	$838.11	39,768,100	674,600	20,690,100	13,103,500	3,768,500	1,531,400
Percentage		100.0	1.7	52.0	33.0	9.5	3.8

TABLE 10

LOSSES OF BUILDINGS AND MOVABLE PROPERTY FOR FAMILIES REMAINING IN NANKING (BY ORIGINAL ADDRESS) ACCORDING TO TYPE OF BUILDING, CAUSE AND SECTION OF THE CITY,

shown in percentages

Section	Losses in Dollars			Total* Per cent Caused By				
	Business	*Residence*	*Total*	*Military operations*	*Fire*	*Military robbery*	*Other robbery*	*Unknown*
Safety Zone	55,000	1,361,800	1,416,800	0.5	49.4	33.5	16.4	0.2
Cheng Hsi	2,712,500	3,339,300	6,051,800	0.4	33.8	47.5	10.3	8.0
Cheng Tung	7,424,400	4,730,300	12,154,700	0.9	61.7	33.6	2.9	0.9
Cheng Pei: Tung	1,321,100	3,384,700	4,705,800	5.4	39.7	49.3	3.9	1.7
Cheng Pei	195,700	378,100	573,800	1.9	10.9	54.9	15.1	17.2
Men Hsi	3,205,200	1,560,000	4,765,200	3.7	37.7	17.6	31.8	9.2
Men Tung	3,084,900	4,205,600	7,290,500	0.6	66.4	20.5	9.8	2.7
Hsiakwan	316,500	919,300	1,235,800	0.2	61.2	36.6	2.0	—
Chunghwamen	381,900	437,000	818,900	—	56.6	14.7	11.4	17.3
Shuihsimen	242,800	177,100	419,900	—	52.8	47.1	0.1	—
Tungchimen	95,000	239,900	334,900	—	91.9	8.1	—	—
Total All Sections	19,035,000	20,733,100	39,768,100	1.6	51.7	33.2	9.6	3.9
Per cent of all losses	48	52	100					

*The causes of loss showed so nearly the same distribution for business and residence buildings that it was unnecessary to include those percentages in the table.

TABLE 11

NUMBER OF BUILDINGS DAMAGED OR LOOTED,

According to type of building, cause and section of the city, shown in percentages

Section of the City	*Number of buildings*	*Per cent damaged by*			
		Military operations	*Fire*	*Looting*	*All causes*
A. Inside of wall	30,516	1.8	13.0	73.2	88.0
1. Safety Zone	1,493	*	0.6	9.0	9.6
2. Cheng Pei: Tung	5,689	0.6	8.7	85.0	94.3
3. Cheng Hsi	6,581	1.9	12.5	79.9	94.3
4. Cheng Tung	3,417	3.9	10.2	74.8	88.9
4. Cheng Pei	2,222	0.1	3.5	95.6	99.2
6. Men Hsi	4,360	2.5	5.8	69.4	77.7
7. Men Tung	6,754	2.4	29.1	65.1	96.6
B. Outside of wall	8,684	1.1	61.6	27.5	90.2
8. Hsiakwan	3,948	0.9	63.4	34.0	98.3
9. Chunghwamen	2,665	0.6	51.9	27.9	80.4
10. Shuihsimen	876	3.3	60.3	6.8	70.4
11. Tungchimen	1,195	1.3	78.3	20.1	99.7
All Sections	39,200	1.7	23.8	63.0	88.5

*Two tenths of a per cent of the buildings are known to have been hit by shell fire but the damage was not observed by investigators in March.

