STANLARD OF LIVING OF SHANGHAI LABORERS

上海市工人生活程度

上海市政府社會局
BUREAU OF SOCIAL AFFAIRS
THE CITY GOVERNMENT OF GREATER SHANGHAI
民國二十三年
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序

本書出版，愆期甚久。一二八之變，對於工作進行，尤受阻折。事平之後，又急于着手罷工糾紛等專刊的編製，人手裁減，應付爲難，一再擱置，遂迄於今。近二三年來，物價的升降，雇傭的狀況，在在都顯示急遽的變化，其影響於工人生活，當亦甚切。本書所引證的事實，現在看來，容或不無變動。可是，倘以本局逐月發表的工人生活費指數和零售物價表，互爲參證，得其變易之序，則本書當仍不失爲一準確而詳盡的研究。上海工人生活的亟應改善，無待贅言，可是有幾點不容恝置的，不得不在這裏重申一下：工人家庭，平均說來，年年虧損，故不惜重利舉債，備受剝削壓制之苦。近年以還，工商凋敝，百業衰微，工人生活的艱難，自必更深一層，入不敷出，捉襟見肘，結果不得不出於舉債彌補之一途，終且備受荼毒，陷於不拔之境，此不可不爲深思者一。工人住屋，湫隘擁擠，有礙衞生，而屋租却又甚高。近雖物價低落，而房租迄未下降，將使工人階級無以負此重任，而愈趨於擁擠湫隘之境，此不可不爲深思者又一。本市工人生活程度的調查，前任局長潘公展氏樹其基，復得現任局長吳醒亞氏之努力，幸底於成。又承天津南開大學經濟學院及上海國定稅則委員會，以其過去的經歷，資爲借鑑，深爲感謝。而工人家庭以及零售商號，熱忱協助，供給材料，尤不可沒。參與調查記賬者，王仲嗣余福壽余素蓮姜瑞賢楊子江董政張邦延張葆鈞戴鴻仁朱臨貴周元龍陳浩治陳祖蔭楊仁喜趙和生黃昌焴尙立敏張仲商陸根大錢愛荃；審查者，張公穆沈志典；計算者，朱保錫王善寶鄒君揚王佐芳朱家禧沈學新楊兆謙周詠白吳頌明吳光漢；編製初稿者，吳知；迻譯英文者，費昌華；校對文字者，丁同力，周世述；覆核數字者，陳善林諸君。又本編食物的營養素和發熱量一章，承嚴文典君譯成英文，尤爲感謝，併誌於此。

民國二十三年九月

蔡正雅

FOREWORD

The present report is behind the schedule of its publication. The Shanghai War in January 1932 had upset our system of work, and during the subsequent years we were engaged with our reduced staff in the preparation of several studies on strikes and lockouts, on industrial disputes, and on other subjects. It is indeed regretful that this piece of work has to wait for so long a period ere it is finally pressented to the public in published form. The period that elapsed has been one of vivid changes in price level, in conditions of employment, and perhaps in every aspect that bears significant relationship with the living standard of laborers. What is treated in the present study would therefore appear in certain respects not quite in keeping with current situations. But, while reference is made to our monthly issue of index numbers of cost of living and of retail prices, with allowance for all the fluctuations, this study still remains an accurate and interesting analysis of the ways and status under which laborers in Shanghai have been and are living.

It is hardly necessary to emphasize here upon the dark side of the living conditions of laborers in this city. But there are certain points that demand even more earnest attention now than ever. The average working families have been facing a deficit when balance being taken of their income and expenditure, and most of them are victims of ruthless money-lenders. During the current years with business depression at its full sway and with business failure occurring frequently, the working class is the more so in shortage of means and is anxious to work out a solution to tide over their difficulties, if they can. Should we suffer to see them running into the traps set by the merciless money-lenders and burying themselves over head and ears in debts? Housing condition in this city is both insanitary and overcrowding, and house rent has been pretty highly appraised. With the general price level at a downward trend, house rent is apparently not in keeping with the decline. The only consequence that could follow would be more overcrowding and more unhealthy living quarters for the working class. A solution to the housing problem, therefore, awaits our primary attention.

The investigation started when Mr. Y. Y. Phen was Commissioner of the Bureau and the work continued without interruption under the present Commissioner, Mr. S. Y. Wu. In the course of our study, we have availed ourselves of the experience of the Nankai Institute of Economics, Nankai University, Tientsen, and the National Tariff Commission, Shanghai. Our obligation to all the families and retail stores which collaborated with us to make the investigation possible is gratefully acknowledged. Among the members of our staff who took part in the collection of material and in the compilation of data, mention must be made of Messrs. C. S. Wong, F. S. Yu, T. K. Yang, C. Tong, P. Y. Chang, P. C. Chang, H. J. Tai, L. K. Chu, Y. L. Chow, H. S. Chen, T. Y. Chen, J. S. Yang, H. S. Chao, C. Y. Wong, L. M. Shang, C. S. Chang, K. D. Loh, A. C. Chien, Misses S. L. Yu and S. Y. Chiang, who took part in keeping daily record of the budgets; Messrs. K. M. Chang and T. H. Shen, who inspected over the keeping of accounts; and Messrs. P. Y. Chu, S. P. Wong, C. Y. Chow, Y. S. Shen, S. C. Yang, Y. P. Chow, S. M. Wu, Misses K. H. Wu, T. F. Wong and C. H. Chu, who took up the work of calculation. The preparation of the volume is made possible by the painstaking effort of the following among our colleagues: Mr. William C. Wood, who prepared the original manuscript; Mr. C. H. Fei, who rendered the English text; Messrs. D. L. Ting and S. Z. Chow, who were responsible for the proof-reading, and Mr. Z. L. Chen for the checking of figures. Thanks are due to Mr. W. H. Yen, who helped us out with the English version of the Chapter on Nutrition and Calorific Value of Food.

Shanghai, September 1934.

T. Y. Tsha.

上海市工人生活程度

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引言　研究工人生活狀況的方法，近幾十年來纔見發達。最初用科學方法研究工人生活狀況而著名的，當推法人羅伯萊(Fréderic Le Play，1806—1882)。羅氏曾盡其畢身之力，詳細地調查研究歐洲的農礦工廠機械印刷紡織木匠鐵匠等工人。研究的方法，係就每種工人選擇若干家庭，和他們同居八天到一個月不等，去觀察他們家庭經濟和生活的狀況，最後著歐洲之勞動者一書。繼羅氏之後，有英人蒲士 (Charles Booth) 倫敦市民及其生活的著述，蒲氏從 1886 年起，開始調查，經十幾年之久，始行蔵事。該市東部是按戶調查的，其餘則用揀樣法和估計法。約十年後，英人龍曲黎 (B. S. Rowntree) 作約克市(York)的調查，著貧窮都市生活之研究一書。龍氏調查以研究個人最低限度生活消費量爲原則，調查項目，以食物爲主，衣服住屋等次之，娛樂保險疾病雜費等都沒有列入。在這個時期，生活狀況的調查，還在萌芽時代，羅伯萊蒲士龍曲黎等的著作，不過是私人研究而有重要貢獻的。此後公私機關，紛起研究，調查範圍，日益廣大，編製方法，也日益精密，例如美國在 1890—1891 年，英國在 1904 年，法國在 1905 年，德國在 1907 年，紐西蘭在 1910 年，荷蘭在 1911 年，奧國挪威在 1912 年，就已有生活費或生活程度的調查。較遲的如日本在 1919 年，意國在 1920 年，印度在 1921 年，愛爾蘭俄國在 1922 年，也舉辦了生活程度和生活費的調查。註一 至於我國各地生活費的調查，爲時更晚，比較著名的有 1926—1927 年北平社會調查所的北平工人生活費調查，1927 年該所又有北平郊外鄉村家庭調查和塘沽工廠工人的調查，1927—1928 年天津南開大學有天津工人生活費調查，和上海調查貨價局的上海紗廠工人生活費調查。1929 年四月至 1930 年三月，上海市社會局又辦了一個一般工人的生活調查。以上國內外各種調查，大多採用「家庭生計調查法」(method of family budget enquiries)，簡稱家計調查法。家庭生計調查的目的有二：(1) 求平均每家消費物品的量和值，去做編製生活費指數時揀樣和加權的張本；(2) 分析收支情形和研究生活程度。假定僅爲編製生活費指數之用，

註一　Method of Conducting Family Budget Enquiries, published by International Labour Office, Geneva, 1926, Appendix I.

記賬的時期，不妨短些，每季記賬一個月，也可見到季節上的變化；假定爲研究生活程度而調查的，那末最好記賬的時期長些，一年是一個很適當的時期。本編所用的材料，是根據一年來所記的賬簿而編製的。

怎樣選擇記賬家庭 選擇記賬家庭的標準，應得注重所選的家庭，是否可以代表上海市一般工人階級的狀況。但是怎樣去選那些富有代表性的家庭呢？原來無論調查那一項事物，決不能詳盡無遺的。揀樣調查 (sampling investigation)的意思，就是在全體事物中，採用了若干樣本，做全部的一個縮影——包含着全體中各個要素，並能充分地表現出全體份子的結構和現象。普通應用的揀樣法，有代表揀樣(representative sampling)和機會揀樣(random sampling) 等方法。就本市情形而言，如果採用機會揀樣法，所取的家庭，未必卽願意長期記賬，因此依據現有的參考資料，去決定揀樣的標準。民國十七年秋天，上海市公安局舉辦了一次華界戶口清查，居民凡三十萬戶，一百五十萬口，平均每戶人口數爲 4·98。註一 十七年五月，據社會局工廠調查的結果，本市四十七業工廠人數凡 237,574 人，其中男工佔百分之 33·9，女工佔 58·7，童工佔 7·4。註二 女工人數多於男工，這是因爲紡織工業，女工有 124,752 人之多，佔女工總數百分之 89，佔三種工人總數的百分之 52。如果剔除規模狹小的十七業工廠，則所查三十個工業的工廠工人，平均每月實際收入男工爲 $20·65，女工 $13·92，童工 $9·30；各業主要工人平均每月收入最多的是印刷業男工，計 $44·75，最少的是棉紡業女工，計 $13·58。至於廠工業務的分配，以紡織業工人爲最多，佔全體百分之 76·8，其次爲食物工業的工人，佔 6·7，再次爲機器工業化學工業和水電印刷業的工人，均在百分之 5 以上。不過上海工人，除工廠工人之外，還有許多非工廠工人，如交通工人服務工人等等，他們的人數，雖難稽考，但調查家庭的時候，仍不宜疎忽了，所以記賬的家庭，有一部分是這類工人的家庭。

除了上海一般工人的戶口職業和收入等情形之外，對於工人居住的區域，我們也應該明瞭。假定以南京路爲中心，那末可以把它劃分爲滬東，滬南，滬西，滬北和浦東五區：黃浦江以北北

註一 據民國十七年估計，上海全市人口約二百七十萬人，不過當時公共租界和法租界的人口數，還是民國十五年的統計。在十九年秋，兩租界又先後舉行了一次戶口清查，合計全市居民凡 3,156,141 口，詳細分析，見工商訪問局英文工商經濟週刊十八卷三號。

註二 這個上海工廠工人數是社會局的一個初步調查的結果，在十七年五月開始舉行，計查工廠 1,504 家，見上海特別市工資指數之試編一書，書內人數爲 237,522 人，因爲計算的時候，遺漏了 52 人，但是這個調查並不詳盡。據十八年的覆查和估計，上海工廠凡 2,326 家，工人 285,700 人，詳見上海特別市工資和工作時間一書，民國十八年上海商務印書館出版。

表一　上海市各業工廠工人數及平均每月實際收入數

民國十七年七月至十二月

工業		工人數					每人每月實際收入數		
		男	女	童	總數	百分數	男 $	女 $	童 $
紡織工業									
1. 繅絲			40,151	9,785	49,916			15.11	9.15
2. 棉紡		25,671	72,766	2,197	100,574	76.8	15.16	13.58	8.58
3. 絲織		4,043	2,479	264	6,786		25.45	10.77	10.58
4. 棉織		4,484	5,173	668	10,325		21.24	11.60	15.75
5. 針織		1,469	4,018	143	5,630		17.55	14.84	
6. 毛織		393	245	101	739		15.40	8.36	
化學工業									
7. 造紙		1,193	758	33	1,984	5.3	21.14	8.91	10.15
8. 燭皂		658	220	13	891		17.72	9.46	15.57
9. 火柴		973	1,498	319	2,790		20.05	5.25	9.18
10. 油漆		99	4	4	107		16.59		9.00
11. 製革		571	3	5	579		17.40	12.89	9.41
12. 玻璃		614	168	362	1,944		16.18		9.05
13. 搪瓷		729	45	61	835		16.21	6.36	
14. 化妝		275	310	38	623		18.37	12.16	10.50
15. 漂染		2,656	390	177	3,223		20.44		
機器建築									
16. 機器		3,943		946	4,889	6.0	28.94		
17. 電機		986	477	99	1,563		23.15	18.47	11.71
18. 翻砂		661		181	842		25.45		
19. 造船		5,625		27	5,652		33.32		11.28
20. 水泥磚瓦		711	20	21	752		15.89		
21. 鋸木		536			536		19.45		
食物烟草									
22. 麵粉		2,011			2,011	6.7	17.10		
23. 榨油		1,658			1,658		15.84		
24. 製蛋		78	218		296		20.43	13.72	
25. 調味		1,973	489	64	1,626		24.40	8.27	
26. 冷飲食品		209			209		19.11		
27. 烟草		2,008	6,825	599	9,432		21.31	13.88	6.15
水電印刷									
28. 自來水		4,097			4,097	5.2	26.36		
29. 電氣									
30. 印刷		6,128	548	1,033	7,709		44.75	29.06	
總計或平均		72,962	136,665	17,091	226,718	100.0	$30.65	$13.92	$ 9.30

四川路以東是滬東區，北四川路以西蘇州河以北是滬北區，蘇州路以南戈登路以西是滬西區，黃浦江以西公館馬路以南是滬南區，黃浦江以東是浦東區。據調查所得，滬西區工人最多，大多是棉紡業工人，其次爲滬東區，大多是棉紡繅絲和電氣業工人，滬南區最多的是機器和棉織業工人，滬北區最多的是繅絲和印刷業工人，浦東區最多的是烟草火柴等業工人。選擇記賬家庭的時候區域的分配也要注意，這 305 家記賬家庭中，在滬東的佔百分之 21.0，滬西佔 42.3，滬南佔 18.0，滬北佔 5.9，浦東佔 12.8，最多爲滬西區，其次爲滬東區。

在選擇記賬家庭之前，爲什麼要把上海市民的戶口數，工人的業務，工資和區域等等作一番普遍的考察呢？這是因爲人口收入業務等等，都是影響市民生活習慣和消費情形的要素，如果要選擇若干富有代表性的工人家庭，事前必須有一個大體觀察，根據一般狀況來確定適當的抽樣標準，所以我們抽樣的時候，除顧到區域業務等適當的分配之外，更規定以三口至七口之

家爲一個記賬家庭的家屬人口數標準，其中最好是夫婦二人，未成年的子女二三人；平日全家工資收入每月在二十元至六十元之間，方爲合格。標準既定，十七年十月，隨即派調查員分赴各區選擇和接洽適量的記賬家庭，接洽的家數凡五百家，記賬之後或因不合格剔除，或因記賬不全未曾採用，到調查結束的時候，實得記滿十二個月的家庭凡三百零五家。

怎樣去搜集資料　假定調查的目的，只爲求到應當選入的物品和牠們的權數（weights），去編製生活費指數，那末只消把家庭消費品的數量和價值記下來；假定目的在於分析收支和研究生活狀況，那末不僅須將一家消費品的數量和價值一一記下，並應將各種收支項目詳爲記載，例如工資禮物借款典質等等收入，和喜慶交際修理資助親友回籍費用等等支出，都要記下來，以便結賬的時候可以對照收支的狀況。有時一個項目，也可以包括不少的賬目，例如「婚嫁」記簡單些，只寫一筆總賬叫「婚嫁費」就完了，如果詳細地去記載，那末購辦衣被傢具酒席和一應雜費，都須一一記入，但是在一般人只要知道因婚嫁用去了多少錢，所以只記一筆總賬就行了。不過爲研究的興趣，有時也詳細地把細賬錄出來，以明究竟。

至於考核記賬的準確程度，是最不容忽視的。在記賬前和開始記賬的三個月，我們把記賬時發生種種的困難和能影響統計準確的問題，竭全力設法去解決它。在記賬的時候，也許甲家因爲記錯了，以少報多，但是因爲記賬的家數很多，記賬的時期又很長，也許在乙家把同樣的物品不在意地以多報少了，結果常可以扯平。因此工人報告偶或錯誤——在事實上固所難免——然而就大體說起來，却無關乎一般的準確。其中最感困難和最應注意的，却是工人的隱蔽事實，不願意把眞相赤裸裸地說出來——尤其是關於賭博典質等項——也有起初願意詳盡報告歷久而厭倦的，但是審核分析的時候，要也不難發現出來。在記賬方面，記賬人員雖經嚴格的考試和審愼的選擇，但也有不按日赴各家記賬的，有記而不詳的。在十八年一月開始記賬的時候，計調查五百個工人家庭，因爲記賬員尚不能引起工人家庭的好感和記賬員本身尚缺充分的訓練，不僅記賬的項目常有遺漏，不確實的地方也不一而足，因此一方面切實訓練調查人員，一方面再和各個被選家庭鄭重地接洽能否繼續記賬，同時淘汰不合用的家庭，另選補充，重行籌劃。從四月起工作方纔上了軌道，四月以前的賬簿，一概未經採用。在正式記賬的時期中——十八年四月至十九年三月——因全家回籍和其他特殊原因而不能繼續記賬的，亦不下四十餘家。

自然記賬的準確與否，完全視記賬人員，能否切實從事。本局記賬人員所記的家庭，在可能範圍以內，不使一日中斷，每週賬目，須繳局審查，記賬方法，須照規定辦理，以期一致。如有疑問，得隨時提出，不易解決者，集會討論，決定辦法。記賬人員之外，另選審查員二人，其職務

爲考核記賬員勤惰和審查記賬情形。審查的方法，並不一定，有時僅到工人家庭查閱記賬人簽到簿，以明是否按時前往調查。有時審查人員逕至記帳家庭，另錄帳目，攜局與記帳員所抄帳目核對，所用方法，隨時變換，其目的無非使記賬人員不生取巧之心，遇有遺漏或錯誤之處，也不難隨時糾正。有時錯誤的賬目，非到一月結帳後，不能明白，所以一月帳目記畢之後，隨即結算，遇有疑點疏漏或錯誤之處，立即復查。經過了幾度的審核，收支無誤，方纔可以應用。至於引起工人記帳的興趣，亦極重要，在記帳期內，局方每月購備合用的物品，分送各家，以資聯絡，審查或記帳人員常把結出的上月收支帳目報告他們，遇到他們有精神上或經濟上的苦痛，表示很大的同情去安慰他們，或則指示他們到本局貧民借本處借錢應急，遇有疾病，介紹他們到市立勞工醫院免費就治。原來統計工作，最大的困難，在於調查，尤其在工人智識尚未大開的時期，耐心的解釋，懇切的指導，去掃除他們的疑懼，堅固他們的信仰，是一番必不可少的教育(educative)工作。調查問題倘能有適當的解決，其餘的問題，便不難迎刃而解了。

二　工人家庭的人口年齡性別和職業

人口的分析　此次所查的 305 個記帳家庭，合計 1,410 人，內男子 707 人，女子 703 人。註一 若依照工人家庭每年實際收入數（借款質當收會款等除外）和每家人口數（寄膳人除外）分組，平均每家人口數如下表：

表二　按收入及人口分組平均每家人口數*

收入	家數	按人口分組之家數									平均每家家屬人口數	平均每家寄膳人口數	平均每家人口數連寄膳者
		2人	3人	4人	5人	6人	7人	8人	9人	10人			
$200—299.99	62	3	20	21	13	5					3.95	.18	4.13
300—399.99	95	6	24	30	20	13	2				4.17	.36	4.53
400—499.99	80	3	11	20	16	19	10	1			4.89	.56	5.45
500—599.99	31		2	8	12	4	2	2	1		5.19	.94	6.13
600—699.99	25		2	5	4	4	4	5		1	5.92	.56	6.48
700 及以上	12		1	2	2	4	1	1	1		5.75	1.50	7.25
總計或平均	305	12	60	86	67	49	19	9	2	1	4.62	.47	5.09
百分數	100.00	3.93	19.67	28.20	21.97	16.06	6.23	2.95	.66	.33			

*記賬期內死亡出生的人口均計入。

表中平均每家人口數爲 4.62 人，若把寄膳人數計入，那末平均每家有 5.09 人，和十七年上海特別市公安局戶口調查的結果——平均每戶 4.98 人——頗能相符。註二 家數最多的是每家四口的一組，計 86 家，佔家庭總數百分之 28.20，其次爲五口之家，計 67 家，佔百分之 21.97，又次三口之家，60 家，佔 19.67，復次六口之家，49 家，佔 16.06，故自三口至六口的家庭，凡 262 家，佔家庭總數百分之 85.90。若照收入的多少分組，那末每組平均每家人口數，大概和收入的多少成正比例，就是收入多的家庭，人口數也遞增，不過表內有一個例外，就是收入在 $700 及以上的一組，其平均每家家屬人口數，比前一組略少，但若把寄膳人口也算在內，那末人口數仍舊比前一組爲多。

家庭人口的親屬關係　表三中的家屬人口數，係在家庭中有經濟扶養關係的同居親屬，如夫妻子女和父母兄弟姊妹等等，但是已出嫁的姊妹或女兒和已析產的兄弟，在經濟上沒有互相扶養的關係，就不能計入了。

工人家庭的小家庭化　我國家庭制度，夫妻子女而外，往往父母弟妹等親屬同居着，份子很複雜。不過上海工人家庭，已傾向於近代小家庭化，夫妻和他們的子女，佔百分之 81.42，父

註一　見表六。

註二　見第一章。

表三　按夫的親屬關係記賬家庭人口的分析

親屬關係	人數	百分數	親屬關係	人數	百分數
夫	305	21.63	孫	8	.57
妻	299	21.21	孫女	5	.35
子	305	21.63	嫂	2	.14
女	230	16.35	堂兄	1	.07
父	28	1.99	甥	2	.14
母	85	6.03	甥女	3	.21
兄	5	.35	姪	6	.43
弟	41	2.91	姪女	3	.21
姊	2	.14	小姨	1	.07
妹	24	1.70	弟媳	5	.35
祖父	1	.07	婿	2	.14
祖母	2	.14	岳父	1	.07
叔父	2	.14	岳母	2	.14
叔母	1	.07	總計	1,410	100.00
媳	30	2.13			

母兄弟姊妹僅佔百分之 13.12，其餘各人口，共佔百分之 5.46 而已。大概說來，舊式的大家庭制度，雖然尚盛行於農村社會，但是在工業化的都市——尤其是上海——人烟稠密，生活程度要比農村高得很多，因此扶養寄生人口的能力，大大減低。在大家庭制度裏同居的父母弟妹，也只能留在鄉村間居住。至於在上海的大率是年壯力强的男女，甚或未成年的子女，也要幫助父母工作，賺些微的工資，補貼家用。又如表三中媳孫姪弟媳等人，大都是大家庭制度裏的同居者；甥姨岳父母等，或爲常年寄住或爲依賴性質的人口，享受家庭中各種消費，所以也歸入家屬人口中了。又照表三所示，此次記錄的家庭，大率爲夫 1，妻 1，子 1，女 0.8，其他 0.82，共計 4.62 人。

寄膳人口　家屬人口以外，寄膳的人，大抵是單身的工人，因爲單獨舉炊，頗多不便，不如每月貼費若干，寄膳親友或同鄉家中的簡便。在記帳的家庭中，有寄膳人口的家庭凡 75 家，共有寄膳者 140 人，內有 8 人連寄宿，每家寄膳人數自一人至八人不等，寄膳的時期從一個月至一年不等，詳見表四。至於把寄膳人分開研究的緣故，是因爲在研究「每等成年」食物消費吸

表四　寄膳人口的分析

每家寄膳人口數	家數	按寄膳月數分組之人口數 1月	2月	3月	4月	5月	6月	7月	8月	9月	10月	11月	12月	總計	百分數
1	31	8	7	2	1	3	1	2		2	1	1	3	31	22.1
2	33	24	12	11	5	5	3		1		2	2	1	66	47.1
3	9	3	2	3	5			1					4	18	12.9
4	3	1		4			1	1			2		3	12	8.6
5	1	1	1	1	1								1	5	3.6
6															
7															
8	1					1		1	6					8	5.7
總計	75	37	22	21	12	9	5	5	7	2	5	3	12	140	100.0
百分數		26.4	15.7	15.0	8.6	6.4	3.6	3.6	5.0	1.4	3.6	2.1	8.6	100.0	

收滋養成份和燃料消費的時候，寄膳人應加入研究，其餘如衣着房租雜項等類，那就不必了。

「家屬」和「家庭」這兩個名稱的意義，普通講起來，似乎沒有什麼分別，但是爲研究上的便利，不得不稍加區別。「家屬」(family) 的意義，只包括有血統關係經濟上共同生活和在家庭中享受一切消費的人口，這種人口，除了構成小家庭的基本份子如夫妻子女而外，有時同居着的親屬如父母祖父母兄弟姊妹姪女岳父母等等，亦在其內。這種基本份子以外的親屬，或係依賴性質，或係長期作客，不過如果在記帳期中，同居在半年以上的，卽認爲家屬份子，不再分出。「家庭」(household) 的意義，就是基本份子和親屬寄居寄膳等人口的集團，這種寄膳宿的人口，大都納相當的費用，他們的進款，不入公用，所享受的消費，也不過食物和燃料兩項，其他如衣着房租雜項等消費，關係是很少或竟完全沒有的。

計算人口的共同單位——等男成年　上述每家人口數，都用一個人爲單位，不問其年齡大小和男女性別，分析的時候，尙嫌籠統，因爲一個人的消費數量和他的年齡性別很有關係。大概說來，成年的消費數量比幼年爲大，男女兩性，亦有差別。譬如甲乙兩個家庭，同是五口之家，甲家有成年四人未成年一人，乙家有成年二人未成年三人，甲家的消費數量定比乙家大，所以比較人口的多少而不講他們消費的需要，尙不能明瞭眞相。因此學者們就研究計算人口的一個共同單位，以便比較的時候，採用一個共同的標準。這個標準，大抵依據消費數量，把一個成年男子做一個單位，然後求未成年男女在各年齡消費數量的多少，再求其等於一個成年男子的百分之幾。依此把未成年男女在各年齡等於一個成年男子的成數列爲一表，計算「等成年男子」(equivalent male adult)數的時候，把未成年人口，卽照此表折合。這種研究在各國已很發達，但是各個學者各就其本國人民的情形而研究，所以結果殊不一致，單說各家對於一個「成年男子」年齡的規定，已頗有上下，註一 例如美國愛脫華教授 (Professor Atwater)，把實足十七歲的男子，作爲一個成年男子，勒斯克教授 (Professor Lusk) 却定在十四歲，荷京阿姆斯達(Amsterdam) 家計調查 (1917 年三月) 和美國的家計調查(1918—1919年)，又定在十五歲，以上都是依據人民食物消費需要而訂定的。德國統計局定在十九歲至二十歲以下，澳洲聯邦清查統計局(Commonwealth Bureau of Census and Statistics)定在十七歲，這兩個計算表係依據人民食物和其他消費需要而訂定的。此外尙有德國恩格兒博士 (Dr. Ernst Engel) 的計算法，較任何計算表爲早。他把一個初生嬰兒作爲一個比較的單位，男子至二十

註一　關於各國學者將家庭人口折合爲若干成年男子的計算表，參閱 Method of Conducting Family Budget Enquiries, 1926, pp. 48—54。

五歲女子至二十歲方達最高消費量，茲不備論。我國還沒有訂過這種計算表，所以暫時只能採用國外的規定，而以愛脫華氏的計算表 (Atwater's scale) 較爲通用。該表係愛脫華與吳德 (Mr. Wood) 兩氏在 1895—1896 年間，在紐約地方根據食物的研究而製定，並經修正的。1899—1901 年龍曲黎分析約克市人民食物需要時曾經引用，其後 1919 年至 1920 年日本大坂市勞工研究局 (Osaka Municipal Bureau of Labour Research) 家計調查亦變通引用。註一 愛氏計算表把實足十七歲及以上的男子爲一個成年男子，註二 同年的女子，卽作一個成年男子的百分之 80，表如下：

	男子	女子
2 歲 以 下	30	30
2 歲至 6 歲以下	40	40
6 歲至 10 歲以下	50	50
10 歲至 12 歲以下	60	60
12 歲至 13 歲以下	70	60
13 歲至 15 歲以下	80	70
15 歲至 17 歲以下	90	80
17 歲 及 以 上	100	80

例如有男子二人，其年齡爲三十五歲及十二歲，女子二人，其年齡爲三十歲及八歲，依愛氏計算表折合，則爲三個等成年男子 (100+70+80+50=300)。本局卽依此法計算 305 家個庭的等成年男子數，得表五。

表五 按收入組平均每家等男成年數*

收入	家數	按家屬人口等男成年數分組之家數										平均每家家屬人口等男成年數	平均每家寄膳者等男成年數	平均每家等男成年數連寄膳者
		—	2—	2·5—	3—	3·5—	4—	4·5—	5—	5·5—	6			
		1·99	2·49	2·99	3·49	3·99	4·49	4·99	5·49	5·99	—			
$200—299·99	62	6	15	18	13	9	1					2.81	.04	2.85
300—399·99	95	9	21	22	21	15	3	2	2			2.94	.15	3.09
400—499·99	80	2	12	16	4	20	13	10	3			3.50	.11	3.61
500—599·99	31		1	8	4	9		4	4	1		3.75	.27	4.02
600—699·99	25	2	2	3	2	4	2	1	5	1	3	4.10	.13	4.23
700 及以上	12			3		2	4		2		1	3.85	.53	4.38
總計或平均	305	19	51	70	44	59	23	17	16	2	4	3.28	.14	3.42
百分數	100.0	6.2	16.7	23.0	14.4	19.3	7.5	5.6	5.3	.7	1.3			

*凡寄膳人口，均依寄膳時期的長短計算等男成年數，記賬期內死亡及出生人口，也依照實際生存時期折算。

表內平均每家家屬人口等成年男子數爲 3.28 人。合寄膳人口在內，那末平均每家有 3.42 人。若依等成年數的多少分組，則以自 2·5—2·99 等成年人數的家庭爲最多，共 70 家，佔百分

註一 同上書。

註二 同上書。

之 23·0，其次自 3·5—3·99 等成年人數的家庭 59 家，佔百分之 19·3。就全體而言，等成年自 2 人至 4 人的家庭爲最多，共 224 家，佔百分之 73·4。如依收入分組，則每組中平均每家等成年人口數，大概和收入的多少成正比例，就是收入多，平均每家等成年數也依着遞加。平均每家家屬人口等成年男子數最少的是收入自 $200—299·99 的家庭，平均每家 2·81 等成年男子，最多的是自 $600—699·99 的家庭，平均每家 4·10 等成年男子。若合寄膳人口在內，那末最少的仍爲 $200—299·99 的家庭，平均每家 2·85 等成年男子，最多的却是收入在 $700 及以上的家庭，平均每家爲 4·38 等成年男子。

上海工人家庭人口數與他處的比較 把上海工人家庭的人口數和他處比較一下，是很有意義的。1922年北平華洋義賑會在河北山東江蘇浙江四省調查了 240 個農村，凡 7,097 家，平均每家 5·35 人。[註一] 同年南京金陵大學農科在安徽蕪湖左近調查了農戶 102 家，平均每家 5·4 人。[註二] 又在河北鹽山縣調查農戶 150 家，平均每家 5·35人。[註三] 1923 年北平清華學校在近郊成府村調查 84 家，平均每家 4·9 人。[註四] 1927 年北平燕京大學調查近郊掛甲屯村 100 家，平均每家 4·06 人；[註五] 又 1930 年春上海市政府因爲要圈定滬東北郊殷行引翔江灣一帶爲市中心區域，由本局調查該地居民之生活狀況，計查八村，凡 106 家，平均每家 5·3 人。[註六] 以上都是農村家庭，並且都是用問答表調查的。至於都市工人家庭生活的調查，北平社會調查部在 1926 年十月至 1927 年三月用記帳法調查北平工人家庭 48 家，大部分是人力車夫，平均每家 4·58 人，或等成年男子 3·38 人，依愛脫華氏計算表計算。[註七] 該部又在 1926 年調查河北塘沽製精鹽工人家庭 61 家，平均每家 3·72 人，或等成年男子2·74人；[註八] 天津南開

註一 Taylor, J. B., "The Study of Chinese Rural Ecomony", China International Famine Relief Commission, Publication Series B. No. 10, 1924, p. 14.

註二 Buck, J. L., "An Economic and Social Survey of 102 Farms near Wuhu, Anhwei, China", University of Nanking, Agriculture and Forestry Series, Vol. I, No. 7, 1923, p. 8.

註三 Buck, J. L., "An Economic and Social Survey of 150 Farms, Yenshan County, Chihli Province, China", College of Agriculture and Forestry, University of Nanking, Bulletin No. 13, 1926, p. 62.

註四 陳達：社會調查的嘗試，清華學報第一卷第二期，民國十三年十二月，北京清華學校，第 324 頁。

註五 李景漢：北平郊外鄉鄙家庭，民國十八年五月，北平社會調查部，第 15 頁。

註六 "上海市中心區百零六戶農民生活狀況調查錄"，社會月刊第二卷第十二號，二十年六月，上海市社會局編。

註七 Tao, L. K., Livelihood in Peking, Social Research Department, Peiping, 1928, pp. 42-43.

註八 Sung-ho Lin, Factory Workers in Tangku, Social Research Department, China Foundation for the Promotion of Education and Culture, Peiping, 1928, p. 85.

大學社會經濟研究委員會於 1927 年九月至 1928 年六月，用記帳法調查天津工人家庭 132 家，平均每家 4·3 人或等成年男子 3·4 人；註一 上海調查貨價局在 1927 年十一月至 1928 年十月，用記帳法調查滬西紗廠工人 230 家，把各家家屬人口和寄膳人口分開計算，平均每家家屬人口爲 4·62 人，和本局調查結果適相吻合，寄膳人口爲 0·15 人，共計 4·77 人，合等成年 3·77 人，也依愛脫華氏計算表折合，至於平均每家家屬人口合等成年數則未曾計算。註二 我們比較各地調查的結果，可以得到一個很明顯的印象，鄉村家庭的人口數，大概比都市工人家庭的人口數爲高。鄉村的家庭大半在五口以上，只有北平郊外掛甲屯村的家庭平均不過 4·06 人，但是掛甲屯村距離北平很近，村人的生活和城關外廂居民的生活又很相似，村人主要的職業爲各種工匠車夫僕役及機關職員，耕種爲業的是極少數，所以不能作爲純粹的農村家庭。註三 如果說中國的農村家庭人數平均每家在五口以上，都市工人家庭的人口數，大都不到五口，證諸以上各調查的結果，大致不差。

國外家庭人口數 若把我國工人家庭和外國比較一下，也可以見到異同之點。1918 至 1919 年美國勞工統計局調查了全國 92 城市的工人家庭 12,096 家，平均每家 4·9 人，除少數例外，各城市平均每家人口自 4·5 至 5·3 人；註四 1920 年紐約戶口清查平均每家 4·4 人，註五 1921 年五月至 1922 年四月印度孟買市勞工局用記帳法調查 2,473 個工人家庭，平均每家 4·2 人(不同居之家屬除外)，註六 這與我國工人家庭人口數亦頗相近。

年齡和性別的分析 這次調查的 305 個家庭，家屬人口數凡 1,410 人，內男子 707 人，佔百分之 50·14，女子 703 人，佔 49·86，男女人數的百分比，頗稱近似，見表六。表中自初生至 14 歲的男子凡 268 人，較同等年齡的女子(計 218 人)爲多，15—29 歲一組的女子計 241 人，較同組男子(計 179 人)爲多，30—49 歲一組的男子又多於同組的女子，50 歲以上的女

註一 馮華年：民國十六年至十七年天津手藝工人家庭生活調查之分析，經濟統計季刊，第一卷第三期，二十一年九月，天津南開大學經濟學院。

註二 楊西孟：上海工人生活程度的一個研究，民國十九年八月，北平社會調查所，p. 19.

註三 李景漢：同前書，序言。

註四 Cost of Living in the United States, Bulletin No. 357, published by Bureau of Labor Statistics, U. S. Department of Labor, 1924, pp. 1—2, 5—6.

註五 The Cost of Living in New York City, 1926 published by National Industrial Conference Board, Inc., New York, p. 6.

註六 Report on an Enquiry into Working Class Budgets in Bombay, published by Labour Office, Government of Bombay, 1923, pp. 1, 6.

子又多於同組的男子，此亦可見在各年齡階段中男女百分數的升降，並不一致。家主平均年齡爲 35·07 歲，子爲 8·69 歲，其他男子 30·81 歲。妻爲 31·63 歲，較家主小 3·34 歲，女爲 7·9 歲，其他女子 38·79 歲。若把 707 個男子的年歲合計，則平均年齡爲 23·10 歲，703 個女子的平均年齡爲 25·24 歲，男女兩者合計則平均年齡爲 24·17 歲。

分析年齡的階段，大抵以自初生至十四歲的男女爲幼年時代，305 個家庭凡 486 人，佔百分之 34·5，十五歲至四十九歲的男女爲壯年時代，凡 793 人，佔百分之 56·2，五十歲及以上的男女爲老年時代，凡 131 人，佔百分之 9·3。

表六　記賬家庭家屬人口年齡的分配*

年齡	男				女				兩共	百分數	
	家主	子	其他	共計	妻	女	其他	共計			
一 4歲		117	6	123		98	5	103	226	16·03	34·47
5— 9		76	4	80		52	9	61	141	10·00	
10—14		49	16	65		45	9	54	119	8·44	
15—19	4	31	11	46	18	36	28	82	128	9·08	56·24
20—24	36	25	14	75	63	8	16	87	162	11·49	
25—29	48	3	7	58	68		4	72	130	9·22	
30—34	72	2	2	76	41		2	43	119	8·44	
35—39	61	2	2	65	42		3	45	110	7·80	
40—44	28		2	30	34		3	37	67	4·75	
45—49	34		7	41	20		16	36	77	5·46	
50—54	14		10	24	10		18	28	52	3·69	9·29
55—59	4		5	9	2		20	22	31	2·20	
60—64	4		6	10	1		12	13	23	1·63	
65—69			3	3			11	11	14	·99	
70—74			2	2			4	4	6	·43	
75 及以上							5	5	5	·35	
總計	305	305	97	707	299	239	165	703	1,410	100.00	
百分數	21.63	21.63	6.88	50.14	21.21	16.95	11.70	49.86	100.00		

*依我國習慣，小孩生出時即爲一歲，嗣後每過一年即加一歲，但照現行法令，以實足一週歲者爲一歲，故將各人年齡，一律照所報年齡減低一歲計算。

以上係本局記賬工人家庭年齡分配的百分比，若和他處比較，亦頗符合，見表七。表內各地人民自初生至 14 歲，百分數最低的是上海紗廠工人 (26·6)，最高的是北平人力車夫(40·5)，兩地人民在 50 歲及以上的百分數也頗近似，然在 15—49 歲組內，上海紗廠工人百分數爲最高(62·6)北平人力車夫百分數爲最低(48·6)。至於上海一般工人年齡分配的百分數，適介乎我國東部及中部農民，和塘沽製鹽工人的中間，三者平均，自初生至 14 歲組內的人民約佔百分之 35，15—49 歲組約佔 56，50 歲及以上約佔百分之 9。

人口學家爽巴格 (Sundbärg) 曾按照年齡的分配，把世界各地的人口分爲增加不變動和減少三類：15 歲以下者佔百分之 40，50 歲以上佔百分之 10 者列爲增加類；15 歲以下佔百

表七　各地人民年齡分配的百分比

年齡	上海一般工人	上海紗廠工人	我國東部及中部*農民2,640家	塘沽製鹽工人	掛甲屯村民	北平人力車夫
—14 歲	34·5	26.6	34·7	35·2	27·1	40·5
15—49 歲	56·2	62.6	52·7	58.6	53·0	48.6
50 歲及以上	9·3	10.8	12.6	6.2	19·9	10·9
總計	100.0	100.0	100.0	100.0	100.0	100.0

*南京金陵大學卜克教授 (Prof. J. L. Buck) 在 1921—1925 年調查的結果，載 Buck, J. L., "Chinese Farm Economy", p. 336, 1930，其餘各地的調查見前註各書。

分之 33，50 歲以上佔百分之 17 者爲不變動類；15 歲以下佔百分之 20，50 歲以上佔百分之 30 者爲減少類。若依爽氏之說，則上海一般工人的人口（15 歲以下約佔百分之 35，50 歲及以上尙不足百分之 10），具有增加的趨勢。

業務的分析　在抽樣的時候，爲什麼要顧到業務的分配呢？其目的不外乎使市內各主要工業，均有適量的代表家庭。表八載 1,410 人中，有職工人凡 629 人，其中棉紡業人數佔百分之 43·88，棉織業佔 12·56，合繅絲絲織針織等業，紡織工業門共佔百分之 60·26；其次機器及建築工人，佔百分之 9·54；再次食物烟草業工人，佔 7·79；復次化學工業工人，佔 6·35；復次水電印刷業工人，佔 4·45。以上工廠工人共佔百分之 88·39，其餘非工廠工人如碼頭工人人力車夫小販服役等等，共佔百分之 11·61。

表八　有職業人口業務的分析

業務	男子 夫	男子 其他成年	男子 十五歲及以下	男子 共計	女子 妻	女子 其他成年	女子 十五歲及以下	女子 共計	總計	百分數	
繅絲	4	1		5	9	3	2	14	19	3·02	
棉紡	73	35	10	118	74	50	34	158	276	43·88	
絲織	1			1	2			2	3	·48	60.26
棉織	38	7		45	21	12	1	34	79	12·56	
針織					1	1		2	2	·32	
火柴	16	4		20	13		1	14	34	5·40	6·35
化學	2	2		4	1	1		2	6	·95	
機器	42	7		49					49	7·79	9·54
建築	7	4		11					11	1·75	
食物	8	2		10	6	1		7	17	2·70	7·79
烟草	18	6		24	7	1		8	32	5·09	
水電	9	1		10					10	1·59	4·45
印刷	16	1		17	1			1	18	2·86	
碼頭工人	10			10					10	1·59	
人力車夫	7	7		14					14	2·23	
小販	7	3		10					10	1·59	11.61
服役	14	4	1	19	1			1	20	3·18	
其他	5	7	3	15	4			4	19	3·02	
總計	277	91	14	382	140	69	38	247	629	100.00	
百分數	44·04	14·47	2.22	60.73	22.26	10.97	6.04	39.27	100.00		

若再依性別年齡的關係分析，則 629 個有職業人口中，夫 277 人，佔百分之 44·04，其他

成年男子 91人，佔 14·47，未成年男子 14 人，佔 2·22；女子中妻 140 人，佔百分之 22·26，其他成年女子 69 人，佔 10·97，未成年女子 38 人，佔 6·04。男子中以業棉紡棉織機器烟草等業爲多，女子中以業棉紡棉織繅絲火柴等業爲多，尤其在棉紡業中，卽未成年的女子也有 34 人之多。這因棉紡業工人，無須特殊技能，廠中多雇用女工或幼年工工作，取其工資低廉，而又易於指揮。

若依收入分組求每家有職業人口數，得表九，305 家中平均每家有職業人口爲 2·06，也可以說每家每二個人中，有一個人是做工的(每家平均人口數等於 4·62)。若按一年收入的多少分組，那末一家收入的多少大致和有職業人數的多少是成正比，就是收入多的家庭，工作的人數也較多，不過相差很微，最少是 $200—299·99 的收入組，平均每家 1·82 人，最多是 $500—599·99 的收入組，平均每家 2·42 人，相差 0·60 人。

表九　按收入組平均每家有職業人數

收入	家數	平均每家人口	按有職業人口數分組之家數					平均每家有職業人數
			1家	2家	3家	4家	5家	
$200—299·99	62	3·95	19	36	6	1		1·82
300—399·99	95	4·17	24	55	15	1		1·93
400—499·99	80	4·89	19	34	20	7		2·19
500—599·99	31	5·19	8	10	7	4	2	2·42
600—699·99	25	5·92	8	8	4	4	1	2·28
700 及以上	12	5·75	5	4		2	1	2·17
總計或平均	305	4·62	83	147	52	19	4	2·06
百分數	100·00		27·21	48·20	17·05	6·23	1·31	

記賬期內失業人數　末了，在這短短的一年記賬期內，這 629 個有職工人內，失業的竟有 55 人之多，佔有職業人數的百分之 8·74。失業的人尤以夫和妻爲多，共 37 人，約佔百分之 70。

表十　記賬期內失業者的分析

業務	按親屬關係分組之人數					總計
	夫	妻	子	女	其他	
繅絲		1				1
棉紡織	10	8	4	5	2	29
絲棉織		1				1
建築	2	6			2	10
食物			1			1
烟草	2	3				5
電水	1	1				2
人力車夫					1	1
服役					1	1
其他	1					1
	1		1		1	3
總計	17	20	6	5	7	55

三　家庭的收入和支出

收入的分析　在未曾分析工人家庭的收支以前，先得解釋清楚收入和支出的意義。收入(income)是指記賬期內工人家庭收受的金錢或可以金錢估計其價值的服役和物品。此項收入，或爲勞力而得的報酬，或爲投資的利益，或爲出賃房物的租金，或爲親友饋贈的禮物，凡非眞正收入如借款或典質而來的金錢，都不能算正式的收入。同樣，支出(expenditure)是指在記賬期內工人支付的金錢，或可以金錢估計其價值的服役和物品。此項支出，用以購買生活應用的物品，給付房物的租金，借款的利息，服役的報酬，或饋贈親友的禮物，凡非實在的支出如償還借款或典質當本的款子，也不能算正式的支出。凡是眞正的收入和支出，本編稱爲實收入實支出。至於非正式的收入和支出，就稱爲假收入假支出。

305家的收入，約分七類：(1)勞力所得的工資，(2)分租餘屋的房金，(3)從寄膳者賺得的包飯費，(4)親友送來的禮物，(5)親友的資助，(6)做小本經營的盈利和(7)其他——如婚喪喜慶收受的財禮，小孩拾煤屑柴草作燃料或變賣而得的收入，以及放債的利息等一切未列入前類的收入。房金的收入，並非出租自置房產而收得的租金，却是把租來的房屋分租他人而從中賺得的房金。上述房金一項，係根據二房東的報告，把一部份本錢除去後的淨益。在包飯收入之中，一部分是本錢，不過要把本利分開，很不容易，差幸爲數不大，因此也就不分了。