Table 12

LOSSES OF BUILDINGS AND CONTENTS, ACCORDING TO SECTION OF THE CITY

Item	*Inside of wall*	*Safety Zone*	*Cheng Hsi*	*Cheng Tung*	*Cheng Pei*	*Cheng Pei: Tung*	*Men Hsi*	*Men Tung*	*Outside of wall*	*Hsiakwan*	*Chung-hwamen*	*Shuihsi-men*	*Tungchi-men*	*All Sections*	*Percentage*
Buildings (owned)	48,321,800	551,200	4,025,900	13,040,300	2,348,700		9,328,600	11,782,800	54,669,700	42,213,400	3,154,100	2,846,500	6,455,700	102,991,500	42
Movable property															
1. Machinery, tools	788,800	135,000	95,300	339,800	—	160,300	3,000	55,400	13,457,500	11,914,000	184,500	—	1,359,000	14,246,300	6
2. Shop equipment	5,351,400	561,200	882,200	1,394,200	213,700	711,700	356,300	1,232,100	10,212,100	8,987,400	255,300	60,400	909,000	15,563,500	6
3. Materials for manufacture	1,009,100	97,500	489,800	152,000	1,200	34,400	65,600	168,600	8,992,600	4,612,800	315,000	3,800	4,061,000	10,001,700	4
4. Stock for sale	24.396,800	399,000	3,201,000	5,891,900	887,900	3,124,200	6,666,800	4,226,000	49,234,000	43,899,200	1,755,000	493,500	3,086,300	73,630,800	30
5. Rickshas	241,700	35,200	20,200	49,700	19,700	64,400	14,500	38,000	30,800	20,900	6,300	800	2,800	272,500	
Total movables for economic uses	31,787,800	1,227,900	4,688,500	7,827,600	1,122,500	4,095,000	7,106,200	5,720,100	81,927,000	69,434,400	2,516,000	558,500	9,418,100	113,714,800	46
6. Household furniture, utensils	6,569,200	862,900	748,500	1,195,500	824,800	983,800	668,900	1,284,800	2,121,500	1,730,900	235,500	78,900	76,200	8,690,700	3
7. Clothing, bedding	8.354,200	912,200	1,343,600	1,147,700	873,300	1,364,800	1,242,800	1,469,800	2,999,300	2,142,400	509,100	196,000	151,800	11,353,500	5
8. Family food and supplies	1,269,900	82,300	183,400	327,000	83,200	170,100	157,000	266,900	434,600	363,700	48,400	22,500	—	1,704,500	1
9. Bicycles	581,000	65,500	65,600	123,000	59,500	98,600	82,600	86,200	62,100	28,900	15,100	17,400	700	643,100	
10. Cash, jewelry	478,500	34,700	73,800	101,500	4,800	73,100	89,100	101,500	225,000	201,800	22,200	1,000	—	703,500	
11. Others	5,725,200	363,400	162,400	2,290,400	140,000	142,300	1,682,900	943,800	855,200	704,200	148,700	2,300	—	6,580,400	3
Total movables for domestic uses	22,978,000	2,321,000	2,577,300	5,185,100	1,985,600	2,832,700	3,923,300	4,153,000	6,697,700	5,171,900	979,000	318,100	228,700	29,675,700	12
Total all movable property	54,765,800	3,548,900	7,265,800	13,012,700	3,108,100	6,927,700	11,029,500	9,873,100	88,624,700	74,606,300	3,495,000	3,876,600	9,646,800	143,390,500	58
Grand Total	103,087,600	4,100,100	11,291,700	26,053,000	5,456,800	14,172,000	20,358,100	21,655,900	143,294,400	116,819,700	6,649,100	3,723,100	16,102,500	246,381,900	100