此次調查的305個家庭，平均每家每年收入$416.51，其中百分之87.3是工資的收入，其餘百分之12.7是房金包飯禮物資助營業等等收入，見表十一。我們從這個表上，究竟發現些什麼意義呢？

工資佔收入的大部　第一，上海工人家庭的收入，十之八九是從工資得來的，無論收入的多少(除$700及以上一組外)，工資佔全部收入的百分比，沒有不在85以上的。若依收入的多少分組，則收入越少的家庭，工資佔全部收入的百分比越高，也就是工資以外收入的百分比越低；反過來說，收入越大的家庭，工資百分比越小，也就是工資以外收入的百分比越大。這足見越是貧窮的家庭，越是要靠雙手所獲的工資來度生活，例如$200—299.99一組中，平均每家工資收入佔百分之92.1，$700及以上一組，僅佔百分之78.2。

家主負擔家庭生活費用半數以上　第二，單就工資一項來看，夫——也就是家主——的工資收入最高，平均每人每年爲$222.05，佔總收入百分之53.3，這就是說，二分之一以上的家庭生活費用，要丈夫一個人來負擔。妻的平均工資爲$52.50，佔百分之12.6，子的工資爲

表十一　按收入組平均每家全年收入的數額

收入	家數	平均每家人數	平均每家等成年	平均每家工資 夫	妻	子	女	其他	平均每家工資總數	平均每家工資以外的收入 房金	包飯	禮品	資助	營業	其他	平均每家工資以外的收入總計	平均每家總收入
				$	$	$	$	$	$	$	$	$	$	$	$	$	$
$200—299.99	62	3.95	2.81	160.29	56.67	7.53	11.52	9.26	245.27	1.23	2.66	3.81	3.92	4.82	5.22	21.66	266.33
300—399.99	95	4.17	2.94	191.15	59.92	17.82	26.69	9.88	305.46	6.04	7.08	4.59	3.11	1.74	16.46	39.02	344.48
400—499.99	80	4.89	3.59	213.54	55.61	30.83	42.62	45.70	388.30	9.03	16.12	2.75	3.51	3.67	20.09	55.17	443.47
500—599.99	31	5.19	3.75	269.43	39.93	46.40	43.26	71.06	470.08	10.88	18.55	17.65	10.94	2.45	15.71	76.18	546.26
600—699.99	25	5.92	4.10	365.17	30.99	67.02	25.64	61.72	550.54	21.07	14.54	21.32	5.46	.03	31.72	94.14	644.68
700 及以上	12	5.75	3.85	422.00	28.66	82.80	21.96	49.63	605.05	14.52	37.63	67.46	4.63		43.85	168.09	773.14
總計或平均	305	4.62	3.28	222.05	52.50	28.63	29.17	31.18	363.53	7.99	11.41	9.12	4.43	2.74	17.38	52.98	416.51
							百分	數									
$200—299.99	20.3			60.2	21.3	2.8	4.3	3.5	92.1	.5	.8	1.4	1.5	1.8	1.9	7.9	100.00
300—399.99	31.2			55.5	17.4	5.2	7.7	2.9	88.7	1.7	2.1	1.3	.9	.5	4.8	11.3	100.00
400—499.99	26.2			48.2	12.5	7.0	9.6	10.3	87.9	2.1	3.6	.6	.8	.8	4.5	12.4	100.00
500—599.99	10.2			49.3	7.3	8.5	7.9	13.0	86.0	2.0	3.4	3.2	2.0	.5	2.9	14.0	100.00
600—699.99	8.2			56.6	4.8	10.4	4.0	9.6	85.4	3.3	2.3	3.3	.8		4.9	14.6	100.00
700 及以上	3.9			54.6	3.7	10.7	2.8	6.4	78.2	1.9	4.9	8.7	.6		5.7	21.8	100.00
總計或平均	100.0			53.3	12.6	6.9	7.0	7.5	87.3	1.9	2.7	2.2	1.1	.6	4.2	12.7	100.00

表十二　按收入組平均每家及每等成年全年的支出*

收入	家數	平均每家人數 不連寄膳者	平均每家人數 連寄膳者	平均每家等成年 不連寄膳者	平均每家等成年 連寄膳者	平均支出 食物 每家	食物 每等成年	房 每家	房 每等成年	租 每家	衣 每家	衣 每等成年	燃料 每家	燃料 每等成年	雜項 每家	雜項 每等成年	總計 每家	總計 每等成年
						$	$	$	$	$	$	$	$	$	$	$	$	$
$200—299.99	62	3.95	4.13	2.81	2.85	191.47	67.18	28.16	10.02	20.80	7.40	26.32	9.24	70.45	25.07	337.20	118.91
300—399.99	95	4.17	4.53	2.94	3.09	209.61	67.83	34.23	11.64	24.69	8.40	26.04	8.43	90.60	30.82	385.17	127.12
400—499.99	80	4.89	5.45	3.50	3.61	258.65	71.65	36.50	10.45	34.65	9.90	29.78	8.25	106.47	30.42	466.14	130.67
500—599.99	31	5.19	6.13	3.75	4.02	289.59	72.04	49.29	13.14	47.96	12.79	32.17	8.00	146.93	39.18	565.94	145.15
600—699.99	25	5.92	6.48	4.10	4.23	321.16	75.92	54.83	13.37	59.18	14.43	35.71	8.44	197.42	48.15	668.30	160.31
700 及以上	12	5.75	7.25	3.85	4.38	349.26	79.74	59.43	15.44	83.38	21.66	38.94	8.89	264.78	68.77	795.79	194.50
總計或平均	305	4.62	5.09	3.28	3.42	241.54	70.63	37.83	11.53	34.01	10.37	29.00	8.48	112.00	34.15	454.38	135.16
							百分	數									
$200—299.99	20.3					56.8	56.5	8.3	8.4	6.2	6.2	7.8	7.8	20.9	21.1	100.0	100.0
300—399.99	31.2					54.4	53.4	8.9	9.2	6.4	6.6	6.8	6.6	23.5	24.2	100.0	100.0
400—499.99	26.2					55.5	51.8	7.8	8.0	7.4	7.6	6.4	6.3	22.9	23.3	100.0	100.0
500—599.99	10.2					51.2	49.6	8.7	9.1	8.5	8.8	5.7	5.5	25.9	27.0	100.0	100.0
600—699.99	8.2					48.1	47.4	8.2	8.3	8.9	9.0	5.3	5.3	29.5	30.0	100.0	100.0
700 及以上	3.9					43.9	41.0	7.4	7.9	10.5	11.1	4.9	4.6	33.3	35.4	100.0	100.0
總計或平均	100.0					53.2	52.2	8.3	8.5	7.5	7.7	6.4	6.3	24.6	25.3	100.0	100.0

*計算平均每等成年支出食物和燃料費的時候，用平均每家庭人口(連寄膳者)等成年數除之，其餘則用平均每家家屬人口(不連寄膳者)等成年數除之。

$28.63，佔 6.9，女的工資爲 $29.17，佔 7.0，其他親屬的工資爲 $31.18，佔百分之 7.5。照上面的百分比來看，夫妻二人的工資，佔總收入三分之二，子女及其他親屬的工資，約佔總收入百分之 22。若依收入的多少分組，那末收入越少的家庭，夫和妻的工資的百分比越大，子女等的百分比越小，例如在 $200—299.99 的一組，夫的工資佔總收入百分之 60.2，妻佔百分之 21.3，兩共百分之 81.5，子女等的工資僅佔百分之 10.6。在 $700 及以上的一組，夫和妻的工資僅佔總收入百分之 58.3，子女等的工資却佔總收入百分之 19.9。我們看了這段事實，再參照表九按收入組平均每家有職業人口數，就可以知道收入越少的家庭，越是要靠少數人工作賺錢，不幸一旦這個唯一的掙錢者失業害病或亡故了，那末全家不免有凍餒之虞。反過來說，收入增多，子女和其他親屬工資收入的百分比也跟着高，這固然表示家中能掙錢的人口增多，生活也稍舒適了，但也正足以顯明男子工資的低廉，收入已不足維持全家的生計，不得不使子女——甚或幼童——幫同工作，貼補家用，這在研究童工問題的時候，很值得注意呢！

上海工人家庭收入項目較多　最後，若把上海工人家庭收入的分配和國內其他地方比較，那末上海一般工人工資數收入的百分比，比上海紗廠工人塘沽工人北平人力車夫等都要小。上海紗廠工人工資收入佔總收入的百分比爲最高，計百分之 95.5，工資以外的收入占百分之 4.5；註一 其次塘沽工人的工資百分比爲 94.9；註二 再次北平人力車夫的工資百分比爲 90.5；註三 本局所調查的上海工人的工資僅占總收入百分之 87.3，比上述任何地方爲小。

支出的分析　生活費的支出，大率分爲五類：食物，房租，衣着，燃料和雜項。表十二係按收入組平均每家及每等成年的支出與百分比。305 家平均每家每年支出生活費 $454.38，其中食物費 $241.54，佔百分之 53.2，房租 $37.83，佔 8.3，衣着費 $34.01，佔 7.5，燃料費 $29.00，佔 6.4，雜項支出 $112.00，佔 24.6。每等成年每年平均支出 $135.16，其中食物費 $70.53，佔百分之 52.2，房租 $11.53，佔 8.5，衣着費 $10.37，佔 7.7，燃料費 $8.48，佔 6.3，雜項支出 $34.15，佔 25.3。再簡單些說，就是平均一個家庭每月支出生活費 $37.86，平均一個成年男子每月支出 $11.26，其中四分之三是食衣住燃料等必需的費用，四分之一是交際娛樂教育衞生嗜好等雜用。

食物房租雜項支出與恩氏定律符合　我們再從表十二來研究上海工人的生活程度，看可

註一　楊西孟，同書前，第 23 頁。

註二　Sung-ho Lin，同前書，p. 76。

註三　Tao, L. K.，同前書，p. 53。

以發見些什麼意義呢？第一，德人恩格爾氏(Engel，1821—1896 柏林統計局主任)的幾條生活費的定律，大要是：(1)食物費的百分數隨收入的增高而遞降，(2)房租衣着與燃料的百分數，不隨收入的增減而變動，(3)雜項費的百分數隨收入的增高而遞升。這個恩氏定律，雖沒有完全確定，却值得試驗一下，看它能適合到什麼程度。觀察表內的數字，食物費百分數是隨收入增高而遞降，雜項費百分數隨收入增高而遞升，這證明恩氏定律的(1)和(3)兩條是對的，各國統計的結果，也都是如此；房租的百分數不隨收入增高而變動，衣着費百分數隨收入增高而遞升，燃料費百分數隨收入增高而遞減，這證明房租一項，與恩氏定律的第(2)條所云相合，但是衣着和燃料兩項，就有很顯著的變動，各國統計的結果，也很足以證明恩氏這條定律的不完全確實。

上海工人生活程度與國內各地的比較　第二，低的食物費百分數和高的雜項費百分數，既是可以表示優越的生活程度，那末如果把上海工人的生活費和其他各地的生活費比較一下，又怎樣呢？表十三僅把國內幾個重要的生活費調查，依食物費在支出中所佔百分數的大小排列比較，我們就可以明瞭上海工人的食物費百分數，比任何地方爲小，雜項類百分數比任何地方爲高。至於衣着費百分數最小是天津的 6·1，最大是塘沽的 9·5，燃料費百分數最小是本局所調查的上海工人的 6·4，最大是天津的 12·5，——水在內。房租百分數最小是北平掛甲屯的 4·4，最大是天津的 14·1，本局居第二，爲 8·3。

表十三　上海和國內各地農工生活費分配的比較*

地點	調查機關	調查時期	職業	平均每家一年支出生活費					
				食物	房租	衣着	燃料	雜項	總計
				$	$	$	$	$	$
上海	上海市社會局	1929—1930	大部分工廠工人	241·54	37·83	34·01	29·00	112·00	454·38
塘沽	北平社會調查所	1927	製鹽工人	122·73	15·65	20·95	17·77	43·27	220·37
上海	國定稅則委員會	1927—1928	紗廠工人	218·52	25·08	36·72	29·40	80·40	390·12
中國北部及中東部六省	南京金陵大學農科	1921—1925	農民	136·29	11·32	17·31	25·32	38·08	228·32
天津	南開大學經濟學院	1927—1928	大部分手藝工人	131·51	29·89	12·88	26·40	11·34	212·02
北平掛甲屯	北平燕京大學	1927	近郊鄉民	105·40	7·21	12·62	13·05	25·72	164·00
北平	北平社會調查所	1926—1927	大部分人力車夫	144·50	15·26	13·88	22·96	6·32	202·92
				百分數					
上海	工廠		工人	53·2	8·3	7·5	6·4	24·6	100·0
塘沽	製鹽		工人	55·7	7·1	9·5	8·1	19·6	100·0
上海	紗廠		工人	56·0	6·4	9·4	7·5	20·6	100·0
中國北部及中東部六省	農		民	58·9	5·3	7·3	12·3	16·2	100·0
天津	手藝工		人	62·0	14·1	6·1	12·5	5·3	100·0
北平掛甲屯	近郊鄉		民	64·3	4·4	7·7	7·9	15·7	100·0
北平	人力車		夫	71·2	7·5	6·9	11·3	3·1	100·0

* 本表所列數字，悉照原書轉載。

與國外的比較　第三，再把上海工人生活費的分配和國外比較，那末上海工人究竟又站在什麼地位呢？各國人民的生活程度，因爲幣制物價等等和人民所習慣享受的安適和奢侈的不

同，在實質上有一個高低，統計比較，最感困難。表十四係依照各國人民食物費百分數的大小而排列，把食物費百分數最小的——也可以表示生活程度最優越的——排在第一，依照這種排列方法，則美國工人的生活狀況當然是最好，其食物費百分數只佔 38·2，雜項費佔 26·5 之多，其次爲紐西蘭和日本。上海工人雜項類的百分比雖然較美紐日本略低，但是和英國比較，却高得多（上海 24·6，英國 14·9），不過在這舊風俗舊習慣之下，無謂的靡費實占一個很重要的部分，因此不免節衣縮食去應付不合理的開支，並且國家和工廠方面對於勞工生活上的設備，尚未充分注意，所以如果說上海工人的生活狀況，比較英國來得優越，却不免武斷。總之上海工人生活程度較國內其他都市——只限於國內已有調查的都市——爲高，但是經濟上是很拮据，若和各國比較，武斷地說一句，還是差得很多。

表十四　上海和各國工人家庭按五類生活費百分數的比較*

國別	美國	紐西蘭	日本大坂	德國柏林	英國	中國上海	印度孟買
調查時期	1918—1919	1919	1919—1920	1918	1920	1929—1930	1921—1922
食物	38.2	38.3	47.0	48.0	52.4	53.2	56.8
房租	13.4	13.1	10.0	8.3	6.8	8.3	7.7
衣着	10.6	15.9	11.7	16.7	19.5	7.5	9.6
燃料	5.3	6.1	5.4	5.4	6.4	6.4	7.4
雜項	26.5	26.6	25.9	21.6	14.9	24.6	18.5
總計	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* 關於各國的資料，根據 Shirras, G. F., "Report on an Enquiry into Working Class Budgets in Bombay", pp. 106—119, 1923.

每等成年的平均支出　第四，再看一個等成年男子五類百分數和收入的升降情形是怎樣？這裏有一點先要說明的，每等成年五類的百分數和每家五類的百分數，微有不同，這因爲計算每家五類百分數的時候，各家寄膳人口消費的食物和燃料，無從分出，所以計算每等成年五類百分數之時，食物費和燃料費，用平均每家庭人口（連寄膳者）等成年數除之，其餘三類費用，則用平均每家家屬人口（不連寄膳者）的等成年數除之，此因寄膳者在家庭中只有食物和燃料的消費，而沒有房租衣着和雜項的消費。若以收入的多少分組，那末平均每等成年的生活費隨收入增加而見高，這很可證明人民收入增高，他們的生活狀況自然會跟着改善的。至於食物和雜項兩類隨收入增加的百分數變化，和恩氏定律是一致的。總之，平均每等成年五類百分數隨收入增加而變化，和平均每家五類百分數變化的趨勢，是完全一致的。

工人家庭中的自立者與依賴者　最後，試把平均一等成年全年生活費的支出（$135·16—見表十二）作爲一個成年男子全年必需生活費用的標準，不到一等成年的，按比例遞減，以求

其一年的必需生活費用。再假定凡全年收入超過這個數目的算他是有家庭負擔者，收入適合這個數目的爲能自立者，雖有收入而不足此數的爲半依賴者，完全沒有收入的爲完全依賴者。我們現在根據這個方法去把一家的人口分做以上四類，以明究竟。

	總計		平均每家	
	人數	等成年數	人數	等成年數
有家庭負擔者	424	381.37	1.39	1.25
自立者	10	8.90	.03	.03
半依賴者	194	165.91	.64	.55
完全依賴者	782	442.03	2.56	1.45
總計	1,410	998.21	4.62	3.28

若以「有家庭負擔者」人口數(1.39)除「完全依賴者」人口數(2.56)，得每一「有家庭負擔者」須扶養「完全依賴者」1.84人。若再以「有家庭負擔者」人口數(1.39)除「半依賴者」人口數(.64)，得每一「家庭負擔者」須津貼「半依賴者」.46人。若以等成年數而論，照上法可求得每一「有家庭負擔者」(等成年)須扶養「完全依賴者」1.16等成年(1.45÷1.25=1.16)，津貼「半依賴者」.44等成年。

預算盈虧的分析　本市305個記賬家庭平均每家全年收入$416.51，支出$454.38(見表十一和表十二)，收支相抵，平均每家全年不敷$37.87，詳細分析，見表十五。

表十五　按收入組記賬家庭平均全年盈虧的分析

收入	家數	工資減去生活費支出 盈餘 家數	平均數	虧短 家數	平均數	依工資收入平均虧短數(一)	工資等實收總數減去生活費支出 盈餘 家數	平均數	虧短 家數	平均數	依工資等實收入總數平均虧短數(一)
			$		$	$		$		$	$
$200—299.99	62	5	15.95	57	101.57	− 92.09	11	21.62	51	91.02	− 71.04
300—399.99	95	15	29.24	80	99.49	− 79.17	29	42.65	66	77.29	− 40.67
400—499.99	80	17	39.04	63	109.63	− 78.04	34	55.66	46	80.68	− 22.73
500—599.99	31	10	83.07	21	180.22	− 95.29	15	88.87	16	120.34	− 19.11
600—699.99	25	5	115.60	20	176.45	−118.04	8	145.66	17	103.70	− 23.91
700及以上	12	2	83.69	10	246.03	−191.07	4	68.72	8	68.86	− 23.00
總計或平均	305	54	51.07	251	121.23	− 90.73	101	60.80	204	86.73	− 37.87

依據上表，如果單靠工資來維持家用，那末有盈餘的不過54家，佔百分之17.7，平均每家盈餘$51.07。工資收入不敷支出的有251家之多，佔百分之82.3，平均每家虧短$121.23，305家總計平均每家虧短$90.73。如果把總收入來維持家用，那末收入有盈餘的不過101家，約佔全體三分之一，平均每家盈餘$60.80。入不敷出的有204家之多，約佔三分之二，平均虧短$86.73，305家總計平均每家虧短$37.87。若以收入的多少分組研究，那末一組中入不敷出的家庭的成數和平均每家虧短的銀數，隨收入的增高而減少。這並不是說收入多的

家庭就沒有虧短了，不過這足以證明收入增高可以減少虧短的程度。上表還有可注意的一點，就是單憑工資一項爲開支，那末虧短的家庭成數，雖然隨收入增高而減少，但是平均每家虧短的銀數並不隨收入的增高而減低，這因爲收入愈多的家庭，工資在收入中的成數愈小（參閱表十一）。以上所述，這裏可以簡單地總括幾句，上海工人的家庭生計，如果單靠工資來維持，那末十家之中祇有一兩家能够敷衍過去，其餘的八九家平均一年要虧短一百多元；如果把全部收入來維持，那末祇有三分之一的家庭收支可以相抵而有餘，其餘三分之二，仍舊入不敷出，並且平均每家一年中有虧短八十餘元之多呢！我們不難想像節衣縮食省至無可減省的家庭，只有舉債彌補，飲鴆止渴的一個途徑了。

正式收支以外的銀錢來往　305 個家庭的正式收支相抵，平均每家不敷 $37.87，現在要問他們究竟是怎樣彌補呢？我們若不明瞭這部分的銀錢出入，還不能完全知道工人家庭全部收支的狀況。表十六是按收入組平均每家假收入和假支出的分析，表中各項名稱，先得略爲解釋一下：在假收入方面，有借款當物會款賒欠和收還等名目。借款係指付較輕的利息向親友處借來的款項，或出重利借來的印子錢等等。印子錢的意義，或者不是一般閱者所能明瞭的，放印子錢的人，大都是痞棍和印度巡捕之流，雇人兜攬債戶，盤剝重利，利率大抵在月息十分以上（即借款一元，每月付息一角）。放款自一元至數十元不等，預扣數期利息，摺子中訂明每期利息若干（印人放債寫立借據，惟多不寫明銀數，借者須打指印於借據上，備交涉時可自由填入銀數，法庭上也無法否認之），以後每日每半月或每月歸還一次，由放債者的雇員於摺子上打一印戳，表明該期應付之利息業已收到。本錢沒有還清之前，那末利息是要照付下去，不過逼債極緊，債戶多不敢稍有延宕。至於典質，盡人皆知，大率以衣物等件，向當鋪或質押中押得若干銀錢，當得的銀錢普通只抵原值三分之一。規模較大的當鋪，月息二分，當本逾十元者酌減，十八個月以內不贖取者，當物沒收。質押規模較小，月息二分，當本逾五元或十元者酌減，八個月期滿後不能贖回。會款指收銀錢會的款子，中下階級爲求信用借款上的合作，常兜集了十數人以至數十人不等，合一個銀錢會，會款總額由十餘元至數百元不等，第一個收會錢的人稱首會——往往是需款者——會期普通一月一次，亦有半年或一年一次的，每次集會例由首會召集會友，各會友依會章繳納會錢，彙齊後給與應收會款的會友。銀錢會的名稱不一，以誰人取得會款和計算利息的方法而異，其用意不外乎集合會友的零星款項，信用貸與依章取得會款的人，以應急需，在會友方面，貸出銀錢以求利息。已經得會的人，以後分期把本利攤還會友，如此又可把集合的款項貸與其他的會友，到全體會友輪完爲止。銀錢會的利率比借印子錢爲低，在工

表十六　按收入組平均每家一年中假收入和假支出的分析

收入	家數	平均每家假收入						工資等實收入	入款總數（＝出款總數＋手頭現款）	生活費實支出	平均每家假支出						平均每家手頭現款
		借款	當物	會款	除欠	收還	總計				還借	贖當	付會	還賬	貨出	總計	
		$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$
$200—299.99	62	62.04	16.68	43.97	6.16	.74	129.89	266.33	396.22	337.20	17.40	3.45	34.42	4.69	.17	60.13	−1.11
300—399.99	95	59.65	19.74	45.80	7.55	.48	133.22	344.48	477.70	385.17	22.74	9.26	46.81	8.32	.63	87.76	4.77
400—499.99	85	52.71	18.00	47.78	11.18	1.82	131.49	443.47	574.96	466.14	25.98	9.12	48.47	9.76	.03	93.36	15.46
500—599.99	31	70.44	15.81	33.74	8.29	.97	129.25	546.26	675.51	565.94	41.75	8.06	41.96	4.42	.58	96.77	12.80
600—699.99	25	144.03	18.70	101.47	20.37	2.42	286.99	644.68	931.67	668.30	91.34	11.25	102.21	21.77	.20	226.77	36.60
700及以上	12	76.68	24.23	101.50	26.70	1.00	229.51	773.14	1002.65	795.80	52.27	16.10	84.58	14.59	1.33	168.87	37.98
總計或平均	305	66.98	18.35	51.47	10.10	1.12	148.02	416.51	564.53	454.38	31.22	8.36	50.26	8.91	.37	99.12	11.03
						百		分		數							
$200—299.99	20.3	15.7	4.3	11.1	1.5	.2	32.8	67.2	100.0	85.1	4.4	.9	8.7	1.2		15.2	−.3
300—399.99	31.2	12.5	4.1	9.6	1.6	.1	27.9	72.1	100.0	80.6	4.8	1.9	9.8	1.8	.1	18.4	1.0
400—499.99	26.2	9.2	3.1	8.3	2.0	.3	22.9	77.1	100.0	81.1	4.5	1.6	8.4	1.7		16.2	2.7
500—599.99	10.2	10.4	2.4	5.0	1.2	.1	19.1	80.9	100.0	83.8	6.2	1.2	6.2	.6	.1	14.3	1.9
600—699.99	8.2	15.4	2.0	10.9	2.2	.3	30.8	69.2	100.0	71.7	9.8	1.2	11.0	2.4		24.4	3.9
700及以上	3.9	7.6	2.4	10.1	2.7	.1	22.9	77.1	100.0	79.4	5.2	1.6	8.4	1.5	.1	16.8	3.8
總計或平均	100.0	11.9	3.2	9.1	1.8	.2	26.2	73.8	100.0	80.5	5.5	1.5	8.9	1.6	.1	17.6	1.9

人階級中是很流行的，不過它也有短處，例如有時會友急於用款而無法取得會錢，或因急於需用不惜付很高的利息，這是常有的事。賒欠指購買物品不付現款而暫時記賬，到節期歸還，和借現款的性質，稍有不同。收還指收回從前貸出的款子，其中利息一部分則劃歸實收入利息一項。在假支出方面有還借贖當付會款還賬和貸出等等。還借是借款的相對，贖當和付會款，無庸解釋，不過還借贖當和付會款等其中包含利息的部分，統統分析出來，另外歸入生活費支出裏邊雜項類利息項去了。還賬貸出，也無庸解釋。總之以上假收和假支兩方面的許多名稱，無非是「借」和「還」兩件事情的種種方式罷了，不過其中利息一項，則分出後歸入實收或實支的利息一項去了。

虧短之數藉借貸爲挹注　據表十六，305 家總計平均每家一年假收入爲 $148.02，假支出爲 $99.12，假定記賬前收支平衡，則假收與假支相抵，超過 $48.90，減去平均每家每年虧短 $37.87，平均每家尙餘 $11.03。如果把工資等實收入和借當等假收入相加的入款總數——亦卽生活費支出加手頭現款總數——作爲 100 分，那末 305 家平均每家一年中借款 $66.98，佔百分之 11.9，其次收會款 $51.47，佔 9.1，再次當物 $18.35，佔 3.2，賒欠 $10.10，佔 1.8，收還 $1.12，佔 0.2，假收入統計 $148.02，佔入款總數百分之 26.2，這就是說，一家四分之一强的入款是出重利借來的，只有四分之三弱纔是眞正的收入。再看假支出一方面，305 家平均每家一年中還借 $31.22，佔支出總數百分之 5.5，付會 $50.26，佔百分之 8.9，贖當 $8.36，佔 1 5，還賬 $8.91，佔 1.6，貸出 $0.37，佔 0.1，以上假支出總計 $99.12，佔支出總數百分之 17.6。以平均每家的假收入和假支出各項逐一比較，除收會和付會，賒欠和還賬，收支雙方的數字很相接近外，其餘各借款爲 $66.98，而還借不過 $31.22，還不到借款的二分之一，當物爲 $18.35，而贖當不過 $8.36，也不足當物的二分之一，這意思就是工人們借了款子當了衣物，有一半多的款子是還不出，一半多的衣物是沒有贖出，他們的經濟狀況，自必日趨於破產的途徑！

重利盤剝的罪惡　表十七是 305 家按收入組有假收入假支出的分析，由此可知借款的家庭佔家庭總數百分之 88.2，有當物的家庭佔百分之 78.0，所以放印子錢者和典當質押，幾乎是貧民唯一的金融機關。卽使平日收支足以勉强扯平，遇有不測的風浪，他們唯一的借貸處所就是盤剝重利的放債者和冷酷無情的典當質押，一旦陷入了這種境界，就難自拔了。我們在調查的時候，不知聽到了多少工人的訴說苦痛，下面一段故事是其一例：某工人家庭有母妻子二（未成年）弟一，妻和弟也各有職業，每月工資收入約四十餘元，本來尙可度日，去年以其父去

表十七　按收入組記賬家庭中有假收入和假支出的家數

收入	家數	有假收入的家數				有假支出的家數				
		借	當	會	賒	收還	還欠	贖當	付會	還賬	貸出
$200—299.99	62	57	53	40	25	4	38	32	47	24	2
300—399.99	95	88	78	70	45	8	60	54	81	39	5
400—499.99	80	65	57	57	33	6	38	40	62	27	1
500—599.99	31	27	21	17	15	2	20	14	27	12	1
600—699.99	25	22	18	20	20	3	22	14	24	21	2
700及以上	12	10	11	8	10	2	8	8	10	7	3
總計	305	269	238	212	148	25	186	162	251	130	14
				百分數							
$200—299.99	20.3	91.9	85.5	64.5	40.3	6.5	61.3	51.6	75.8	38.7	3.2
300—399.99	31.2	92.6	82.1	73.7	47.4	8.4	63.2	56.8	85.3	41.1	5.3
400—499.99	26.2	81.3	71.3	71.3	41.3	7.5	47.5	50.0	77.5	33.8	1.3
500—599.99	10.2	87.1	67.7	54.8	48.4	6.5	64.5	45.2	87.1	38.7	3.2
600—699.99	8.2	88.0	72.0	80.0	80.0	12.0	88.0	56.0	96.0	84.0	8.0
700及以上	3.9	83.3	91.7	66.7	83.3	16.7	66.7	66.7	83.3	58.3	25.0
總計或平均	100.0	88.2	78.0	69.5	48.5	8.2	61.0	53.1	82.3	42.6	4.6

世，負下了百餘元的債務，又受了重利的盤剝，一年之後，積到三百餘元，一個月要付的利息有三十多元的，盡一月所入，僅供還債，遑云生活？讀者也許見到上海某報曾載有下面一段的新聞，浦東某工人，借了一個印度巡捕的印子錢，本息積至數百元，無力償還，以印人的要挾，把自己的女孩嫁給印人償債，後以不堪印人蹂躪，訴諸法庭。這種慘痛的經濟壓迫如自殺，賣子女，流爲盜匪，報上幾乎天天可以見到。本局設立以來，限制當押的利率並籌設市公押和貧民借本處，十八年呈准市府撥款一萬元，於同年五月成立南市第一區貧民借本處，以現金低利貸與市區貧民。後又經市黨部捐緯通紗廠罰款二萬元及零星捐款二百元爲借本，同年八月又成立閘北第二區貧民借本處。區內貧民可覓舖保借本營生，以二十元爲限，不須抵押品，貸款分二十期收回，自貸出之日起，滿五日還本一次，每期還本二十分之一，初定週息一分，後改八厘，於最後還本時一次付清，但於第十期前還清貸本的，初定週息八厘，後改六厘。十八年度（十八年七月至十九年六月）共貸出借本 $38,137.50（十八年五月後半月貸出借本在內），平均每月貸出 $2,825，十九年度（十九年七月至二十年六月）共貸出 $57,683.50，註一 平均每月貸出 $4,806.96，偌大的上海每月僅貸出四千八百餘元的借本，自然是決不濟事的，至於救濟的不能普遍由於（1）貸本和設立的區域過少，（2）一般貧民尚還沒有知道這種救濟的事業，（3）覓保不易，和（4）調查信用需時，但是這終易解決的呀！

註一　十九年度該處添辦鄉間貧民及農事借本，資本一萬元，貸出數未列入。

四 食 物

食品分目和全年各目消費量值的分析 研究工人們生活狀況，先得把生活費和生活程度的意義區別清楚。生活費不過是生活上所需的費用，費用的多少和物價的高低，有密切關係，但是生活費的高低，不一定代表生活程度的高低。生活費只表示化費了多少錢，而生活程度却表示從這化去的費用所得人生上的意義和價值是怎樣。譬如說，上海工人家庭平均全年食物費用爲 $241·54，這是生活費，如果研究他們吃些什麼食品，營養的價值是怎樣，適宜而經濟的食料該如何配合，和國內外其他工人的食品比較有何異同，這便屬於生活程度的探討，也就是本編主要目的之一。

在各類生活費中，食物佔百分之五十以上，當然是最重要了。本編關於工人食物的資料，是從所記的 3,660 本工人家庭流水賬簿上得來的。這些材料告訴我們上海工人的食品，不下二百多種，因爲要和其他各處比較和研究食物滋養的成分，不能不有一個適當的分類。國人食物大都以米麵爲主，蔬菜魚肉等品爲副。食物一類，可以分爲米麵素菜葷菜調味品和其他等目，這種分類的方法，尙覺得界限清楚而自然，就是在研究滋養成分或和其他各處比較的時候，也很便利。表十八是按食品類目平均每家和每等成年全年消費食品的數量和價值，表中分食品爲五目：(1) 米麵——包括米麥等五穀及其製品；(2)豆及蔬菜——包括豆，豆製品及蔬菜；(3)魚肉及蛋——包括水屬動物如魚蝦等，家畜如猪牛羊鷄鴨等和蛋牛乳等產品；(4)調味品——包括油醬糖酒等調味用品；和(5)其他——包括瓜果糖食上館子和其他雜食等等。

表十八分左右兩部，左部是求 305 家的平均消費量和值，不問其實際購買的家庭有多少，這意思是要表示各種食品在全體家庭中的分配情形。右部載明(1)實際購買某種物品的家數，和在全體家庭中的百分數，(2)平均每購買家庭的消費量和值，其目的在於表示各種食品在工人家庭中消費範圍的廣狹是怎樣，和上海工人家庭的標準食物 (standard diet) 究竟包括些什麼食品。

米麵 試閱表十八左部，上海工人家庭平均每家全年食物類費用爲 $241·54，——或平均每月 $20·13，每日 $0·67——其中米麵目費用佔二分之一以上，平均每家全年爲 $128·97——或平均每月 $10·75，每日 $0·36——米麵爲上海工人的主要食品是無疑了。又米麵目中以食米一項爲最重要，佔該目費用五分之四以上，平均每家每年食米 7·19 石，——或平均每月約 6 斗，每日約 2 升(等於 1·8 公斤)。其次爲麵粉和切麵，約佔米麵目費用百分之五，平均每

家每年消費麵粉和切麵 75.02 斤——或平均每月 6.25 斤，每日 0.2 斤（等於 0.117 公斤）。其餘米或麵粉製品如燒餅油條粢飯饅頭等等，是工人們常食的點心（其中奶糕一項，係嬰孩食品），佔米麵目費用百分之十三，他們的數量很難估計，平均每家全年消費值爲 $16.73——或平均每月 $1.40，每日約 $0.046。如果把一個等成年做消費的單位，那末平均每一個等成年每天消費米約六合，麵粉和切麵約一兩，其他米麵製品約值 $0.013。

表十八　按食品分目平均每家和每等成年全年消費食物的量值

食品分目	單位	三〇家庭購買平均消費量 每家	三〇家庭購買平均消費量 每等成年	五家庭平均消費支出 每家	五家庭平均消費支出 每等成年	對食物費總數的百分比	家數	對三〇五家的百分比	五家庭平均每家消費量	五家庭平均每家消費支出
食物類				**$241.538**	**$70.625**	**100.00**	**305**	**100.00**		**$241.538**
米麵目				**128.966**	**37.709**	**53.394**	**305**	**100.00**		**128.966**
粳米	石†	4.238	1.239	63.512	18.571	26.295	273	89.51	4.735	70.957
糯米	石	2.849	.833	40.706	11.903	16.853	207	67.87	4.197	59.978
糙米	石	.100	.029	1.676	.490	.694	263	86.23	.116	1.944
麵粉	斤†	42.520	16.072	3.679	1.076	1.523	256	83.93	65.513	4.383
切麵	斤	32.495	9.561	2.660	.778	1.101	304	99.67	32.603	2.669
燒餅				5.274	1.542	2.183	297	97.38		5.416
油條				1.527	.446	.632	294	96.39		1.583
熟麵				1.743	.510	.722	257	84.26		2.068
饅頭				1.714	.501	.710	271	88.85		1.929
粢飯				1.118	.327	.463	256	83.93		1.332
糕				.851	.249	.352	271	88.85		.958
年糕				.738	.216	.306	155	50.82		1.453
湯糰				.266	.078	.110	162	53.11		.501
餅				.312	.091	.129	175	57.38		.544
麵包				.097	.028	.040	54	17.70		.545
子粥				.079	.023	.033	71	23.28		.340
糖糕				.088	.026	.036	124	40.66		.217
奶漿				.260	.076	.108	74	24.26		1.070
豆餅				.131	.038	.054	157	51.48		.255
月餅				.124	.036	.051	47	15.41		.804
飯酒				.016	.005	.007	4	1.31		1.250
釀				.001	.0003	*	1	.33		.216
其他點心				2.394	.700	.991	273	89.51		3.279
豆及蔬菜目				**42.177**	**12.332**	**17.462**	**305**	**100.00**		**42.177**
豆腐	塊	459.152	134.255	3.148	.920	1.303	305	100.00	459.152	3.148
豆腐百頁	張	382.186	111.759	1.975	.577	.818	305	100.00	382.186	1.975
豆腐乾	塊	207.497	60.672	1.428	.418	.591	305	100.00	207.497	1.428
黃豆芽	斤	42.400	12.398	1.676	.490	.694	305	100.00	42.400	1.676
豆腐	斤	3.528	1.032	1.030	.301	.426	305	100.00	3.528	1.030
豆瓣	斤	12.852	3.758	.664	.194	.275	305	100.00	12.852	.664
綠豆粉	斤	19.395	5.671	1.014	.296	.420	304	99.67	19.459	1.017
綠豆芽	斤	19.315	5.648	.941	.275	.390	290	95.08	20.314	.989
豆粉皮	張	7.366	2.154	.271	.079	.112	283	92.79	7.938	.292
綠豆粉乾	斤	35.184	10.288	.178	.052	.074	249	81.64	43.096	.219
豆腐衣	張	.831	.244	.296	.087	.123	117	38.36	2.106	.772
黃豆	斤	1.439	.421	.047	.014	.019	101	33.11	4.347	.141
蠶豆	斤	3.040	.889	.202	.059	.084	196	64.26	4.800	.314
其他豆類		4.200	1.228	.183	.054	.076	186	60.98	7.000	.301
白菜	斤	220.509	64.477	.189	.055	.078	200	65.58		.288
小白菜	斤	32.138	9.397	6.235	1.823	2.581	305	100.00	220.509	6.235
雞毛菜	斤	3.947	1.154	.932	.278	.394	302	99.02	32.457	.962
上海青	斤	2.694	.788	.141	.041	.058	196	64.26	6.141	.219
雪裏蕻	斤	57.229	16.734	.068	.020	.028	100	32.79	8.217	.206
蘿蔔菜	斤	44.510	13.015	3.208	.938	1.328	305	100.00	57.229	3.208
韭菜	斤	18.871	5.518	1.259	.368	.521	305	100.00	44.510	1.259
菠菜	斤	14.592	4.267	.781	.228	.323	301	98.69	19.122	.792
韭菜芽	斤	.881	.258	.689	.202	.285	302	99.02	14.737	.696
				.076	.022	.031	168	55.08	1.600	.138

表十八　按食品分目平均每家和每等成年全年消費食物的量值（續）

食品分目	單位	三〇家庭平均每家消費量	三〇家庭平均每等成年消費量	五家庭平均每家消費支出	五家庭平均每等成年消費支出	購買食物費對總數的百分比	購買家數	三〇五家的百分比	家庭平均每家消費量	家庭平均每家消費支出
菜葉頭白芳葉芳筍筍葉莧菜菜菜蒜乾子瓜瓜菜椒豆筍芋菇菜菜菜菜菜筍苣瓜瓜菜乾菜菜菜菜菜菜花葉頭豆菜菜菜	斤	19.284	5.639	$.833	$.244	.345	301	98.69	19.540	$.844
芹毛草菱洋豆芋竹毛蠶綿蓬塔葱蘿茄更黃捲辣扁水山茄鹹薺薤甜豌冬蒿南絲大筍黃膠芥菁油夜蒿馬刀豌乾	斤	19.072	5.577	1.102	.322	.456	304	99.67	19.135	1.106
	斤	14.366	4.201	.827	.242	.342	294	96.39	14.903	.858
	斤	10.191	2.980	.784	.229	.325	300	98.36	10.360	.797
	斤	15.678	4.584	.519	.152	.215	289	94.75	16.546	.548
	斤	10.677	3.122	.625	.183	.259	301	98.69	10.819	.634
	斤	7.159	2.093	.401	.117	.166	257	84.26	8.496	.476
	斤	3.353	.980	.616	.180	.255	218	71.48	4.691	.862
	斤	3.675	1.075	.433	.127	.179	179	58.69	6.262	.738
	斤	19.643	5.744	.526	.154	.218	282	92.46	21.245	.653
	斤	8.653	2.530	.296	.087	.123	287	94.10	9.196	.315
	斤	6.210	1.816	.203	.059	.084	257	84.26	7.370	.241
	斤	4.504	1.317	.290	.085	.120	167	54.75	8.226	.530
				.392	.115	.162	304	99.67		.389
	斤	2.669	2.780	.244	.071	.101	276	90.49	2.950	.269
	斤	9.743	2.849	.408	.119	.169	299	98.03	9.938	.417
	斤	13.495	3.940	.353	.103	.149	291	95.41	14.145	.370
	斤	4.961	1.451	.233	.068	.096	285	93.44	5.309	.249
	斤	13.014	3.805	.305	.089	.126	283	92.79	14.026	.329
	斤	5.238	1.532	.377	.110	.156	288	94.43	5.547	.399
	斤	3.302	.965	.168	.049	.070	237	77.70	4.250	.217
	斤	2.637	.771	.250	.073	.104	180	59.02	4.468	.424
	斤	9.981	2.918	.217	.063	.090	184	60.33	10.544	.360
	斤	2.085	.610	.187	.055	.077	167	54.75	3.810	.342
	斤	2.974	.870	.145	.042	.060	144	47.21	6.298	.307
	斤	1.110	.325	.072	.021	.030	123	40.33	2.753	.179
	斤	1.562	.457	.046	.014	.019	145	47.54	3.285	.096
	斤	2.073	.606	.045	.013	.019	127	41.64	4.979	.108
	斤	2.107	.616	.097	.028	.040	149	48.85	4.314	.198
	斤	.359	.105	.117	.034	.048	70	22.95	1.566	.509
	斤	4.693	1.372	.157	.046	.065	260	85.25	5.505	.184
	斤	3.999	1.169	.075	.022	.031	135	44.26	9.036	.168
	斤	1.104	.323	.050	.015	.021	137	44.92	2.458	.112
	斤	.517	.151	.101	.030	.042	84	27.54	1.879	.366
				.187	.055	.077	62	20.33		.870
	斤	27.138	7.935	1.277	.373	.529	293	96.07	28.250	1.330
	斤	1.024	.299	.051	.015	.021	33	10.82	9.462	.469
	斤	2.491	.728	.073	.021	.030	100	32.79	7.597	.223
	斤	1.830	.535	.068	.020	.028	110	36.07	5.075	.190
	斤	.784	.229	.043	.013	.018	67	21.97	3.570	.195
	斤	2.730	.798	.095	.028	.039	177	58.03	4.705	.164
	斤	1.020	.298	.015	.004	.006	88	28.85	3.536	.051
	斤	.269	.079	.015	.004	.006	54	17.70	1.520	.084
	斤	.176	.051	.014	.004	.006	35	11.48	1.536	.123
	斤	.647	.186	.029	.009	.012	59	19.34	3.344	.148
				.022	.006	.009	1	.33		3.803
				.546	.160	.226	297	97.38		.512
他蔬菜筋筋耳菜尖菌針筍貨菜	斤	.310	.091	.095	.028	.039	137	44.92	.691	.212
他麵麵	斤	.116	.034	.028	.008	.012	70	22.95	.506	.124
開萑園豆	斤	.075	.022	.136	.040	.056	216	70.82	.107	.192
	斤	.278	.081	.105	.031	.043	178	58.36	.478	.181
	斤	.186	.054	.128	.037	.053	111	36.39	.510	.352
	斤	.049	.014	.113	.033	.047	142	46.56	.106	.243
	斤	.166	.049	.088	.026	.036	191	62.62	.264	.141
				.027	.008	.011	23	7.54		.220
他南蛋				.231	.068	.096	106	34.75		.535
				.646	.189	.267	302	99.02		.636
魚				**39.864**	**11.657**	**16.504**	**305**	**100.00**		**39.864**
肉豬牛猪羊火鵝鴨血燻	斤	40.972	11.980	14.571	4.260	6.033	304	99.67	42.718	14.619
鮮鮮鹹	斤	8.576	2.508	2.381	.696	.986	303	99.34	8.633	2.397
	斤	5.898	1.725	1.846	.540	.764	229	75.08	7.856	2.459
	斤	.454	.133	.147	.043	.061	76	24.92	1.822	.592
				.070	.020	.029	24	7.87		.904
	斤	2.513	.735	1.099	.321	.455	127	41.64	6.034	2.638
	斤	1.122	.328	.376	.110	.156	99	32.46	3.456	1.214
臟	塊	14.859	4.345	.103	.030	.043	205	67.21	22.107	.153
				.043	.013	.018	30	9.84		.503