TABLE 13

LOSSES OF BUILDINGS AND CONTENTS, BY ITEM AND CAUSE

Items	*Total*	*Cause*				*Average loss per original family*
		Military operations	*Fire*	*Military or other robbery*	*Unknown*	
Buildings	102,991,500	2,176,500	97,205,800	3,609,200	—	527.44
Movable property						
1. Machinery, tools	14,246,300	27,000	13,195,700	1,014,600	9,000	72.96
2. Shop equipment	15,563,500	28,000	10,075,500	5,432,000	28,000	79.70
3. Material for manufacture	10,001,700	21,600	8,280,800	1,609,300	90,000	51.22
4. Stock for sale	73,630,800	100,500	29,842,900	40,725,400	2,962,000	377.08
5. Ricshas	272,500	3,400	28,800	240,300	—	1.40
Total movable for economic uses	113,714,800	180,500	61,423,700	49,021,600	3,089,000	582.36
6. Household, furniture, utensils	8,690,800	146,800	2,520,900	6,005,600	17,500	44.51
7. Clothing, bedding	11,353,300	144,500	2,145,800	9,049,100	13,900	58.14
8. Family food and supplies	1,704,500	12,700	332,900	1,355,100	4,800	8.73
9. Bicycles	643,200	40,500	20,200	582,500	—	3.29
10. Cash, jewelry	703,500	7,700	70,800	625,000	—	3.60
11. Others	6,580,300	160,000	1,449,300	4,971,000	—	33.70
Total movables for domestic uses	29,675,600	512,200	6,538,900	22,588,300	36,200	151.97
Total all movable property	143,390,400	692,700	67,962,600	71,609,900	3,125,200	734.33
Grand total	246,381,900	2,869,200	165,168,400	75,219,100	3,125,200	1,261.77
Percentages	100	1	67	31	1	

TABLE 14

LOSSES BY DAMAGE AND LOOTING OF BUILDLINGS AND CONTENTS ACCORDING TO TYPE OF BUILDING, CAUSE AND SECTION OF THE CITY,

shown in percentages

Section	*Business*					*Residence*					*Total*				
	Losses in dollars	*Per cent caused by*				*Losses in dollars*	*Per cent caused by*				*Losses in dollars*	*Per cent caused by*			
		Military operations	*Fire*	*Looting and stealing*	*Unknown*		*Military operations*	*Fire*	*Looting and stealing*	*Unknown*		*Military operations*	*Fire*	*Looting and stealing*	*Unknown*
A. Inside of wall	79,076,300	1	52	43	4	24,011,300	5	45	50	–	103,087,600	3	50	44	3
1. Safety Zone	1,638,400	2	9	91	–	2,461,700	1	12	87	–	4,100,100	1	10	89	–
2. Cheng Hsi	9,214,500	2	44	54	–	2,077,200	1	26	73	–	11,291,700	2	41	57	–
3. Cheng Tung	23,431,800	3	60	28	9	2,621,200	17	31	52	–	26,053,000	5	57	31	7
4. Cheng Pei	3,173,800	2	48	50	–	2,283,000	3	24	73	–	5,456,800	2	38	60	–
5. Cheng Pei: Tung	10,096,900	1	50	49	–	4,075,100	1	52	47	–	14,172,000	1	50	49	–
6. Men Hsi	15,985,100	*	43	55	2	4,373,000	14	49	37	–	20,358,100	3	44	51	2
7. Men Tung	15,535,800	1	61	34	4	6,120,000	2	70	28	–	21,655,900	1	63	33	3
B. Outside of wall	130,653,400	*	79	21	*	12,641,000	1	86	13	–	143,294.400	*	79	21	*
8. Hsiakwan	109,850,700	*	77	23	–	6,968,900	–	86	14	–	116,819,600	*	78	22	–
9. Chunghwamen	4,122,600	–	54	44	2	2,526,500	1	84	15	–	6,649,100	*	66	33	1
10. Shuihsimen	1,886,200	8	57	35	–	1,837,000	6	84	10	–	3,723,200	8	70	22	–
11. Tungchimen	14,793,900	–	100	*	–	1,308,600	*	92	8	–	16,102,500	*	99	1	
All Sections	209.729,700	1	69	29	1	36,652,300	4	59	37	–	246,382,000	1	67	31	1
Per cent of all losses	85					15					100.0	1	67	31	1

*Less than 0.1 per cent.