表十八　按食品分目平均每家和每等成年全年消費食物的量值（續）

食品分目	單位	三〇家庭平均消費量 每家	三〇家庭平均消費量 每等成年	五家庭購買平均每家消費支出 每家	五家庭購買平均每家消費支出 每等成年	對食物費總數的百分比	購買家數	對三〇五家的百分比	平均每家消費量	平均每家消費支出
鮮肉				$1.189	$.348	.492	264	86.56		$1.489
熟肉				.322	.094	.133	213	69.84		.461
鮮魚	斤	14.989	4.383	2.311	.676	.957	304	99.67	15.038	2.319
黃魚	斤	6.903	2.018	1.757	.514	.727	257	84.26	8.192	2.085
白魚	斤	3.545	1.037	1.422	.416	.589	274	89.84	3.946	1.583
鯽魚	斤	4.252	1.243	.750	.219	.311	225	73.77	5.764	1.017
帶魚	斤	1.533	.448	.283	.083	.117	199	65.25	2.349	.433
鰆魚	斤	1.986	.581	.277	.081	.115	168	55.08	3.605	.504
鰱魚	斤	.648	.189	.168	.049	.070	85	27.87	2.324	.604
鯉魚	斤	.524	.153	.195	.057	.081	64	20.98	2.498	.929
鱔魚	斤	.394	.115	.114	.033	.047	67	21.97	1.794	.527
麵魚	斤	.173	.051	.053	.015	.022	55	18.03	.961	.296
長魚	斤	.132	.039	.029	.008	.012	39	12.79	1.029	.226
其他鮮魚				1.418	.415	.587	298	97.70		1.462
鹹白魚	斤	8.455	2.472	1.500	.439	.621	300	98.36	8.596	1.525
淡鹹魚乾	斤	1.057	.309	.192	.056	.079	132	43.28	2.433	.447
鹹帶魚	斤	.893	.261	.144	.042	.060	120	39.34	2.271	.370
青鹹魚	斤	.929	.272	.108	.032	.045	111	36.39	2.552	.296
黃鹹魚	斤	.714	.209	.071	.021	.029	85	27.87	2.502	.255
鹹鰱魚	斤	.373	.109	.070	.020	.029	61	20.00	1.861	.356
其他鹹魚				.201	.059	.083	134	43.93		.480
鮮蝦	斤	1.205	.352	.361	.106	.149	240	78.69	1.531	.458
鮮螺螄	斤	3.947	1.154	.183	.054	.076	246	80.66	4.894	.227
鮮蟹	斤	.546	.160	.183	.054	.076	116	38.03	1.435	.482
鹹蟹	斤	.675	.197	.182	.053	.075	94	30.82	2.191	.592
鹹蝦				.042	.012	.017	79	25.90		.182
毛蚶	斤	2.260	.661	.122	.036	.051	114	37.38	6.047	.325
其他介殼				.143	.042	.059	180	59.02		.276
蝦米	斤	.383	.112	.391	.114	.162	276	90.49	.423	.432
海蜇皮	斤	.569	.166	.087	.025	.036	112	36.72	1.551	.236
海蜇參	斤	.556	.163	.082	.024	.034	91	29.84	1.862	.275
海鰕				.047	.014	.019	39	12.79		.445
海味	斤	.103	.030	.076	.022	.031	127	41.64	.248	.182
其他海味				.274	.080	.113	258	84.59		.408
野菜				.035	.010	.014	18	5.90		.589
鮮蛋	個	84.932	24.834	.534	.156	.221	105	34.43		1.847
鹹鴨蛋	個	9.478	2.771	2.435	.712	1.008	303	99.34	85.492	2.451
鮮鷄蛋	個	7.679	2.245	.297	.087	.123	227	74.43	12.736	.401
皮蛋	個	4.269	1.248	.232	.068	.096	170	55.74	13.776	.417
牛乳				.136	.040	.056	129	42.30	10.093	.325
奶粉				.314	.092	.130	28	9.18		3.437
				.498	.146	.206	29	9.51		5.239
調味品目				**25.483**	**7.451**	**10.550**	**305**	**100.00**		**25.483**
豆油	斤	58.242	17.030	13.839	4.046	5.730	302	99.02	58.821	13.976
醬油	斤	62.042	18.141	5.824	1.703	2.411	305	100.00	62.042	5.824
食鹽	斤	32.033	9.366	2.571	.752	1.064	305	100.00	32.033	2.571
白糖	斤	8.787	2.569	1.009	.295	.418	303	99.34	8.845	1.016
豬油	斤	2.249	.658	.789	.231	.327	249	81.64	2.755	.967
蔴油	斤	1.142	.334	.372	.109	.154	299	98.03	1.165	.379
調料冰糖	斤	2.159	.631	.240	.070	.099	254	83.28	2.593	.289
生油	斤	2.725	.797	.235	.069	.097	218	71.48	3.813	.329
醬	斤	.900	.263	.220	.064	.091	32	10.49	8.577	2.099
醋				.213	.062	.088	286	93.77		.227
味精	斤	.629	.184	.039	.011	.016	180	59.02	1.066	.066
蔴粉	瓶	.134	.039	.030	.009	.012	23	7.54	1.783	.491
其他調味				.021	.006	.009	93	30.49		.667
				.081	.024	.034	222	72.79		.144
其他目				**5.048**	**1.476**	**2.090**	**305**	**100.00**		**5.048**
西瓜				.636	.186	.263	234	76.72		.815
荸薺				.139	.041	.058	186	60.98		.226
橘子				.125	.037	.052	140	45.90		.273
甘蔗				.123	.036	.051	152	49.84		.248
香瓜				.082	.024	.034	138	45.25		.181
梨子				.078	.023	.032	149	48.85		.160
香蕉				.047	.014	.019	102	33.44		.142
菱角				.045	.013	.019	149	48.85		.093
桃子				.035	.010	.014	88	28.85		.117

表十八　按食品分目平均每家和每等成年全年消費食物的量值 續

食品分目	單位	三〇家庭平均消費量 每家	三〇家庭平均消費量 每等成年	五家庭平均消費支出 每家	五家庭平均消費支出 每等成年	對食物費總數的百分比	購買家數	對三〇五家的百分比	購買家庭平均每家消費量	購買家庭平均每家消費支出
蔬菜				$.029	$.008	.012	59	19.34		$.152
柿子				.017	.005	.007	56	18.36		.090
梅子杷				.002	.0006	*	15	4.92		.045
桃其他水果				.0003	.0001	*	1	.33		.094
花生	斤	3.819	1.117	.398	.116	.165	268	93.77		.453
棗子	斤	1.510	0.442	.584	.171	.242	290	95.08	4.016	.617
桂圓				.367	.107	.152	211	69.18	2.182	.531
瓜子	斤	0.763	0.223	.256	.069	.098	97	31.80		.742
栗子				.205	.060	.085	235	77.05	.991	.267
蓮心				.034	.010	.014	51	16.72		.201
胡桃				.005	.001	.002	2	.66		.819
其他乾果				.002	.0006	*	1	.33		.600
糖果				.293	.086	.121	197	64.59		.453
汽水				.194	.057	.080	194	63.61		.305
菓子露				.093	.027	.039	40	13.11		.708
冰淇淋				.002	.0006	*	1	.33		.640
吃館子				.0003	.0001	*	3	.98		.030
				1.276	.373	.528	80	26.23		4.863

† 1石(海斛)=200磅，1斤(已化爲天平)=0.5865 公斤。

* 不足 0.001。

南人食米北人食麵　試以上海工人們所吃的米麵和北方人比較一下，可說是適得其反。例如北平工人每等成年每日消費小米和小米麵約 0.348 斤，玉米和玉米麵約 0.425 斤，小麥麵（卽白麵）約 0.267 斤，此外尙有少量的蕎麥麵，高粱和豆類。至於每等成年每日所消費的白米，不過 0.061 斤，約合 0.04 升而已。註一 又據金陵大學卜克教授等的調查，河北省鹽山縣農民平均每家全年吃高粱 344.7 公斤，小米 283.2 公斤，玉米 226.1 公斤，小麥 45.9 公斤；河南省新鄭縣農民平均每家全年吃小麥 801.9 公斤，高粱 296.1 公斤，小米 284.8 公斤，玉米 217.7 公斤。以上兩地，都以麵食爲主，而沒有把白米作食品的。又如安徽省懷遠縣農民平均全年消費小麥 888.8 公斤，高粱 534.3 公斤，大米 334.8 公斤，大麥 26.0 公斤，小米 6.2 公斤。他們雖然把麥麵爲主要食品，不過大米的消費量也很不少。至於江蘇省江寧縣的農村情形那就不同了，平均每家全年消費大米 835.3 公斤，小麥 87.6 公斤，玉米 45.6 公斤，大米是他們的主要食品，麥吃的很少，和上海的情形很是符合。註二 照上面看來，可以說長江以北的人民，大都以麵食爲主，其中以小麥麵（或稱白麵）爲上品，吃白米（卽大米）的很少。至於長江以南的人民，不論貧富，大都以米飯爲主要食品，不過米的等級則有差異，麵食並不是常吃的食品。

註一　參閱 Tao, L. K., 同前書, p. 78, Table 4. 其每等成年每日消費米麵數量，係依表折合而得。

註二　Buck, J. L., Chinese Farm Economy, 1930, Chapter X, Food Consumption, pp. 365, 368, 369, 371.

豆及蔬菜 305 個家庭平均每家豆和蔬菜目的費用，佔食物費總計百分之 17.5，全年共計 $42.18——或平均每月爲 $3.52，每日爲 $0.12。豆和豆製品，味美價廉，在上海工人的膳食中，和蔬菜同爲重要的菜肴，如豆腐百頁黃豆芽等，都是他們常吃的食品。依據表十八，305 家平均每家全年購買豆腐 459.1 塊，豆腐乾 207.5 塊，百頁 382.2 張，黃豆芽 42.4 斤，發芽豆 19.3 斤，油豆腐 3.5 斤，線粉 19.4 斤。此外尙有少量的豆類，如綠豆芽豆瓣和粉皮等是。若把所吃的各種豆和豆製品的費用總算起來，則 305 家平均每家每日約爲 $0.04，佔豆及蔬菜類費用三分之一。

上海工人所吃的蔬菜，種類很多，其中消費最多的是青菜——青菜是白菜小白菜小上菜鷄毛菜等的總稱，不過因季節和大小的關係而有不同的名稱——鹹雪菜蘿蔔黃芽菜毛豆莢等幾種。305 家平均每家全年消費青菜 259.29 斤，或每月 21.61 斤，鹹雪菜 57.23 斤，或每月 4.77 斤，蘿蔔 44.51 斤，或每月 3 71 斤，黃芽菜 27.14 斤，或每月 2.26 斤，毛豆莢 19.07 斤，或每月 1.59 斤。以上數種蔬菜全年費用共計 $14.24，約佔豆及蔬菜目費用總數三分之一。其餘大多數的蔬菜，都有它不同的季節，如春季的竹筍蠶豆莢等，夏秋季的茄子東瓜等，不過在一個季節裏盛行，因此全年消費量都很少，其費用總計，約佔豆及蔬菜目費用三分之一而已。

肉魚及蛋 肉魚及蛋目的費用，佔食物費百分之 16 5，平均每家全年爲 $39.86——或平均每月 $3.32，每日 $0.111，和豆及蔬菜目費用幾於相等。肉類中消費最多的是鮮猪肉，305 家平均每家全年消費 40.97 斤(等於 24.03 公斤)或每月 3.41 斤，其費用佔肉魚及蛋目的費用三分之一强。其次爲鮮牛肉和鹹猪肉，305 家平均每家全年消費鮮牛肉 8.58 斤(等於 5.03 公斤) 或每月 0.71 斤，鹹猪肉 5.90 斤(等於 3.46 公斤) 或每月約 0.5 斤。的確鮮猪肉鮮牛肉和鹹猪肉，是上海工人們常吃的肉類，其餘如鷄鴨等品，消費量却不多，至於北方工人常吃的羊肉，在上海工人家庭中平均全年消費還不到半斤。

上海濱海沿河，水屬動物的供給非常便利，所以上海工人全年消費的魚和其他水屬動物也不能算少。魚的種類很多，在鮮魚中消費最多的是黃魚白魚帶魚和鯽魚。305 家平均每家全年吃黃魚 14.99 斤，白魚 6.90 斤，帶魚 4.25 斤，鯽魚 3.55 斤。鹹魚中消費最多的是鹹白魚，305 家平均每家全年購 8.46 斤。其他鮮魚鹹魚和水屬動物，消費不多。蛋類中以鮮鴨蛋爲最多，平均每家全年購 84.9 枚，而鮮鷄蛋不過 7.7 枚。牛乳和奶粉，是小孩的食品，消費量很少。兩項合計，平均每家一年所費，還不到一元。

如果把上海工人所吃的肉魚及蛋和北平工人比較一下，眞有天淵之別，北平工人平均每家

半年消費肉魚目品 6.39 斤，值 $1.60，其中羊肉一項，却佔了 2.76 斤，值 $0.80，佔該目消費值的二分之一。其餘如猪肉佔 1.32 斤，值 $0.37，牛肉 1.26 斤，值 $0.27，兩項合計，又佔該目費用五分之二。又 48 家中購魚的不過一家，平均每家消費值還不到 $0.01，購蛋的不過 7 家，平均每家消費值不過 $0.033，購牛奶的一家也沒有。註一 這表示北方貧民的一般狀況，以視上海工人平均每家全年肉魚及蛋的費用竟有 $39.86，之多，眞有欣羡莫及之感咧！

調味品 調味品目費用佔食物類費用百分之 10.5，305 家平均每家全年爲 $25.48——或每月 $2.12。調味品中消費最多的是豆油醬油食鹽和白糖，305 家平均每家每年購豆油 58.2 斤，醬油 62.0 斤，食鹽 32.0 斤，白糖 8.8 斤，以上四種是調味必需之品，合計每月需 $1.94（按記賬期內價格），佔調味品目費用百分之 91.2。其餘如料酒蔬油猪油赤糖花生油醬醋調味粉等等的費用，僅佔百分之 8.8。在北平，蔬油代替了豆油的地位，醬的消費比醬油多，這又是南北不同的地方。

其他 其他一目費用，佔食物類費用總計百分之 2.1，平均每家全年計僅 $5.05——或每月 $0.42。上海工人家庭消費水果很少，平均每家不過 $1.76，約佔該目費用三分之一，其中以西瓜橘子甘蔗荸薺等爲多，花生瓜子棗子桂圓等乾果和糖菓，大都在新年的時候購買，平均每家 $1.92，約佔該目費用五分之二弱。上館子費，平均每家 $1.28，約佔該目費用三分之一。

各類食物中消費最多的項目 在表十八右部的各項數字，米麵目中，食米最爲重要，305 家曾消費粳米的共 273 家，佔家庭總數百分之 90，消費秈米的只 207 家，佔百分之 68。若把上面兩個百分數相加，再減去 100，得 58，這可以表示 305 家中粳米和秈米兼吃的佔百分之 58。又 305 家中買糯米的，有 263 家，佔五分之四以上，不過購買的數量很少，平均每家約一斗。這因爲糯米並不是日常的食品，只在新年和端節購買的。305 家中買麵粉的有 256 家佔百分之 84，平均每家全年消費 65.5 斤，至於購買切麵的，有 304 家之多，平均每家全年購切麵 32.6 斤，這幾可以說沒有一家不買的。若論米麵製成的點心，305 家中，買燒餅的有 297 家，佔百分之 97，平均每家全年計費 $5.42。其次買油條的有 294 家，佔百分之 96，買饅頭和糕的，各 271 家，各佔百分之 89，買熟麵的 257 家，買粢飯的 256 家，各佔百分之 84。以上五種，其每種消費額，平均每家在一元至二元之間，都不及燒餅之多。

在豆及蔬菜目中，豆腐豆腐乾油豆腐豆瓣黃豆芽青菜鹹雪菜蘿蔔等品，是沒有一家不購買的。其餘如線粉葱蒜菠菜韭菜芹菜菱白豇豆莢茄子毛豆莢等品，也幾於無家不吃，不過消費額

註一 Tao, L. K., 同前書, pp. 83—84.

比較豆腐青菜等品爲少。

肉魚及蛋目中，買鮮猪肉和鮮黃魚的，各有 304 家，買鮮牛肉和鮮鴨蛋的，各 303 家，買鹹白魚的 300 家，這幾種食品，也可說幾於無家不吃。其中鮮猪肉的消費量值最多，平均每購買家庭全年消費 42.72 斤，值 $14.62，其餘每種消費額，平均每家全年僅在一元至三元之間。此外如鮮鯽魚鮮白魚鮮帶魚鹹帶魚螺螄和蝦米等，也是工人家庭的常吃食品。至於購買牛乳的家庭不過 28 家，買奶粉的 29 家，消費量很少。

調味品目中，醬油和食鹽，是家家必備的，其次買白糖的有 303 家，買豆油的 302 家，買蔴油的 299 家，買醬的 286 家，買料酒的 254 家，買猪油的 249 家。

在其他一目中，買花生的有 290 家，買瓜子的 235 家，買西瓜的 234 家，買糖菓的 194 家。其餘的食品，消費就很少了。

食物費用的分析　下列數字，是 305 個家庭平均每家全年食物類各目的費用和百分數：

米　麵	$128.97	53.4%
豆及蔬菜	42.18	17.5
肉魚及蛋	39.86	16.5
調味品	25.48	10.5
其　他	5.05	2.1
合　計	$241.54	100.0%

若按收入的多少分組（見表十九），那末下面兩點，很值得我們的注意：第一，平均每家食物類各目費用，都有隨收入的增高而加多的趨勢，不過同時要注意平均每家人口數和等成年數（連寄膳者）也是隨收入的增加而加多的，所以平均每等成年食物類各目費用，就未必隨收入的增高而加多。例如平均每等成年全年米麵目費用最少是 $300—399.99 組的 $35.77，最多是 $600—699.99 組的 $39.45；豆及蔬菜的費用最少是 $600—699.99 組的 $11.89，最多是 $700 及以上一組的 $13.67；調味目費用最少是 $600—699.99 組的 $6.81，最多是 $400—499.99 組的 $7.77。但是平均每等成年全年肉魚及蛋和其他兩目的費用，是隨收入增多而有加高的趨勢，因爲肉魚蛋和水果等，在工人家庭中是比較奢侈的食品，祇有收入較豐的家庭纔能常吃。第二，平均每家食物類各目費用，固然是隨收入增加而一致加多，但是各目費用對於食物類費用總計的百分數分配，却未必是一致的。試閱表十九便知平均每家米麵目和調味品目費用的百分數，有隨收入增高而降低的趨勢，肉魚及蛋目和其他目費用的百分數，又有隨收入增多而加高的趨勢，豆及蔬菜目費用的百分數，隨收入增加而略高，然並沒有多大的變動。這些事實都可以表示收入多的家庭，米麵目調味品目的成分減少，而肉魚及蛋目和其他目費用的成分加增，從吸取食物滋養的價值上看來，顯見得是稍勝了。

表十九　按收入組平均每家和每等成年食物類各目全年費用的分析

收入	家數	平均每家人口 連膳者	平均每家人口 寄連膳者	平均每家和每等成年食物類各目消費支出 米麵目 每家	米麵目 每等成年	豆及蔬菜目 每家	豆及蔬菜目 每等成年	肉魚及蛋目 每家	肉魚及蛋目 每等成年	調味品目 每家	調味品目 每等成年	其他目 每家	其他目 每等成年	合計 每家	合計 每等成年
				$	$	$	$	$	$	$	$	$	$	$	$
$200—299.99	62	4.13	2.85	107.10	37.58	34.24	12.01	24.99	8.76	21.89	7.68	3.25	1.14	191.47	67.18
300—399.99	95	4.53	3.09	110.53	35.77	37.92	12.27	33.36	10.80	23.44	7.59	4.36	1.41	209.61	67.83
400—499.99	80	5.45	3.61	141.24	39.12	44.73	12.39	40.34	11.18	28.05	7.77	4.29	1.19	258.65	71.65
500—599.99	31	6.13	4.02	151.15	37.60	51.19	12.73	53.50	13.31	27.79	6.91	5.96	1.48	289.59	72.04
600—699.99	25	6.48	4.23	166.88	39.45	50.28	11.89	65.81	15.56	28.80	6.81	9.39	2.22	321.16	75.92
700及以上	12	7.25	4.38	169.80	38.77	59.86	13.67	75.83	17.31	30.18	6.89	13.59	3.10	349.26	79.74
總計或平均	305	5.09	3.42	128.97	37.71	42.18	12.33	39.86	11.66	25.48	7.45	5.05	1.48	241.54	70.63
				百分數											
$200—299.99	20.3			55.9	55.9	17.9	17.9	13.1	13.1	11.4	11.4	1.7	1.7	100.0	100.0
300—399.99	31.2			52.7	52.7	18.1	18.1	15.9	15.9	11.2	11.2	2.1	2.1	100.0	100.0
400—499.99	26.2			54.6	54.6	17.3	17.3	15.6	15.6	10.8	10.8	1.7	1.7	100.0	100.0
500—599.99	10.2			52.2	52.2	17.7	17.7	18.5	18.5	9.6	9.6	2.0	2.0	100.0	100.0
600—699.99	8.2			52.0	52.0	15.6	15.6	20.5	20.5	9.0	9.0	2.9	2.9	100.0	100.0
700及以上	3.9			48.6	48.6	17.1	17.1	21.7	21.7	8.7	8.7	3.9	3.9	100.0	100.0
總計或平均	100.0			53.4	53.4	17.5	17.5	16.5	16.5	10.5	10.5	2.1	2.1	100.0	100.0

幾處食物費用分配的比較　關於各地人民生活狀況——尤其是食物住屋衣着燃料等——的資料，國內尙不甚多，卽在能够得到的家計調查或生活費調查報告中，也少很詳細的記述，所以要做一個各地人民生活狀況的比較，眞感覺到不易嘗試，下面僅選擇了幾個地方——並不限於國內——只作一個簡略的比較。

北平　上海工人食品的質，固然比北方的農工來得優良(參閱本章第一節)，就是食物類各目費用的分配，也比較勻稱。據北平社會調查所的調查，北平工人的食物費，只米麵一目要佔五分之四，其餘不過佔五分之一，差不多米麵之外，魚肉蔬菜瓜菓等品，都不佔重要地位。註一又該所調查北平郊外掛甲屯村人民食物費的分配，計米麵目費用佔百分之 83·2，蔬菜佔百分之 10·2，調味佔百分之 5，肉和其他費用，都不到百分之 1，更不如北平城內的工人了！註二

日本及印度孟買　再把上海工人和東方國家如印度日本的人民來比較一下（見表二十），則印日人民與上海工人的食物費分配，反較上海與國內北方人民食物費分配爲近似——尤其是米麵目。東方國家以米麵等穀類爲主要食品，豆蔬菜肉魚等次之，蛋和牛乳的消費不多。據印度孟買勞工局 (Labour Office, Government of Bombay)的調查，孟買工人家庭以米爲主要食品，平均佔食物費百分之 31·4，其次爲麵粉和其他穀類，米麵費用總計佔食物費百分之 55·8。豆佔百分之 4·4，蔬菜佔百分之 5·3。肉魚等品中以魚和羊肉的消費爲多，猪肉是信回教的印度人所不吃的，牛奶和乳油的消費額隨收入的增多而加高，平均不過佔食物費百分之五强。肉魚牛奶等費用共佔百分之 15·9。調味品佔百分之 7·2，其他食品佔百分之 11·4。註三

註一　Tao, L, K., Livelihood in Peking, 1928, Chapter VI, Food Consumption,平均每家半年食物類各目費用的分配如下：

米　麵	$39·494	80·0%
蔬　菜	4·482	9·1
肉　魚	1·603	3·2
調　味	3·315	6·7
其　他	·530	1·0
總　計	$49·424	100·0%

註二　李景漢：北平郊外之鄉郊家庭，民國十八年五月，P. 63，其平均每家全年食物類各目費用的分配，係重加核算而得：

米　麵	$87·69	83·2%
蔬　菜	10·81	10·2
肉　魚	·81	·8
調　味	5·26	5·0
其　他	·83	·8
總　計	$105·40	100·0%

註三　Shirras, G. Findlay, Report on an Enquiry into Working Class Budgets in Bombay, 1923, pp. 16—17, 60—63。食物類各目費用百分比係重加核算而得。

又據日本內閣統計局在 1926—1927 年的調查，日本工人家庭（智識勞動者及農民不計）的食物費，米麵目佔百分之 45·7，其中以米和大麥的消費爲多；豆及蔬菜佔百分之 15·3，其中以豆腐的消費額爲最多；肉魚蛋目佔百分之 14·6，以魚的消費爲最多，肉次之，蛋及牛乳又次之；調味品目佔百分之 9·5，其他佔百分之 14·9。註一 現在且把上海孟買和日本工人的食物費分配，比較如下：

表二十　上海孟買及日本工人食物類各目費用分配的比較

食品分目	上海	孟買	日本
米麵	53·4	55·8	45·7
豆及蔬菜	17·5	9·7	15·3
肉魚及蛋	16·5	15·9	14·6
調味	10·5	7·2	9·5
其他	2.1	11·4	14·9
總計	100.0	100.0	100.0

從上表看來，中印日三國工人的主要食品都是植物質，尤以米麵爲最多。——上海和孟買，同爲中印兩國最大的工商業中心，兩處工人，很可以代表全國一般工人的情形——在這三個區域內，食物費中，穀類豆和蔬菜等植物食品的百分比，都在百分之 60 以上，計上海爲 70·9，孟買 65·5，日本 61。至於肉魚蛋牛乳等動物產品的費用，都佔食物費百分之 16 左右，調味費用的百分比，最少爲孟買的 7·2，最多爲上海的 10·5；其他費用的百分比，最少爲上海的 2·1，最多爲日本的 14·9，不過其中有在外用膳 (meals outside the home) 和在家購買現成餐食 (bought meals for home consumption) 的兩項費用，就佔食物費百分之 6·6，這不可不注意的。

愛爾蘭　若把上海工人食物類各目費用的分配和西洋人比較，那就大相逕庭了，若說東方的人民是蔬食者 (vegetarian)，把穀類如米麵等爲主要食品，蔬菜肉魚等爲菜肴品，那末西洋人可算是肉食者，他們把肉類和牛乳等爲主要的食品，麵包穀類等爲副。先就在歐洲認爲貧窮的國家如愛爾蘭而論，他們的食物又是怎樣呢？據愛爾蘭經濟部 (Irish Ministry of Economic Affairs) 在 1922 年六月調查 308 個工人家庭生活費的結果，愛爾蘭工人家庭的食物費用的分配，有如下列：註二

註一　The Japanese Family Budget Enquiries of 1926—1927, International Labour Review, Vol. XXIII, No. 3, March 1931, p. 394。原文食物類包括烟酒兩目，茲將該目剔出，再計算食物類各目費用的百分比，以求與上海印度的分類一致。

註二　Shirras, G. Findlay, 同前書, p. 17，表中各項數字係根據該書核算而得。

穀類	20.1%
蔬菜	7.9
茶	6.7
糖	7.6
閒食	1.2
其他	1.7
植物食品總計	45.2%
牛肉	9.1
羊肉	5.2
魚	1.3
其他肉類	18.2
牛乳	21.0
動物食品總計	54.8%
食物費總計	100.0%

試以上述食物費的分配，和東方人民的相對照，就不難感覺到東西人民食物的分配，頗有不同之點。即就愛爾蘭而論，動物食品的費用，佔食物費全部百分之 54.8，其中肉類佔食物費總數百分之 32.5，牛乳佔百分之 21，魚類佔百分之 1.3，至於植物的食品，不過佔食物費百分之 45.2 而已。再看東方人民食物費中的植物食品，至少在百分之 60 以上，相形之下，顯見西洋人的主要食物是肉類和牛乳，穀類蔬菜等不過是次要食品，而東方人民的主要食物是米麵等穀類，肉類不過是增加口味的食品，牛乳的消費更少。

美國　現在再把美國人民的食品情形來做個例子，以見一斑。據美國勞工統計局在 1918—1919 年調查 11,900 個工人家庭生活費的結果，平均每家全年所消耗各種食品的分配，表如下：註一

動物食品：	
牛肉	209.7 磅
豬肉	87.4 磅
羊肉	17.4 磅
家禽其他肉類	78.2 磅
魚及海味	47.5 磅
蠔	2.3 四分之一加侖
牛乳及乳酪	372.8 四分之一加侖
煉乳奶油乾酪等	144.4 磅
蛋	61.2 打
油脂	84.5 磅
穀類及其製品：	
麵粉（小麥）	260.1 磅
麵包（小麥）	397.7 磅
米	32.1 磅
其他穀類及其製品	291.7 磅
豆及蔬菜食品：	
番薯	762.7 磅
白菜	63.1 磅

註一　Cost of Living in the United States, published by Bureau of Labor Statistics, U. S. Department of Labor, 1924, pp. 118—119。表中各項食品名稱數字，係根據原表重爲排列和合併而得。

番茄	115.2 磅
葱	65.5 磅
蘢鬚菜芹菜	9.8 把
萵苣	27.4 顆
菠菜捲葉菜豌豆豆苗	8.6 四分之一布希爾
其他乾鮮罐頭蔬菜及豆類	158.9 磅
其他食品：	
鮮果桃子	19.8 四分之一布希爾
香蕉檸檬橘子	20.1 打
漿果	12.4 四分之一加侖
香瓜西瓜	7.8 個
其他水果	47.5 磅
乾果及罐頭水果	36.6 磅
糖	107.5 磅
糖漿果漿蜜	39.0 磅
糖果巧格力	11.7 磅
花生油	3.6 磅
澱粉漿	2.6 磅
罐頭菜汁	4.8 磅
咖啡茶可可及其他滋養品	52.4 磅
小吃	57.7 次

美國食物化學專家希爾門 (Henry C. Sherman) 曾根據美國勞工統計局和農事部 (U. S. Department of Agriculture) 的調查，把他們的結果綜合比較起來，推定一個美國家庭各種食物費用的分配，大致如下。註一

	百分數
肉，魚(包括家禽和水屬動物)	30—40
蛋	5— 6
牛奶	7—10
牛油及其他油脂	7—12
麵包及其他穀類製品	10—20
糖及糖菜	3— 7
蔬菜	7—10
水果	2— 8
乾酪及乾果	2 弱

細按上面美國人民食物分配的情形，就可以知道他們是把肉類蛋牛乳牛油等品作爲主要食物，其費用約佔食物費百分之 50—70 之間，至於穀類的費用，僅在百分之 10—20 之間，居第二，其他如糖蔬菜水果等也佔相當的地位。回頭再看東方人民的食物，只穀類一項已佔食物費百分之 46—80 之間，肉魚蛋的費用至多也不過百分之 17，食物的種類，未免太單調了。這個探討，雖沒有和歐美各國一一詳細的比較，却也可以見到東西人民食物差異的大概。我們且不忙提及食物滋養的問題，單論西洋人各種食物的分配情形，畢竟比我們勻稱得多！下章再把上海工人食物在營養上的價值研究一下。

註一 Sherman, Henry C., Chemistry of Food and Nutrition, Second Edition, 1924, pp. 386—390.

五　食物的營養素和發熱量

生活的現象，簡單說起來，不外乎是體內各機關對於外界物力的變化所呈適應環境的動作而已。這等動作，大概可分爲兩種：一是物質的新陳代謝，一是能力(energy)的新陳代謝，我們欲求這兩種代謝的作用，不得不攝取外界的食物，在體內漸次分解爲簡單的化合物，藉血液輸送各部以爲補充。化合物以消耗而起燃燒作用，因燃燒而發生熱和力，熱所以保存體溫，力所以運用官能。生活的現象，實藉熱和力而得以維持。這些物質，有的更合成爲複雜的化合物而構成身體的組織。以分解而變成的無用物質，由皮膚泌尿器呼吸器消化器等排泄體外。這種從攝取食物來維持生活現象的作用，叫做營養。供給營養的物質，叫做營養素(nutrition)。

各種營養素的性質和功用　通常分析食物，得五種成份：(1) 蛋白質(protein) (2) 脂肪(fat)，(3) 碳水化物 (carbohydrate)，亦稱澱粉質，(4) 無機鹽類 (inorganic salts)，亦稱灰份或礦物質 (ash constituents or mineral matter)，(5) 水分 (water) 等五種。近來又有各種維生素 (vitamin) 的發見，現在先簡略地說明各種營養素的性質和功用。

(1) 蛋白質　蛋白質是組織極複雜的含氮化合物，合碳氫氧氮硫五種元素而成。蛋白質的特徵是含有氮和硫素，其他營養素無此成份——但間有含磷和鐵的。蛋白質分子異常複雜，一時還沒有定論。不過一般研究食物的化學家相信蛋白質在消化的機能中，先分解爲種種的亞明酸 (amino acids)，藉血液而輸送各部，被吸收時再組成肌膚蛋白質而變爲血肉皮毛等等。生活的細胞，時時需要各種新的亞明酸，所以蛋白質有分解的必要。化學家分解蛋白質爲二十餘種的亞明酸。這二十餘種的亞明酸，其中只有數種可以在吾人體中自製，其餘必須取給於食物中的蛋白質。動物體內的大部分如血肉皮毛鱗爪乳卵軟骨等等，幾乎全部是蛋白質構成的。

(2) 脂肪　脂肪係合碳氫氧三種元素而成，係不良導體，能保持體溫。在消化的時候，脂肪分解爲脂酸和甘油，被吸收時再合成天然的脂肪。這再度的合成是在消化物滲過臟壁時發生的，所以脂肪的吸收是由淋巴管而非由毛細管注入血液中的。血漿因多量的脂肪注入後而轉濃，數小時後乃由血液把脂肪輸送到各種組織裏去。在那裏脂肪可以供給燃燒，發生熱力以供肌肉和肢體的運動，或貯藏在皮膚組織中以備未來的應用。一部分變爲組織中的脂狀體(lipoids)，或更合蛋白質而成在化學上更複雜的細胞的原形質 (cellular protoplasm) 細胞膜 (cell membrane) 或中央神經系。註一

註一　Sherman，同前書，p. 115。

脂肪既是供給「能力」的本源，自極重要，大部分貯於植物的種子和肉類之中，不過最近已證明碳水化物在體內也能够化成脂肪質的。

(3) 碳水化物　天然的碳水化物，存於植物體內者爲多，如澱粉纖維糖類糊精等。碳水化物係合碳氫氧三種元素而成。食物中的碳水化物，經口液和胃液的消化，再經毛細管而吸入大靜脈，其大部分暫時化爲臟粉 (glycogen $C_6H_{10}O_5$) 而貯於肝臟之內，再逐漸化爲葡萄糖 (glucose) 而注入血液中以供燃燒。註一

碳水化物和脂肪，二者雖同爲供給熱量的本源，但前者容易燃燒，後者則否。脂肪在空氣中單獨燃燒時生烟霧狀，如果配合碳水化物燃燒，就可以發出透明火焰，這足以證明碳水化物的另一作用是幫助脂肪在體內燃燒的。沒有完全燃燒的脂肪，在體內是往往有毒的，可以使人發生昏睡的狀態 (coma)，這情形常常發生於飢饉或小兒吃脂肪質過多的時候，亦卽爲幫助脂肪燃燒的碳水化物不足的原因。註二

(4) 無機鹽類　食物完全燃燒之後，所餘成份，總稱爲無機鹽類，亦稱灰份，通常爲硫酸鹽類，磷酸鹽類，鈉鉀鎂鈣鐵等氯化物和炭酸鹽等。

蛋白質分解的時候，常生硫酸磷酸，然太多則致中毒，灰份可以中和 (neutralize) 此等酸類，故在生理上也很重要。灰份雖不發熱，但其中最重視的爲磷鈣鐵碘和食鹽等。磷爲腦和神經的成份，又爲精蟲的成份，故與腦力和生殖力作用，大有關係；鈣爲骨的成份，可助骨骼的發展和牙齒的堅强；鐵爲血液中必要的成份；碘爲甲狀腺和白血球中的成份；食鹽於刺激心臟上亦爲必要。

(5) 水分　人體三分之二，由水而成，或爲汗便，或爲水蒸氣，由肺外達，故常須補充。體中如缺乏水份，則與食物的吸收和消化，均有阻礙，甚至血液濃厚不能活動，或不能排泄廢物，故須飲適宜的水量。不過自然界中水量的供給很多，且普通食物中都含有水份，故營養化學上不必時加考慮。

(6) 維生素　維生素 (vitamin) 或譯爲維他命，還是最近才發見的。這種食物，存量雖微，然在營養上却極重要，倘食物中沒有這種成分，決不能使動物完全發育。

我們今日所承認的維生素，計有五種，不過至今還不能提取純粹的維生素，所以他們的性質，仍未能十分明瞭，各種維生素的功用，這裏只簡略地說一說：

註一　同上書，p. 104。

註二　Plimmer, V. G. and Plimmer R. H. A., Vitamins and the Choice of Food, 1922o pp. 6—7o

脂溶性甲種維生素(fat-soluble A-Vitamin)。此種維生素天然溶存於牛脂油卵黃油肝油和其他油脂之中。至於普通動物體脂內，果含有此種維生素與否，至今尙成問題。牛脂油含有甲種維生素很多，然而牛脂不含氮和磷，故知甲種維生素亦不含此二元素。對於熱的抵抗力，至攝氏百度亦無大害，但對於氧的作用頗有影響。在動物體內，沒有合成此物的能力，植物則似能於綠葉中自由合成之，故必須攝諸食料之中。凡有綠葉素的植物卽如藻等，也含有這種維生素，且爲量尙多。對於動物的生理作用，還未大明，但是有促進動物的生長，和脂肪的新陳代謝等功用，則無疑義，不過同時要有乙丙兩種維生素的存在。

水溶性乙種維生素 (water-soluble B-Vitamin)。純粹的乙種維生素，現在還不能提取，不過能得濃厚的成份而已。在大氣壓力下，雖加熱至攝氏百度或百二十度，僅一小部受影響，故在普通的烹飪溫度範圍內尙不致失其效用。然遇鹼類，則受顯著的損害。煮豆類和菜的時候，倘略加鹼，固可使柔軟可口，但是對於維生素是很有損害的。糠粃中含有此種維生素極爲豐富，專食過於輾白米的人，很容易生脚氣病，這就是缺少乙種維生素的現象。在生理上的作用，雖沒有十分明瞭，據實驗，乙種維生素和食物中碳水化物的新陳代謝，當有密切的關係，確有增進食慾的機能。食料中碳水化物愈多，所需要乙種維生素的量也愈多。

水溶性丙種維生素 (water-soluble C-Vitamin)。丙種維生素發見未久，性質尙不明瞭，因其對於氧化加熱乾燥和其他的作用，更易變化，所以極難處理，且以其存在於食物種類的不同，對於熱力的抵抗亦異，對於鹼的抵抗力極弱，卽遇碳酸鈉，亦可失其作用。丙種維生素的效用，最顯著的是抵抗壞血性，大半存在於新鮮的番茄蘿蔔生菜檸檬橘子等蔬果中。

丁種維生素 (D-Vitamin)。有輔助鈣與磷新陳代謝的功能，如食物中缺少此種維生素而鈣與磷又不豐富，就要生軟骨症或佝僂病。各種豆類和穀類中，都缺少這種維生素，但蔬菜中是很豐富的，不過分量容或不同，且因時令而異，據試驗，小白菜大青菜油菜常含有豐富的丁種維生素。

戊種維生素 (E-Vitamin)。膳食中缺少這種維生素，男的睾丸和女的卵巢，皆不能發達健全，因此而減去生殖的能力，故亦稱抗不育性維生素。

總之，上面六種營養素的功用，雖甚複雜，大概說來，蛋白質所以助身體的成長和廢物的補充；脂肪和碳水化物供給體內的「力」和保持體溫；無機鹽類構成骨骼血液；水分輸運體內的物質和助成化學變化的作用；維生素促進身體完全發育以維持生活的功用。

食物的發熱量 食物的大部分，在動物體內，漸次分解成爲簡單的化合物，由此所發生的

熱量，供給動物必需的「能」。普通計算熱量是用卡羅里（calorie）做單位，即以蒸溜水一立方公分（cubic centimeter）加熱，使增攝氏表熱度一度所需的熱，曰一小卡羅里。不過我們這裏所用的是大卡羅里，就是一個小卡羅里的一千倍，下文卡羅里係指大卡羅里而言。

食物在人體內，受氧化而分解，是一種燃燒的作用，故如由化學分析而決定食物中有機成份——蛋白質脂肪碳水化物——的量，並由量熱計（calorimeter）將此等物質置氧氣中完全燃燒，而精測其所發生的熱量，便可算出食物全體的發熱量。脂肪和碳水化物，在體內幾完全燃燒，故發生的熱量，與在氧氣中燃燒時幾乎相同。蛋白質却就不然了，他在體內不能完全燃燒，平均每克蘭姆（gram）要耗損 1.3 卡羅里熱量，一部分變爲尿素和其他有機化合物而排泄體外。所以蛋白質在體內發生的熱量，實際上不及在量熱計中所測定的量。

化學家參酌這種情形，決定食物各成份在體內每一公分（gram）平均的發熱量如次：註一

蛋白質	4 卡羅里
脂肪	9 卡羅里
碳水化物	4 卡羅里

人和獸畜，可以說是一架計熱的機器，在某狀態之下，要消費多少熱量，都可以試驗出來的。據許多食物化學家的研究，一個成人（重 70 公斤或 145 磅）一天需要食物熱量的供給，大概是這樣：註二

8 小時的睡眠	（每小時 65 卡羅里）	=	520 卡羅里
2 小時的輕便運動	（每小時 170 卡羅里）	=	340 卡羅里
8 小時的工作	（每小時 240 卡羅里）	=	1,920 卡羅里
6 小時的休息	（每小時 100 卡羅里）	=	600 卡羅里
總計一日需要食物熱量			3,380 卡羅里

國人體重平均不及 70 公斤，所以熱量的需要，亦就少些，大概一個成年一天有 3,000 卡羅里的熱量，也就够了。

上海工人膳食營養價值的研究　食物化學專家，都承認食物營養的不良是人民體力退化效率減低和死亡率增加的一個大原因，這却不難用鴿子或白鼠來試驗一下。試驗的時候，把白鼠分爲兩組，在同樣情形之下，一組飼以適當的食料，另一組飼以各種營養成份不足或不合或缺少某種營養素的食料，經過若干時日，一組壯健碩大，一組衰萎瘦弱，甚或病死，更可把兩組的食料，互相對調，以究結果。用這種方法，可以試驗各種成份的食料對於動物的反應，因此不難研究最適當的膳食品。譬如食物內缺少了甲種維生素，很容易生一種眼病(xelophthalmia)

註一　Sherman，同前書，p. 143.

註二　同上書，pp. 185—186.

和佝僂病 (rickets)。缺少了乙種維生素，生神經炎症，在人類就是一種脚氣病。又如缺少丙種維生素，就生壞血病，若以此種食料飼天竺鼠(俗稱土撥鼠)，約三週間，關節內部出血，漸至柔輭而漲大，同時消化機能，亦受其害，不逾三十日，卽致死亡。凡食物內如缺少其他某種重要的營養素，都可以影響到精神和體力的維持與發展。據北平協和醫學校吳憲教授的實驗，曾取同胎的白鼠數頭，分爲兩組，一組飼以類似國人的膳食，另一組則飼以類似美人的膳食。二組幼鼠，在起初的時候，尙無顯著的病徵。但前者各年齡的體重，遠遜於後者，四星期後，後者體重爲40—60 公分，前者不過 25—40 公分。註一

上海工人們膳食的營養素價值是怎樣？有什麼缺憾和須改良的地方？若和他處工人比較又有什麼異同？

表二十一　上海工人家庭平均每等成年男子每日自膳食所得的滋養分量和發熱量*

食品	蛋白質	脂肪	碳水化物	發熱量
	公分	公分	公分	卡羅里
米麵	50.014	2.833	505.588	2,247.905
豆及豆製品	15.139	4.931	27.091	213.299
蔬菜	4.395	.578	17.510	92.822
肉及魚	8.471	9.443	.331	120.195
蛋及牛奶	.711	.555	.026	7.943
油醬及糖	2.715	29.384	6.193	300.088
其他	1.029	1.065	3.099	26.097
總計	82.474	48.789	559.838	3,008.349
	百分數			
米麵	60.64	5.81	90.31	74.72
豆及豆製品	18.36	10.11	4.84	7.09
蔬菜	5.33	1.18	3.13	3.09
肉及魚	10.27	19.35	.06	4.00
蛋及牛奶	.86	1.14		.26
油醬及糖	3.29	60.23	1.11	9.97
其他	1.25	2.18	.55	.87
總計	100.00	100.00	100.00	100.00

* 關於各種食品營養成份和發熱量的情形，和計算營養成份的根據和方法，參閱附錄一。

根據上表，上海成年工人每日自膳食所發生的熱量，祇有 3,008 卡羅里，這個數量對於一個做輕便工作的人，是不致於不足了。

熱量的來源　有一位學者，曾經提倡一個最經濟而衞生的美國家庭膳食，其中熱量來源的分配如下：註二

註一　吳憲：營養概論，十八年十二月，商務印書館出版，第72—73頁。

註二　Buck, J. L., Chinese Farm Economy, p. 365. 該書係根據 Rose, Mary, Swartz, The Foundation of Nutrition 書中所述。

	百分數
穀類	30—40
牛乳	20—25
肉蛋乾酪	5—10
蔬菜及水果	12—15
脂肪和油類	10—12
糖	10—12

若照上面的標準看來，上海工人——其實我國各地大都如此——膳食中熱量的來源，和這個提議簡直是大相逕庭了。上海工人膳食的熱量，來自穀類的佔百分之 74·7，比上面的標準竟高出一倍，實覺得太多；來自牛乳的，不到百分之 0·2，又覺太少。國人膳食偏重於穀類，因此其他食物在成份上失其勻稱，並不免單調，實有謀補救的必要，在他方面也正可以解釋爲什麼我國人民能够習於水平線以下的生活程度。我國農民直接消費耕田內所生產的穀子，並不把他們來喂養生畜，而間接取給於他們的肉和乳的，所以能够安於在面積很小的耕田上謀生計。

食物總燃料價值，既是蛋白質脂肪碳水化物三者發熱量之和，理論上這三種成份的份量，可以隨意配合和變換，祇要他們的發熱量能够適應我們的需要就好了。但是在事實上，食物中最低限度的蛋白質仍舊不能缺少，各種營養素的成份，也要有一個適宜的配合才好。

許多學者曾試驗我們一天究竟至少要多少蛋白質，和營養素的成份要怎樣配合，方稱適當，各家的理論，很不一致。註一 例如據美國却登盾 (Chittenden) 的主張，平均一個成年(重 70 公斤)，一天所需蛋白質的最低限度是 49 公分，所以我們一天有了 60 公分的蛋白質也就足够了。註二 但照愛脫華氏 (Atwater) 的研究，一個成年做劇烈運動的時候要 150 公分的蛋白質，做輕便工作的要 125 公分，做不活潑生活的也要 100 公分之多。註三 却氏和愛氏的主張，雖不免相去太遠，然大概說來，一個人一天所吃的蛋白質，如果能够供給百分之 10—15 的

註一 參考 Carter, Howe, Mason: Nutrition and Clinical Dietetics, p. 81. 茲轉錄各家的理論如下：

作者及情形	標準的食物			
	蛋白質	脂肪	碳水化物	燃料價值
	公分	公分	公分	卡羅里
愛脫華(成人，70公斤) Atwater				
劇烈運動	150			4,150
輕便運動	125			3,400
不活潑的生活	100			2,700
休息(或婦女輕便工作)	90			2,450
伏德(德國) Voit				
普通食物	118	56	500	3,053
劇烈運動	145	100	450	3,300
潑萊弗(英國) Playfair	119	55	531	3,060
格底歐(法國) Gautier	107	61	407	2,630
却登盾(美國) Chittenden	60			2,800

註二 Sherman，同前書，p. 220。

註三 同上書，p. 363。

熱量，就可以稱爲適當了，這幾乎是現在公認爲合理的標準。註一 照這個標準計算，如果一個人每天需要 3,000 卡羅里的熱，那末他所需要的蛋白質是 70—110 公分。

至於膳食中蛋白質脂肪和碳水化物是應該怎樣配合，各家的學說又很不一致。註二 但是下面所列的推算，或許是一個適當的規定，很可以供給一個做輕便工作的成年人一天所必需的熱量：註三

蛋白質	100 公分	= 400	卡羅里
脂肪	60 公分	= 540	卡羅里
碳水化物	550 公分	=2,200	卡羅里
總計		3,140	卡羅里

我們再看上海成年工人每日膳食中蛋白質脂肪碳水化物各有若干公分？所供給的熱量的百分率是怎樣分配？和他處比較又是怎樣？各處膳食的比較見下表：

表二十二　上海北平和美國人每日膳食中各種營養素的分量及其發熱量百分率的比較

營養素	上海			北平(中等社會)†			北平(工人)††			美國*		
	公分	卡羅里	百分數	公分	卡羅里	百分數	公分	卡羅里	百分數	公分	卡羅里	百分數
蛋白質	82.5	329.9	11.0	91.7	366.8	12.3	75.9	303.6	11.7	106.0	424.0	13.0
脂肪	48.8	439.1	14.6	40.0	360.0	12.1	29.6	266.4	10.3			
碳水化物	559.8	2,239.4	74.4	562.4	2,249.6	75.6	505.3	2,021.2	78.0			
總計	691.1	3,008.4	100.0	694.1	2,976.4	100.0	610.8	2,591.2	100.0		3,256.0	100.0

† 吳憲：營養概論，第 57 頁。係調查 1,077 膳食的結果。

†† Tao, L. K., Livelihood in Peking, p. 96。原書爲 2,595.14 卡羅里，但據各營養素總量而推得之熱量實爲 2,591.2 卡羅里。

* 吳憲：同前書，第 57 頁，該書所載係據美國希爾門的調查，原書祇列蛋白質及卡羅里兩項數字。

上海工人膳食中蛋白質和脂肪的缺乏　依據上表，上海成年工人每日膳食中蛋白質的數量爲 82.5 公分，脂肪 48.8 公分，碳水化物 559.8 公分。若照上述三種營養素適當的配合標準來評判，那末蛋白質和脂肪的份量，頗嫌不足。蛋白質發熱量的百分率僅 11，已近於最低的邊際上了，比北平的還覺差些，當然比不上美國了。脂肪的分量，雖比北平略高，然尚低於學者所定的最低標準，份量的不足，是沒有疑義的。據 Pearl 氏的調查，美國人每日所吃的脂肪質計 113 公分，註四 和國人比較，眞有天淵之別了！至於碳水化物的份量，還不算很多，和北平中等社會的相仿，其發熱量約佔全體四分之三。雖然碳水化物和脂肪，兩者都是供發熱用的，可

註一　同上書，p. 222。

註二　參閱 Carter, Howe, Mason, Nutrition and Clinical Dietetics, p. 8。

註三　Plimmer And Plimmer，同前書，p. 9。

註四　Pearl, R., Studies in Human Biology, p. 419.