NINGSHU AREA
AGRICULTURAL SURVEY MAP
MARCH, 1938

寧屬區域
農業調查地圖

一九三八年三月

LEGEND 圖例

◎	HSIEN CITY	縣城
○	MARKET TOWN	市鎮
36	INDEX OF DAMAGE *	損失指数
–··–··–	PROVINCIAL BOUNDARY	省界
–·–·–	HSIEN BOUNDARY	縣界
——	MOTOR ROAD	汽車路
▬▭▬	RAILWAY —	鉄路
▨	LAKE	湖泊
▨	RIVER	河流
▨	BRIDGE	橋樑

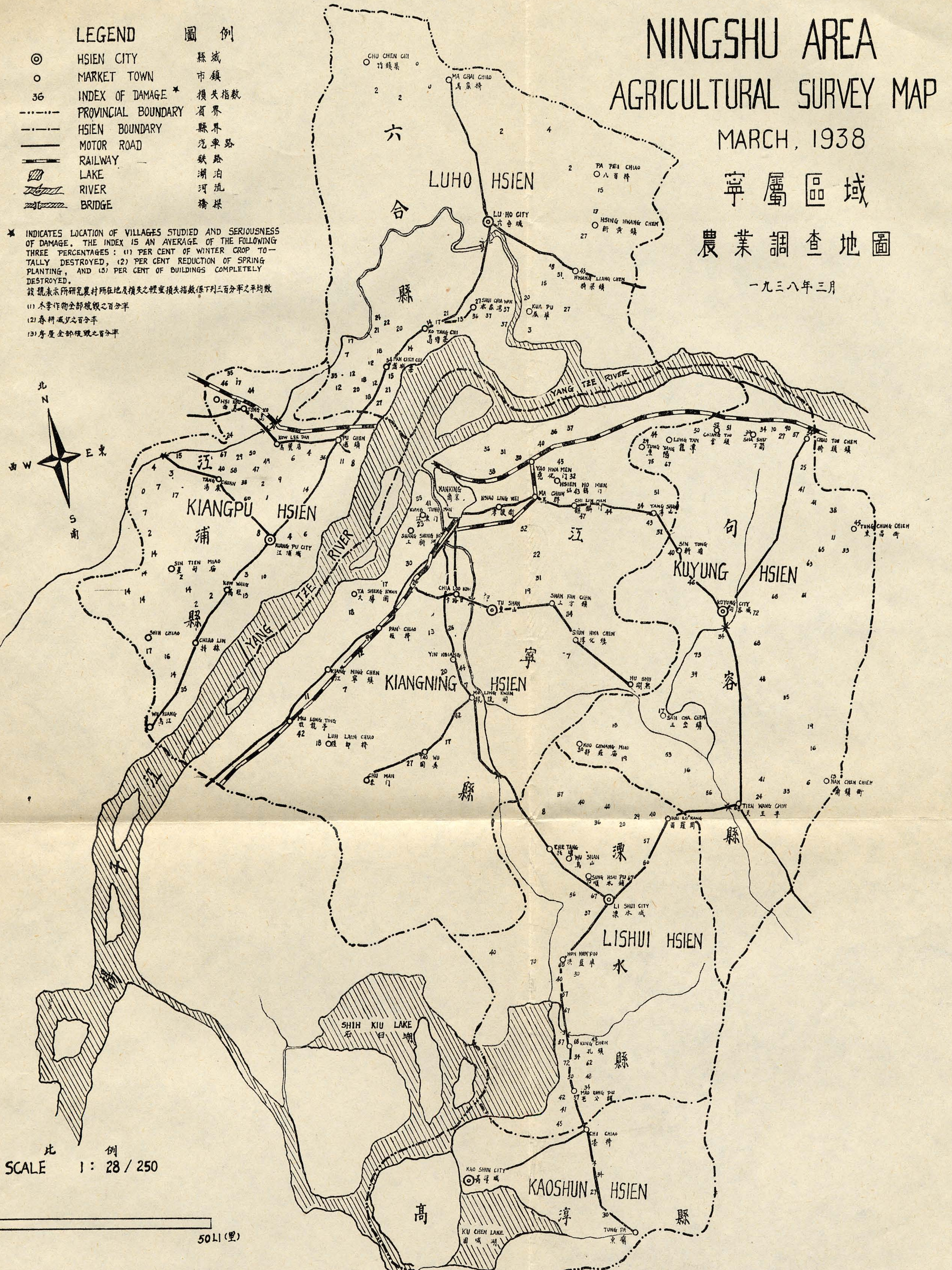
* INDICATES LOCATION OF VILLAGES STUDIED AND SERIOUSNESS OF DAMAGE. THE INDEX IS AN AVERAGE OF THE FOLLOWING THREE PERCENTAGES: (1) PER CENT OF WINTER CROP TOTALLY DESTROYED, (2) PER CENT REDUCTION OF SPRING PLANTING, AND (3) PER CENT OF BUILDINGS COMPLETELY DESTROYED.