以互相替代，並且碳水化物在體內能化合爲脂肪質，所以二者有時不妨彼多此寡，不必完全適合於上述的標準。不過脂肪是甲丁戊三種維生素的溶解物，美國人膳食中的脂肪，大半爲富於維生素的牛乳油，國人膳食中的脂肪，爲量既少，而大部分又是缺乏維生素的猪油豆油和菜油，這是應該注意的。至於蛋白質固然不可太少，但是他的品質必求其優良，比量的問題還要重要，所以我們還要作進一步的研究。

關於蛋白質的研究　據研究，人體消耗蛋白質的多少，會跟着平日攝取多少蛋白質的習慣而自然調整的。註一 如果體內的脂肪和碳水化物足够應用，那末蛋白質的需要可以不隨用力的多少而增減。註二 所以我們因運動而增加發熱量的時候，應加脂肪和碳水化物，蛋白質的量，可以不必增加。然蛋白質是膳食中一種最重要的營養素，可以供給構造或修補細胞的材料，和人體各部分的組織，有特殊的功用，例如兒童在發育的時期，蛋白質的需要，較成人宜多。又各種蛋白質在生理上的價值，高下不一。完全的蛋白質，可以構成同量的肌膚蛋白質，其生理的價值爲百分之百。下等的蛋白質，若沒有其他化合物的輔助，不能構成肌膚，其生理上的價值爲零。中等蛋白質的價值，則介乎二者之間。這不過照理論上而言，按實際，那末蛋白質經消化之後，在細胞爐火之中，縱然可以完全變爲肌膚，一部分的質地也不免被燃燒了。所以同一蛋白質，在生理上的價值，要看他在膳食中成分的高低而定，成份高則價值低，成分低則價值高，因爲成分高，被燃燒部分就多，成份低則相反。例如牛乳的蛋白質，佔膳食中百分之 5 的時候，它生理上的價值爲 93，到百分之 10 的時候，就只有 85 了。

據學理的推究，凡生物的系統相近的，它的蛋白質的性質，也相近似。所以動物的蛋白質，和我們體內的蛋白質的性質，當然比較植物的蛋白質爲近。植物的蛋白質爲動物所食而變爲動物的蛋白質的時候，他所含的各種亞明酸，須經過一番的選擇，因此而有重大的消耗。例如每十磅的穀，把他飼牛，只可得到一磅牛肉或六磅牛乳。所以動物的蛋白質，非但生理上的價值，就是經濟上的價值，也比植物的蛋白質爲高。據美人米奇爾 (Mitchell) 的試驗，各種蛋白質佔膳食中十分之一時，其生理上的價值如下：

鷄蛋(整)	94	牛腿肉	69	玉蜀黍(整)	60
牛乳	85	猪肉	74	馬鈴薯	67
鷄蛋白	83	小牛肉	62	黃豆	64
牛肝	77	燕麥	65	蠶豆	38
牛腎(腰)	77	小麥(整)	67	可可粉	37
牛心	74	白麵	52		

註一　Sherman，同前書，pp. 207—209。

註二　同上書，pp. 210—217。

蛋白質還有一種互助的作用。食物中的蛋白質，大都屬於中等或下等的，他們所以能够適應我們營養需要的原故，因爲我們膳食中的蛋白質，不止一種，他們能够發生互助的功效。設有甲乙兩種蛋白質，甲種含有過多的子亞明酸而缺丑亞明酸，乙種含有過多的丑亞明酸而缺子亞明酸，甲或乙單獨爲膳食中的蛋白質時，其生理上的價值都很低，但甲乙相參，苟比例適當，則結果可以和完全的蛋白質一樣。因爲甲中之子，可以補乙之不足，而乙中之丑，也可以補甲中之不足。例如白麵的蛋白質爲膳食中單獨的蛋白質時，其生理的價值爲 55，牛肉的蛋白質，在同一情況之下，其價值爲 69，如果把一分的牛肉蛋白質和二分的白麵蛋白質相參雜，它的價值就變爲 73。又如麥的蛋白質和黃豆的蛋白質佔膳食中百分之 10 的時候，都不能使白鼠循規生長，但若把三分的麥和一分的黃豆相參雜，結果就很好。大抵同類的食物，其蛋白質少互助的功效，因爲食物的品類相同，其蛋白質所含亞明酸的種類和比例也相同。所以穀類之間，缺乏互助的能力，他的缺點可以用牛乳肉類或蔬菜來補充的。註一

上海工人食物的熱量，由蛋白質所供給的平均約佔百分之 11 弱，已如上述。假使這些蛋白質的來源是優良而調勻的，那也就不致於不足了。所以應該把上海工人們所吃蛋白質的來源和品質研究一下。表二十三是上海工人北平——中等階級——和美國人膳食中蛋白質和熱量來源的百分率比較。

表二十三　上海北平和美國人每日所食蛋白質和食物發熱量來源百分率的比較

食物類目	上海†		北平††		美國††	
	蛋白質	食物發熱量	蛋白質	食物發熱量	蛋白質	食物發熱量
穀類	60.6	74.7	73.9	82.0	37.3	38.2
豆及蔬菜	23.7	10.2	14.6*	6.3*	10.4*	12.1*
肉及魚	10.3	4.0	9.7	6.1	35.3	19.0
蛋及牛奶	.9	.2	.9**	.3**	16.3	9.9
油醬及糖	3.3	10.0		4.3	.4	20.4
其他	1.2	.9	.9	1.0	.3	.4

† 吳憲：營養概論，第 58 頁。係調查北平中等社會 1,077 人膳食的結果。

†† Sherman, H. C., Chemistry of Food and Nutrition, p. 555, 3rd edition, 1927。希氏的數字，係根據 224 家膳食的研究。

* 包括冰菜。

** 完全沒有牛奶。

依據表二十二，上海工人每日膳食中的蛋白質共 82.5 公分，而其中來自動物的——肉魚蛋牛奶——不過百分之 11.2，其餘大都來自植物的食品，如穀類蔬菜等，而尤以來自穀類——

註一　吳憲：同前書，第 10—16 頁。

米麵——的爲最多，佔百分之 60.6。按蛋白質來自動物的比來自植物的爲優，因此只計算蛋白質的量已足够了，但是蛋白質的質，顯見得很差。其故在於來自植物的蛋白質太多；而來自動物的又太少了。不但蛋白質的品質過劣，並且因爲來源的不調勻，遂缺少了互助的效用，在生理上的價值，也就大大的減低了。

其實國人膳食中蛋白質的不良，何獨上海一隅爲然，北平中等社會膳食情形，較上海更差，蛋白質的量，雖然比較多些（91.7），但其中來自穀類的竟佔百分之 73.9 之多；來自豆及蔬菜的爲百分之 14.6，來自肉及魚的，和上海相仿，僅佔百分之 9.7 而已。武斷地說一句，國人膳食中的蛋白質，來自植物者十之九，來自動物者只十之一而已。

國人和美國人膳食的比較　試再閱上表，把國人的膳食和美國人比較一下，那末至少有三大不同之點：在發熱量方面，國人膳食中自穀類所發的熱量佔十之七八，而美人膳食中不過佔十之三四；美人膳食中的蛋白質屬於動物的佔百分之 52，在國人的膳食中不過百分之 10 左右；美人多用牛乳及其製品，國人則否。

又據希爾門氏的調查，美國人每日得蛋白質 106 公分，見表二十二，今假定他們的平均體重爲 70 公斤，那末體重每公斤得 1.52 公分。上海工人每日每人得蛋白質 82.5 公分，假定平均體重爲 60 公斤，每公斤只得 1.38 公分，相形之下，已覺不如。又美人膳食中的蛋白質，大半來自動物，而尤以來自牛奶鷄蛋和肉類的爲多，其消化率高，中國人的蛋白質，十之九屬於植物的，以出於穀類和豆類的居多，其消化率低。所謂消化率（disgestibility）者，指消化的量和所食的量之百分比，例如食 100 公分屬於麵包的蛋白質，其不可消化而變爲渣滓的爲 15 公分，可以消化的爲 85 公分，那末消化率就是 85。不過任何一種食物的消化率，並不是有一定的數目，不但是該視食物的量而定，並且還依膳食中其他食物的性質和數量而變。大概食物在單獨吃的時候，其消化率低，如果和其他東西混雜而食，則其消化率較高；又食量愈多，那末消化率也愈低。註一 據英人馬蓋（McKay）的研究，每人每日食 560 公分的米，那末他的蛋白質的消化率爲 64，若食 680 公分，消化率降爲 55，若食 850 公分，消化率又降至 46。米的消化率如此，其他穀類的蛋白質，可想而知，若豆類則更不及。註二

膳食中的礦物質　從前的食物化學家，大都把膳食中的礦物質忽略了。據研究，我人所需要的無機鹽類爲鉀鈉鎂氯碘等，在食物中已供過於求，不慮不足。按蛋白質多含硫素，假使有適

註一　Sherman, 同前書, pp. 101—102。

註二　吳憲：同前書，第 16，63 頁。

當的蛋白質，那末硫素也就足够了。無機鹽類中最容易缺乏的，推鈣磷鐵三種原質。據希爾門的研究，每人每日須有0.68公分的鈣，1.44公分的磷，和0.015公分的鐵，方才能够維持身體中消耗的平衡。註一 若在孩童成長的時候，上面的份量須增加一倍以上，又同一食物所含無機鹽類的量，視土質天時而異，與蛋白質脂肪碳水化物有一定份量的有異。所以在研究膳食的時候，對於無機鹽類，若要作精確的估計，非實行分析不可。本編對於上海工人膳食中每種食品所含的無機鹽類，只把含量最多而可以稽考的在附錄一裏註出來，至於份量的決定和分析，只能留待化學專家去解決。國人的膳食，以穀類爲主，穀類的營養性質，既然相同，那末各地的膳食，相差也當然有限，茲摘錄吳憲教授所作北平人膳食中關於無機鹽類的數字，以見一般。註二

表二十四　北平和美國人每日所得鈣磷鐵三種礦物質分量的比較

礦物質別	北　平	美　國*
鈣	0.337 公分	0.740 公分
磷	1.178 公分	1.630 公分
鐵	0.0187 公分	0.0179 公分

* 根據美國 Sherman, H. C. 的調查。

據上表，中美兩國人民每日所得的鐵，均尚適如其量，但美國人每日膳食中的磷和鈣量，已超過希爾門氏的標準，而北平人膳食中，磷和鈣則嫌不足，尤其是鈣，祇及美人之半，如果沒有充分的丁種維生素，就有發生佝僂病之虞。據希氏的調查，美人膳食中鈣的多少，視牛乳的多寡而定，國人膳食中幾乎是沒有牛乳的，這是缺乏鈣的主因。

膳食中的維生素　上海工人膳食中的維生素，究竟是否足够，却還不能有很肯定的答案，因爲我們至今還不能提取維生素的本體，不過用實驗的方法去間接推定他的存在和多少而已。本編附錄一詳載上海工人每種食品所含維生素的種類和份量，又附錄二載有若干種富於維生素的食品，可以參閱。

甲種維生素　歐美人膳食中的鷄蛋牛乳及其製品，都是甲種維生素的重要來源。上海工人所得的甲種維生素，大都來自蔬菜，若要達到歐美人民同量的甲種維生素，須多食蔬菜。若以蔬菜的性質而論，菠菜小白菜萵苣，是富於甲種維生素，黃瓜茄子蘿蔔等品，或無維生素的存在，即使有之，量亦極微。肉類雖亦有之，但並不豐富，據此看來，上海工人膳食中，似有缺少甲種維生素之虞。

乙種維生素　白米和白麵爲國人食物的大宗，而乙種維生素的含量却很少，豆類如黃豆赤

註一　Sherman, 同前書，p. 383。

註二　吳憲：同前書，第 57，66－67 頁。

豆豆腐黃豆芽蠶豆豆油等和小米，都含有豐富的乙種維生素，前者爲吾人大部份乙種維生素的來源，惜消費數量，尙嫌不足，鷄卵黃最富於乙種維生素，但不是工人們日常的食品。所以工人們的膳食，也未始不缺乏乙種維生素。

丙種維生素　檸檬橘子之類，最富於丙種維生素，但價過昂貴，蔬菜中如青菜（半熟）馬鈴薯（半熟）豆芽之屬，也富於乙種維生素，所以工人們的膳食，還不至過於缺乏丙種維生素。

丁種維生素　各種穀類和豆類食物，都缺乏丁種維生素。蔬菜中間有富於這種維生素的，但含量不等。據吳憲教授試驗華北二十餘種蔬菜的結果，含有充分丁種維生素的僅小白菜甘藍菜油菜等幾種。且同樣這幾種菜，冬日含量不及夏日，因此知日光有創造丁種維生素的功能，郊外的人，工作於日光之下，膳食中縱使缺乏丁種維生素，可以無虞。若城市居民，受日光的機會較少，在夏日的膳食中，或有充分的丁種維生素，冬日則也有缺少之虞。註一

總括起來：上海工人膳食的總發熱量，雖不至於不足，但是蛋白質脂肪和碳水化物這三種營養素的配合似欠適合，蛋白質十之九來自植物，祇有十之一來自動物，所以品質上和生理上的價值欠佳。無機鹽類中，鐵雖足用，鈣和磷患不足，乙丙兩種維生素，不致過少，然甲丁兩種，則有缺乏之虞。

改良膳食的幾個提議　各地人民的膳食，第一須看那地方的物產是怎樣？第二須看他們經濟狀況是怎樣？而兩者之中，經濟情形，尤爲重要。交通愈便利，人民的膳食遂不必限於本地的物產，但是採取物產的種類，却免不了受經濟的支配。我國所產的鷄蛋，量尙不少，近年以出口的關係，農民待價而沽，而幾萬里以外的美國人，反用以製造餅干等品。同是一塊農地，我們用來種穀子自己吃，而他們用來飼牧牛羊而飲其乳，這究竟是什麼原故呢？無非他們富裕而我們是窮困啊！國民經濟如是其窮困，欲求營養的完善，談何容易。不過國人的膳食，是否須待經濟富足而後始可改善的，關於這點，吳憲教授所提創的幾條辦法，很值得注意。註二

（1）乳類是一種富於營養素的食品，於小孩尤爲相宜。我國缺乏牛乳，且價值太昂，非一般人——尤其是工人——所能享受。不過羊乳的價值，不亞於牛乳，並且養羊比養牛爲易。中等之家，有草地的，不妨一試。

（2）乳類以外，富於營養性質的，當推鷄卵，吾國既缺牛乳，那末鷄卵的生產，應竭力推廣。中等之家，飼鷄數頭，那末小孩的營養，也可以無庸愁慮了。

註一　吳憲：同前書，第 65—66 頁。

註二　同上書，第 73—76 頁。

以上兩種辦法，在城市工人方面，尙難辦到，因爲居處的狹小和經濟的壓迫，力實有所不逮。

(3) 穀類的皮和胚，很富有乙種維生素和無機鹽類。我人好白米白麵，而以糠和麩子，喂飼生畜，實爲可惜。最好改食整米整麥，否則用粗米(米糠沒有完全脫去者)和黑麵。美國的整麥麵包，尤爲衞生家所稱道，近且有以麩子特製的餅充早餐的。國人視自製的粗麵爲賤品，而好買舶來的洋麵，在營養上適得其反。糙米未經磨擦，勝於白米，也應多用。近來提倡食糙米或米麥夾食的漸多，對衞生和經濟兩方面都有益處，這誠然是目前民生問題中極有價值的提議。不過南方麥產不足自給，設需要增加，更覺得不够。姑就本市而論，如能把特頂粳米的消費，竭力撙節，則不獨對於個人衞生經濟，大有裨益，抑且間接有惠於一般貧民。因此本局曾搜集十五種糙白不同的米樣，交本局工業物品檢驗所分析化驗。化驗的結果，白米所含蛋白質和脂肪，均比糙米爲少，尤以頭號常熟白米—亦稱特頂粳—爲最少，化驗結果詳見十九年四月二十五日上海申報。可見米愈白者，其營養料愈薄弱。這因外圍的薄膜，富於蛋白質和脂肪，舂臼時和糠一起去掉了。非但如此，糠皮尙含有多量有機性鐵質和磷酸鹽等，並含有 (Crygauni) 的成份和甲乙兩種維生素，這都是治療脚氣病的有效成份和滋養身體的要品。此外米的優劣，更可視發生熱量的高低爲定。經種種的證明，在生理衞生上，特頂白米，實在是食米中的最劣者，而上海市民，感於上口的便利，甘之如飴，因此附近的產地，投其所好，碾白之後，運滬銷售。據米業中人言，糙米一石可碾普通白粳八斗二三升，如果再碾爲特別白粳，只七斗二三升。總計每年爲供給本市市民而消耗於碾白的米糧，不下五十萬石，食品精華，移作猪豕的飼料，實近暴殄。非但如此，每逢米市緊張的時候，特粳奇貨可居，低次各米，遂連帶提高，貧民受累，更是不淺。例如十九年春，上海米價貴至二十一元以上，實際不過極少數的特粳，乃普通米亦非二十元不可。

(4) 黃豆和他的製造品，所含的蛋白質很好。豆腐豆乳，尤適合小孩的食品。國人膳食中，穀類食物可以酌減，而以黃豆及其製造品代替。以豆類的維生素和無機鹽的含量，比穀類高，似可酌量多用。

(5) 葉類蔬菜，富於甲種維生素和無機鹽。工人們的膳食，既缺乏牛乳，那末葉類蔬菜，尤須多食，菜葉是營養精華彙集的地方，人民習慣，多棄菜葉而祇取菜莖，這也應該改良的。番茄富於甲乙丙三種維生素，爲蔬菜中所難得的，應推廣他的用途。

(6) 我國烹調之法，也有幾點要改良的。考食物的所以須烹調，有三層利益：使食物容易消化，使食物適口，和殺滅微菌和寄生蟲。不過烹調過度，也有害處，維生素因熱而分解，尤其

是甲乙兩種維生素。所以烹調時間，不可太長。平常蔬菜，煮十分鐘就可以吃了。外國蔬菜清潔，可以生吃。吾國蔬菜，多用糞作肥料，生吃不合衞生，倘用沸水冲洗過，那末也未始不可以生吃。

蔬菜所含的維生素和無機鹽類，多半可以溶化水中。我們烹調的習慣，把菠菜芹菜之類，先在沸水內煮過，然後取出菜而把水棄了，因此菜裏的維生素和無機鹽類也完全失去，很是可惜。蔬菜應該用冷水來洗，烹調之後，和菜湯同用。又南方人煮飯，間有先用沸水煮米，把湯棄了做洗衣之用，不特維生素和無機鹽類因而消耗，就是蛋白質和碳水化物，也損失不少，這也應該注意的。

國人煮食物時，有加鹼使易柔軟的，這種習慣，也不合衞生。鹼能消滅胃液中的鹽酸，其爲害尙小，至於乙丙兩種維生素在鹼性溶液中加熱，極容易消滅，損害才大咧！蛋白質所含的亞明酸，在鹼性溶液中，也有容易分解的。

六 住 屋

住屋問題的內容 要明瞭住屋問題的重要，先不妨把它的內容說一說。其中最值得我們注意的，有衞生德性和經濟等幾個問題：

(甲)關於衞生方面 英國格蘭斯哥城醫官克而摩博士 (A. K. Chalmers) 曾證明人民的死亡率和住屋的大小是成反比例的。據他在 1909—1912 年的統計，僅住一間房屋者的死亡率爲千分之 25·9，住兩間的 16·5，住三間的 11·5，住四間的 10·8，這就是說，住屋間數愈多，死亡率愈低。註一

居住房間的多少，和小孩子的體格也有顯著的關係。據蘇格蘭教育部麥根齊 (Dr. W. L. Mackenzie) 和福士德 (Captain Foster) 考察 72,857 個自 5 歲到 18 歲的學童的體格和住屋大小的關係，所得結果如下：註二

房間數	男童		女童	
	平均體重(磅)	平均體高(英寸)	平均體重(磅)	平均體高(英寸)
1 間	52·6	46·6	51·3	46·3
2 間	56·1	48·1	54·8	47·8
3 間	60·0	50·0	59·4	49·6
4 間及以上	64·3	51·3	65·5	51·6

再看住房內的設備和住房外的環境，對於人們的關係是怎樣？據美國潘雪爾維尼亞省約翰斯城 (Johnstown) 聯邦兒童局 (United States Children's Bureau) 的調查，他們所得的結果如下：兒童(至少已出生一個月者)睡眠於空氣流通之室者，其死亡率爲 28·1——每千人中的死亡數——睡眠於空氣不流通者，增至 169·1；居於乾燥住房內的死亡率爲 122·5，居於潮濕住房內的爲 156·7。家內有盥洗室的死亡率爲 108·3，用室外廁所的爲 159·3。家中用自來水的死亡率爲 117·8，用戶外運來的水的爲 197·9。註三 這很明顯的表示空氣乾燥廁所飲水等等，和兒童死亡率的高低是很有密切的關係。布盾 (C. B. Purdom) 在他的園林化的城市 (Garden City) 一書裏有這樣的敍述：「在 1912 那年全英格蘭和威爾斯出生兒童 872,767 人，其中有 82,939 人在出生後第一年內死亡了，這就是說在這普通情形之下兒童死亡率爲千分之 95，在那時已經是最低的紀錄了。但是在園林化的城市裏，兒童死亡率只

註一 Aronovici, Carol, Housing and Housing Problem, The National Social Science Series, 1921, pp. 10—11.