該號表示所研究農村所在地及損失之輕重損失指數係下列三百分率之平均数

(1) 冬季作物全部被毀之百分率

(2) 春耕減少之百分率

(3) 房屋全部被毀之百分率

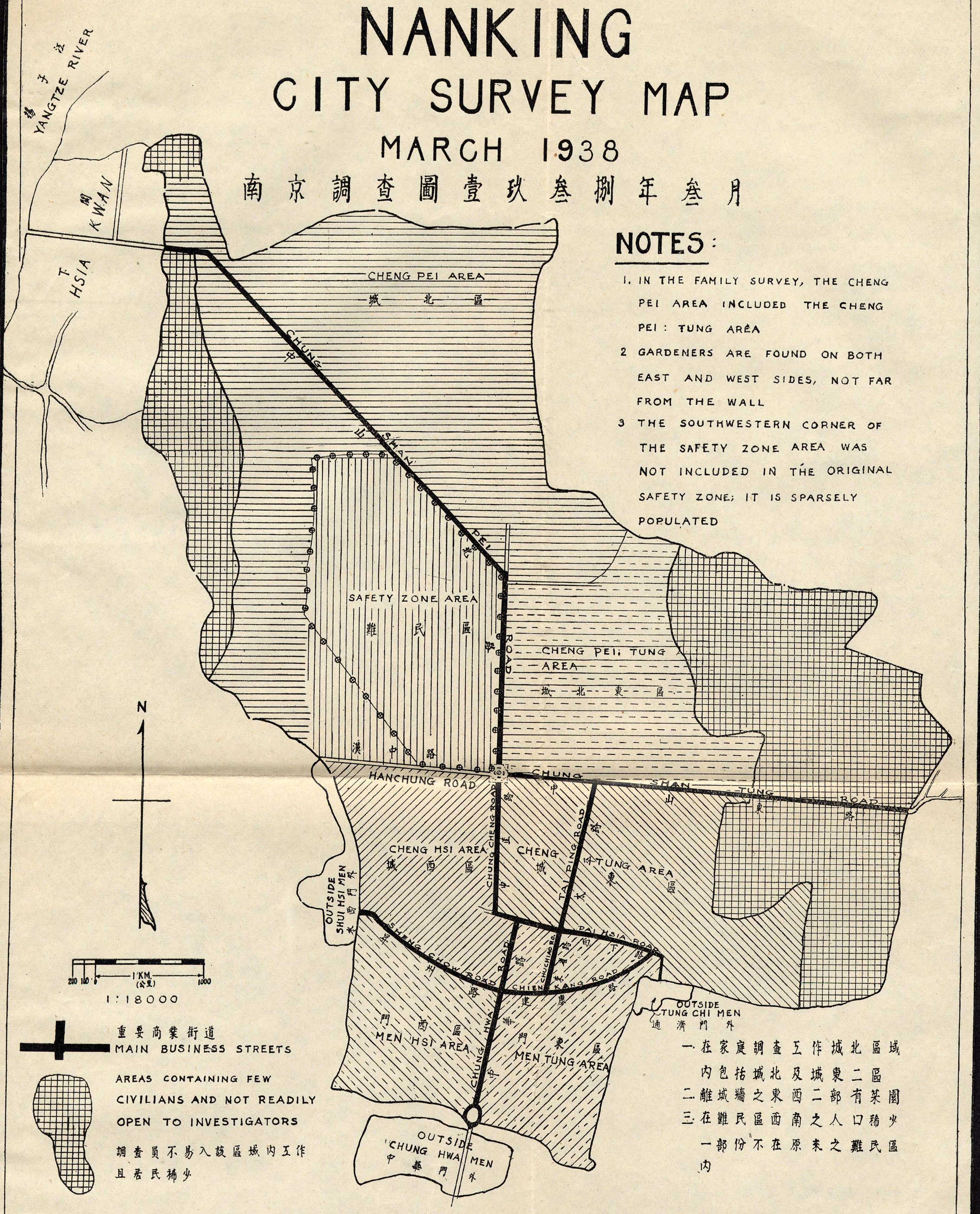

LUHO HSIEN
六合縣
LU HO CITY 六合城
CHU CHEN CHI 竹鎮集
MA CHAI CHIAO 馬家橋
PA PEI CHIAO 八百橋
HSING HWANG CHEN 新黄鎮
HWANG LIANG CHEN 黄梁鎮
SHUI CHIA WAN 水家湾
KUA PU 瓜埠
KO TANG CHI 葛塘集
PAN CHEN CHI 盤城集
HSI KOU 西溝
TUNG KO 東溝
KOW LEE DAN 高覺店
PU CHEN 浦鎮
TANG CHUAN 湯泉
KIANGPU HSIEN
江浦縣
KIANG PU CITY 江浦城
SIN TIEN MIAO 新甸庙
KOW WANG 高旺
SHIH CHIAO
CHIAO LIN 橋林
WU KIANG 烏江
YANG TZE RIVER
NANKING 南京
KIANG TUNG MAN 江東门
SHANG SHING HO 上新河
HSIAO LING WEI 孝陵衛
YAO HWA MEN 尧化门
HSIEN HO MEN 仙鶴门
MA CHUN 馬群
CHI LIN MEN 麒麟门
TANG SHAN 湯山
TA SHENG KWAN 大勝関
CHIA LOO KOW 十路口
TU SHAN 東山
SHAN FAN CHEN 上方鎮
SHUN HWA CHEN 淳化鎮
HU SHU 湖熟
PAN CHIAO 板橋
YIN HSIANG
KIANG NING CHEN 江寧鎮
KIANGNING HSIEN
江寧縣
MO LING KWAN 秣陵関
MU LUNG TING 牧龍亭
LUH LANG CHIAO 陸郎橋
TAO WU 陶吳
CHU MAN 朱门
LUNG TAN 龍潭
TUNG YANG 東陽
CHIANG TSO 倉頭
SHA SHU 下蜀
CHIAO TOU CHEN 橋頭鎮
SIN TONG 新塘
KUYUNG HSIEN
句容縣
KUYUNG CITY 句容城
TUNG CHUNG CHIEH 東昌街
SAN CHA CHEN 三岔鎮
KUO CHWANG MIAO 郭莊庙
NAN CHEN CHIEH 南鎮街
TIEN WANG CHIH 天王寺
HSI LO KANG 西羅岡
CHE TANG 柘塘
WU SHAN 烏山
SUNG HSAI PU 順水鋪
LI SHUI CITY 溧水城
LISHUI HSIEN
溧水縣
HON NAM POO 洪藍埠
KUNG CHEN 孔鎮
MAO KONG PU 毛公鋪
SHIH KIU LAKE 石臼湖
CHI CHIAO 漆橋
KAO SHUN CITY 高淳城
KAOSHUN HSIEN
高淳縣
KU CHEN LAKE 固城湖
TUNG PA 東壩
北 N
S 南
西 W
E 東
比例
SCALE 1: 28/250
0
50 LI (里)

NANKING

CITY SURVEY MAP

MARCH 1938

南京調查圖壹玖叁捌年叁月



揚子江
YANGTZE RIVER
下關
HSIA KWAN
CHENG PEI AREA
城北區
CHUNG SHAN PEI ROAD
中山北路
SAFETY ZONE AREA
難民區
CHENG PEI TUNG AREA
城北東區
漢中路
HANCHUNG ROAD
CHUNG SHAN TUNG ROAD
中山東路
CHUNG CHENG ROAD
中正路
TAIPING ROAD
太平路
CHENG HSI AREA
城西區
CHENG TUNG AREA
城東區
OUTSIDE SHUI HSI MEN
水西門外
SHENG CHOW ROAD
昇州路
PAI HSIA ROAD
白下路
CHUCHIAO RD.
朱雀路
CHIEN KANG ROAD
建康路
CHUNG HWA ROAD
中華路
門西區
MEN HSI AREA
門東區
MEN TUNG AREA
OUTSIDE TUNG CHI MEN
通濟門外
OUTSIDE CHUNG HWA MEN
中華門外
N
200 100 0
1 KM. (公里)
1000
1:18000

NOTES:

1. IN THE FAMILY SURVEY, THE CHENG PEI AREA INCLUDED THE CHENG PEI: TUNG AREA
2. GARDENERS ARE FOUND ON BOTH EAST AND WEST SIDES, NOT FAR FROM THE WALL
3. THE SOUTHWESTERN CORNER OF THE SAFETY ZONE AREA WAS NOT INCLUDED IN THE ORIGINAL SAFETY ZONE; IT IS SPARSELY POPULATED

一在家庭調查工作城北區域內包括城北及城東二區
二離城牆之東西二部有菜園
三在難民區西南之人口稀少一部份不在原來之難民區內

重要商業街道
MAIN BUSINESS STREETS

AREAS CONTAINING FEW CIVILIANS AND NOT READILY OPEN TO INVESTIGATORS

調查員不易入該區域內工作且居民稀少

21 Hankow Road,
Oct. 14, 1938.

Dear Friends:-

A few copies of the long-delayed survey report, "War Damage in the Nanking Area", were sent by post, but never reached Nanking. Now a parcel has come by gunboat. Here is a copy with our compliments.

Three thousand copies were printed, allotted roughly as follows: 300 to leaders of relief organizations, key men for publicity, and foreign officials in China and Japan; 400 each to New York and London for the China Relief Committees to use among their speakers, local representatives, andd selected eidtors or authors; 500 each to New York and London for sale in satisfaction of expected inquiries after the distribution of the foregoing; 450 for Shanghai sale, local use, and reserve to meet later calls; 450 purchased by the Chungking Waichiaopu for Chinese diplomats and consuls.

Within a closely limited number we could supply further copies for despatch to those whom you feel should have them. Naturally, purchase in Shanghai or abroad is preferable unless there is good reason to the contrary. If you wish to apply, please give names and positions, or reasons; we will check against a unified list of copies already sent out to individuals.

Yours sincerely,

Searle

To the Reader

The Nanking International Relief Committee is the continuing organization of the Committee that established the Nanking Safety Zone in November, 1937. Since the disbandment of the Zone in February, 1938, the Committee has operated purely as a private relief organization dependent on contributions for carrying on its humanitarian work. The Committee has tried to care for the needy in Nanking, and has also extended loans to farmers in the district around Nanking from funds specially given for that purpose.

To all who have helped in its work the Committee would like to express its heartfelt thanks.

As this survey shows, the need for relief continues, and further assistance is therefore earnestly requested. Contributions may be sent to the Treasurer of the Committee, Rev. James H. McCallum, 4 Tientsin Road, Nanking, China, or in the case of remittances by cable, direct to "NANINRELCO" account at the National City Bank of New York, ("Citibank") Shanghai, China.

ON BEHALF OF THE COMMITTEE

W. P. MILLS
Acting Chairman.

Nanking, China
August 26, 1938.

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