註二 同上書, p. 12.

註三 同上書, pp. 8—9.

千分之 50.6，如果全國（指英格蘭和威爾斯）的兒童死亡率都這般低，那末那已死亡的半數兒童，就也活着了」。註一 我們從這段事實來看，更可以明瞭住屋的環境和人們的健康是怎樣的重要了。紐雪爾姆博士 (Dr. Arthur Newsholme) 在他的名著生命的統計 (Vital Statistics) 一書裏曾說「兒童死亡率的高低是住屋的衞生情形的最好表徵」(Infant mortality is the most sensitive index we possess of the sanitary conditions of the home)。他最後所得的結論是「照人們壽命的眼光來看，那些出生於衞生區域裏的是增長了」(From the point of view of longevity there is a "gain from being born in a healthy district.")。註二

(乙)關於德性方面 住屋問題，不但是居住者衞生上的問題，也是德性上的問題。人類固然是社交的動物，但同時有許多地方和時候人與人之間要有隔離的機會。試問在五六家偪促於一幢房子的家庭，在一間小而又擠滿了人的房間，一舉一動，都要受到旁人的注意，而無法隱避，在這種情境之下，個人應有的私密 (privacy)，怎樣可以存在？行爲的規律，又怎樣可以保持呢？若還有親戚和寄居者，那末因爲種種的不方便和不和諧的情形，「寄居禍」(lodger evil) 是更無法避免了。再加以屋內那種骯髒雜亂的情形，更容易引起居住者對於家庭的厭惡和煩惱，其結果不得不在家庭外去尋比較愉快的生活，因此而釀成種種家庭的不幸和社會的罪惡，又那裏知道它的眞正的原因所在呢！

(丙)關於經濟方面 人們的住屋爲什麼會發生不衞生和不愉快呢？因爲背後還有一個經濟原因——房租——的存在。都市工業化了，人口增加了，土地的效用擴大，地價因此而上升，結果住屋成本昂貴，房租也跟着加高了，這幾乎是近代都市的一般現象。房租加高，但是工人們的收入却有限，因爲經濟的壓迫，不得不住較廉的房屋，因此而形成所謂貧民窟，這又是近代都市不易避免的現象！房租的高低，既有這樣重大的影響，先把關於房租增減的幾條主要的原理提一提：註三

一 在一個社會裏，居民增加而住屋沒有比例的增加時，房租趨勢向上。

二 房租的加高是由於房屋的高度加高。

三 地價的高漲，是由於土地效用的擴張，而土地效用的增加，又是由於房屋高度的加高。

註一 同上書，p. 10。

註二 同上書，pp. 8—9。

註三 同上書，pp. 20—21。

四　每立方呎空間的房租的增加，是由於每間房屋的面積的減小，而每間面積的減小，又是由於房屋的加高。

五　徵課土地改良稅的不合和徵課土地漲價稅的失敗，摧殘了營造新屋的事業，因此減少了住屋的供給而使房租增加。

六　對於取締舊屋的規則未能與管理營造新屋的章程同其嚴密，使房主樂於修葺舊屋而不願意另造新屋，因此房屋的設備，在質的方面不能和房租同樣的增進。

七　若交通的便利還沒有普及全市，那末越是交通便利或接近繁盛中心的房屋，房租也越高。

上海工人住屋的一般情形　上海工人的住屋，若依建築的優劣而分，可以列爲三等：

(甲)優等住屋　這等住屋，大率爲樓房，可分爲石庫門式和東洋式兩種。第一種的大門是石庫門，進內有天井，大小自一百平方尺至二百餘平方尺不等。倘係單幢的房屋，那末樓下是客堂，有時分前後兩間，叫做樓下前客堂和後客堂；樓上也分兩間，叫做前樓和後樓。後樓往往沒有窗戶，並且須讓出地位爲前樓出入的過道，故面積小於前樓。正屋的後面，還有兩個附間，樓下是灶間，樓上是亭子間，亭子間上面是晒台，屋內並無廁所。有時爲多闢房間起見，在離地五六尺的半牆上，加一層木板，平空又添一層矮樓，約佔客堂面積三分之二，叫做搁樓。在搁樓裏的人是不能立直的，樓上有時也有搭搁樓的。第二種的東洋式樓房，大門用木板，門內並無天井，客堂前面就是街弄，內部的結構和石庫門相仿，但面積往往比石庫門爲小。

樓房的建築，往往相對毘連成行，中間空出一條狹隘的甬道，標明某里某衖，夜間置有暗淡的油燈或電燈，地下裝有溝渠，排洩污水。房屋的牆壁是磚石砌成的，屋頂用瓦覆蓋。屋內地面，大都用木板，也有用土敏土的。每屋寬廣，自四百至六百方尺，容積自四千至六千立方尺。亭子間的面積，自數十方尺至百餘方尺不等。每幢屋內裝有自來水的是很少，大都同住一衖的各戶，合用一具，也有用井水的。這等房屋的租金，每幢每月自六元以至二十餘元不等，大概照房屋的新舊，造料的優劣，面積的大小和交通的便否而定。電燈費不在內，房捐則主客各半。一幢屋內，往往四五家合住，每家所佔面積，有不到一百方尺的。

(乙)次等住屋　這等房屋，大都是舊平房，屋面和牆壁的材料，雖然和甲種相同，不過質料又差些了。窗戶很少，陽光不易透入。屋頂或破漏不堪，牆壁或東傾西斜，地面大都是泥地。這等房屋的建築，大抵是數間毘連一處，入內有二三進深的，也有只一進的。每間之內，有時用板隔成二小間，或再附搁樓一層。居住戶數，或一戶或二戶不等。有時各屋爲三面相對，一面爲

公共出入的大門，中間圍成一院落，屋內電燈和自來水的設備，大都是沒有的。每間月租在二元至四元之間。這種房屋，在浦東很可見到。四圍環境，也有惡劣不堪，和墳墓坑廁垃圾堆相毗隣，空氣的汚濁和景象的雜亂，是不難想像的。

(丙)草棚　長江以北，地瘠民貧，荐荐遍野，人民迫於生計，近年來轉輾來上海謀食的，總計不下數十萬。在本市四郊曠僻之地和蘇州河的河沿，租地結廬，生息孳長，就是這些人民的浮家泛宅了。草棚基地大都由若干棚戶聯合向地主租賃，也有地主允許他們搭蓋的，每年隨便納租金若干，在地主方面，無論納租與否，都是有利的，因爲荒僻之區，地價便宜，一經他們居住之後，不出幾年，就人煙稠密，地價自然會增高的。此等棚戶，大都家無宿糧，構結草棚，或出於告貸，或出於借印子錢，大抵一座草棚所需要的材料，僅自十數元至數十元不等，建築時無庸另僱工匠，二三天內，即可完工。草棚大率建於泥地之上，四週牆壁，或用竹籬，或用泥草碎石等混凝物，頂覆稻草，窗是大都沒有的。通常一座草棚，是一大間，長二丈，寬一丈餘，也有用蘆蓆或板壁隔成小間，前部爲爐灶和休憩之所，後部爲臥室廁所。地下沒有溝渠的設置，一遇天雨，積水是無法排洩的。總之，草棚的建築雖廉，而社會所付的代價却很大，如火災的蔓延，疾病的傳染，兒童死亡率的增高，階級仇視觀念的養成，對於個人和公衆，都有很大的影響。

工房和寄宿所　以上是就住屋的建築方面而論，若再從房主和居住者的關係而言，尙有工房和寄宿所兩種。工房是廠主——大都是紗廠——所建，專供本廠工人居住，以滬西和楊樹浦爲最多。工房大率爲樓房，但也有是平房的。工房房租較民間出租的房屋爲低廉，樓房一幢，每月房租自四元至六元不等，房捐在外；平房每間每月自二元至四元。多數工房，有水電的設備。每衖備有自來水一具，係公用性質，不另取費。電燈以取費較昂，尙未普及。每幢工房，平均住三四家不等。因爲享受租賃工房的權利者，往往把一部份房屋分租出去，博取微利，廠方往往沒有嚴密取締的章程，因此房租雖廉，但是屋內仍是很擠的。寄宿所係私人所設，或把餘屋分租出去，專供獨身工人居住。每一舖位，月納租金自三四角至六七角不等，照上述兩種房屋，每屋約住七八人至二十餘人，室中架床疊舖，擁擠不堪。

工人住屋的調查　上海全市各種工人住屋的數量，究竟有多少？平均每屋居住若干人？也是我們所希望知其梗概的，要解答這個問題，本局在民國十九年春，曾派調查員到各工人區域分區分路調查各業工人住屋的數量——龍華江灣吳淞不在內——同時並用機會抽樣法去調查每種房屋居住的人口數，歷時三月，結果見表二十五。

清查工人住屋，原不是一件容易的事，先要把那些是工人住屋，那些不是工人住屋，分別清

表二十五　上海各區工人住屋數量和平均每屋居住人數　十九年五月

住屋類別	單位	各區工人住屋數						每屋平均居住人數			
		滬東區	滬南區	滬西區	滬北區	浦東區	全市總計	男	女	童	總計
樓房(石庫門)	單幢一樓一底	4,355	515	627	4,554	261	10,312	6.08	4.08	4.02	15.08
樓房(東洋式)	單幢一樓一底	7,705	888	3,857	4,594	936	17,980	4.92	4.60	3.43	12.95
舊式平房	統間	8,089	3,275	5,094	3,705	7,563	27,726	3.58	2.90	2.32	8.80
草棚	座	3,210	1,378	3,619	8,287	3,706	20,200	2.37	2.07	1.73	6.17

楚，這當然是不能十分準確的。因爲調查的時候，決不能挨戶去問他們的職業，祇能就大概的情形而定。並且一部份工人，並不住在純粹的工人區域內，往往和其他階級混亂住着，同時工人區域內，也有非工人家庭攙雜在內。不過這兩部份居民，有互相冲消的勢力。所以我們調查的時候，只就純粹的工人區域或大多數是工人的區域裏去着手進行，雖不能說準確詳盡，只要和事實眞相，相去不遠就是了。這裏還有一點也要注意的，就是表二十五的數字，是二十一年一月二十八日以前的情形。滬市自事變之後，工人住屋焚毀者不計其數，尤其是工人住屋最多的閘北區，盡成瓦礫之場，不要說居處擁擠，竟是無家可歸了。

每屋居住的人口數，係用揀樣法得來的。滬市房屋的數量既多，這次調查每二十餘幢房屋可以有一個被揀樣的機會，代表性或尚不差。依據結果，一樓一底石庫門式的樓房，平均居住人數爲最多，約十五口；其次爲東洋式(無天井)一樓一底的樓房，平均住十三口；平房每間平均九口弱；草棚每座約住六口强。

記賬家庭的住屋情形　(甲) 住屋的大小和家庭人口　討論人口的時候，因爲各人消費需要的不同，所以把一個等成年作爲比較的標準單位。同一房間，大小不一，所以也要有一個適當的標準——標準間——方才可以確切地比較。一個人一天需多少空間，也可以試驗出來的。大概說來，一個男成年每小時須吸 16—18 立方英尺的新鮮空氣，同時每小時在肺內呼出的炭酸氣約 0.5—0.7 立方英尺。假使空氣中含有萬分之 6 的炭酸氣，那末對於身體的健康就有妨礙了。根據上面的數字來推算，那末一個成年在生理上需要住屋大小的最低限度有如下述：普通臥室至少須 600 立方英尺的空間；公共宿舍或若干人合住的房屋，至少須 1,000 立方英尺；醫院或特別需要空氣的住屋，每人至少須 1,300 立方英尺的空間。註一 若照生理的需要，那末每一成年，至少需要 1,000 立方英尺以上的空間。

上海工人房間的大小是怎樣呢？上海因地價的高漲和房租的昂貴，普通一樓一底的樓房，

註一　Kokichi Morimoto, The Standard of Living in Japan, Johns Hopkins University Studies in Historical & Political Science, 1918, pp. 122—123.

往往要隔成五六間。其中前客堂前樓的面積，比較大些。大概長寬均一丈餘，高一丈左右，後客堂後樓比較小些，進深也淺些。亭子樓的面積更小，高度也不及正面的房間，普通不過六七尺而已。各間平均，大約每間爲 1,200 立方英尺左右。

我們參酌了上面的事實，訂 32 立方公尺的空間爲一個標準間，作爲計算房屋大小的共同單位。每標準間約合 1,200 立方英尺，或長寬各 $3\frac{1}{4}$ 公尺高約 3 公尺的空間。以後計算房屋的大小，除實際間數外，再計算其容積等於標準間的數目，簡稱爲等標準間。

標準間的意義既經確定了，再看各家居住實際間數和等標準間數的情形。表二十六載明記賬家庭中，住一間(實際的)的凡 145 家，佔百分之 47.6；住兩間的 130 家，佔 42.6；住三間以上的 30 家，佔 9.8。305 家平均每家居住 1.65 間，以平均每家有 4.62 人或 3.28 等成年計算，那末平均每間約住 2.8 人或 2.0 等成年。

表二十六　按收入組平均每家居住間數的分析

收入	家數	按居住間數分組的家數					平均每家居住間數
		1 間	2 間	3 間	4 間	5 間	
$200— $299.99	62	47	14	1			1.26
300— 399.99	95	49	42	4			1.53
400— 499.99	80	32	41	6	1		1.70
500— 599.99	31	12	15	2	2		1.81
600— 699.99	25	4	12	7	2		2.28
700 及以上	12	1	6	3	1	1	2.58
總計或平均	305	145	130	23	6	1	1.65
百分數	100.0	47.6	42.6	7.5	2.0	0.3	

試再按每家居住等標準間數分組，記賬家庭中住屋在 1 個標準間以下的凡 93 家，佔百分之 30.5；住 1—1.99 標準間的 157 家，佔百分之 51.5；住 2—2.99 標準間的 47 家，佔 15.4；住 3 個標準間以上的只 8 家，佔 2.6。305 家平均每家居住 1.41 標準間，以平均每家 4.62 人計算，平均每標準間居住人口數爲 3.20 人，見表二十七。

表二十七　按收入組平均每家居住等標準間數的分析

收入	家數	平均每家居住間數	按每家居住等標準間數分組的家數					平均每家居住等標準間數
			—0.99	1—1.99	2—2.99	3—3.99	4—4.99	
$200— $299.99	62	1.26	29	30	3			1.02
300— 399.99	95	1.53	34	48	11	2		1.26
400— 499.99	80	1.70	23	46	11			1.40
500— 599.99	31	1.81	4	15	10	1	1	1.84
600— 699.99	25	2.28	3	13	7	1	1	1.88
700 及以上	1	2.58		5	5	1	1	2.61
總計或平均	305	1.65	93	157	47	5	3	1.41
百分數	100.0		30.5	51.5	15.4	1.6	1.0	

若按收入分組，那末平均每家居住間數和標準間數的多少，是隨收入的高低而增減，例如$200—299·99組平均每家住1·26間，或等於1·02標準間；$300—399·99組平均住1·53間，或等於1·26等標準間；$700及以上組平均住2·58間，或等於2·61標準間。

若按每標準間居住等成年數分組，那末每標準間居住1等成年以下的凡6家，佔百分之2·0；住1—1·99個等成年的92家，佔30·2；住2—2·99個等成年的98家，佔32·1；住3—3·99個等成年的53家，佔17·4。每標準間居住等成年數在4人以上的56家，佔百分之18·3。305家平均每標準間居住等成年數爲2·33人。每標準間居住等成年數在9人以上的，其擁擠的情形，可想而知，私密和愉快，當然更談不到了。又收入增加，雖然平均每家人數也跟着增多，但是平均每標準間居住等成年數，仍有隨收入增加而減少的傾向。例如$200—299·99組平均每標準間居住等成年數爲2·75人，$300—399·99組平均每標準間居住等成年數卽降爲2·33人，至$700及以上組，平均每標準間居住等成年數已降至最低限度，卽1·55人。可見住屋擁擠的程度和收入的多寡是成反比例的，卽收入增加，擁擠程度自然會減少，見表二十八。

表二十八　按收入組平均每標準間居住等成年數的分析

收入	家數	按每標準間居住等成年數分組的家數										平均每標準間居住等成年數
		-0·99	1-1·99	2-2·99	3-3·99	4-4·99	5-5·99	6-6·99	7-7·99	8-8·99	9-	
$200—$299·99	62		[illegible]	20	10	7	8	3	1	1		2·75
300— 399·99	95	3	47	27	22	6	3	4	2	1		2·33
400— 499·99	80		25	29	11	7	1	1	2	2	2	2·50
500— 599·99	31	2	12	9	5	2					1	2·04
600— 699·99	25		11	7	5	2						2·18
700及以上	12	1	5	6								1·55
總計或平均	305	6	92	98	53	24	12	8	5	4	3	2·33
百分數	100·0	2·0	30·2	32·1	17·4	7·9	3·9	2·6	1·6	1·3	1·0	

* 寄膳人等成年不計在內。

在美國平均每家5口或等成年3—3·5人的工人家庭，其住屋往往有四五間之多，平均每間住一人，還不到一個等成年。註一 若和上海工人的住屋情形比較，眞不啻有天淵之別！在歐洲法國和比國的工人家庭，普通住兩間，在德國住三間，英國住四五間。註二 在日本，大城中普通每家住八間(平均每間面積約92平方英尺)，小城中普通每家住房7·2間(平均每間面積爲112平方英尺)，註三 這也都是上海工人所望塵莫及的。

註一　Cost of Living in the United States, published by the U. S. Bureau of Labour Statistics. 1924。

註二　Shirras, G. F., 同前書, p. 24.

註三　Kokichi Morimoto, 同前書, pp. 116—117.

假定把上海工人的住屋狀況和國內——如北平——相較，猶覺此勝於彼。據北平社會調查所的調查，北平工人的住屋，大多數每家祇有一間，每間容積約 20 立方公尺，一家四五口，生息其間，居處的侷促，不言可喻。不僅如此，北方人喜歡睡坑，坑用磚石砌成，不能移動，冬季坑下可以生火取暖。一坑之大，幾佔全屋面積之半，因此房間內可以活動的地方更縮小了。婦女孩童，往往祇能在坑上休息和做生活，統計平均每家住 1.04 間，每間須居住 4.16 人或 3.04 等成年，住屋的擁擠，可說是無以復加了！註一

(乙)衞生的狀況　住屋內空氣和光綫的充分與否，原沒有一個確切地可以去計算的標準，如果要求在物質上可以測量的東西，那末只有用窗的多少和面積的大小來表示它的程度。表二十九載明 305 家住屋中沒有窗的凡 66 家，佔百分之 21.6；有一扇窗的 144 家，佔 47.2，平均每家窗的面積爲 0.1289 平方公尺；有二扇的 72 家，佔百分之 23.6，平均每家窗的面積爲 0.224 平方公尺；有三扇的 10 家，佔百分之 3.3，平均每家窗的面積爲 0.3288 平方公尺；有五扇及以上的 4 家，佔百分之 1.3，平均每家窗的面積爲 0.9963 平方公尺。305 家平均每家有窗 1.24 扇，其面積爲 0.1555 平方公尺(即縱橫約十六英寸)。若以平均每家住房 1.65 間計算，平均每家只有窗 0.75 扇，面積還不到 0.1 平方公尺，這樣大小的面積，當然談不到光綫的充分和空氣的流通。又記賬家庭中住樓房的平均每家有窗 1.4 扇，面積爲 0.2 平方公尺；住平房的平均每家有窗 1.1 扇，面積爲 0.09 平方公尺；大多數的草棚是沒有窗的，至多也祇有一扇，例如 17 家中，14 家是沒有窗的，其餘 3 家，也都只有一扇，如果說上海工人住屋的空氣和光綫是不充裕的，那末草棚又是其中最不充裕的了！

表二十九　記賬家庭的窗

窗數	樓房		平房		草棚		總計	
	家數	平均每家窗的面積(平方公尺)	家數	平均每家窗的面積(平方公尺)	家數	平均每家窗的面積(平方公尺)	家數	平均每家窗的面積(平方公尺)
無	26		26		14		66	
1	98	.1557	43	.0738	3	.0409	144	.1289
2	44	.2637	28	.1616			72	.2240
3	6	.3678	4	.2703			10	.3288
4	7	.6681	2	.4062			9	.6099
5 及以上	4	.9963					4	.9963
總計或平均	185	.2038	103	.0931	17	.0072	305	.1555

地面的燥濕，和住屋的衞生也很有關係的。305 家住屋地面用木板的凡 190 家，佔百分之 62.3；用土敏土的 41 家，佔 13.4；用泥地的 74 家，佔 24.3。木板的地面比較最乾燥，大

註一　Tao. L. K., 同前書, pp. 106—107.

多爲樓房；士敏土的地面差於木板，大多爲樓房內的亭子樓；泥地最差，但過半數的舊式平房和草棚完全是泥土的，參閱表三十。

表三十　記賬家庭的地面

房屋類別	木板	士敏土	泥地	總計家數
樓房	162	23		185
平房	28	18	57	103
草棚			17	17
總計家數	190	41	74	305
百分數	62.3	13.4	24.3	100.0

現在再看記賬家庭的用水，上海工人家庭煮飯和沖茶的水，都從熟水店（俗稱老虎灶）裏買來的，每杓五文。至於洗濯用水的來源，有自來水井水和河水三種。記賬家庭中用自來水的凡 207 家，佔百分之 67.9，用井水的 43 家，佔 14.1，用河水的 55 家，佔 18.0．詳見下表：

表三十一　記賬家庭的用水

房屋類別	自來水	井水	河水	總計家數
樓房	157	24	4	185
平房	50	18	35	103
草棚		1	16	17
總計家數	207	43	55	305
百分數	67.9	14.1	18.0	100.0

上表有幾點是值得注意的：用自來水的，大多是住樓房的家庭，至於草棚的住戶，就沒有一家能享到這個便利，就是用自來水的樓房住戶，並不是每家有一具自來水龍頭，大都里內各戶公用一具。自來水費，已算在房金之內，由房主付的，平房的住戶，有自來水的約佔半數，其餘用井水或河水。

最後，我們還當注意住屋內廁所和廚房的情形。上海馬路上公共廁所極少，但試再就室內的情形來看，寢所廁所，同在一室，不獨工人家庭如此，即中等社會家庭也莫不如此。至於裝有自來水管的盥洗室，則非富有之家莫辦了。

表三十二　記賬家庭的烹飪處所

房屋類別	有公用灶間	在房內烹飪	總計家數
樓房	157	28	185
平房	20	83	103
草棚	1	16	17
總計家數	178	127	305
百分數	58.4	41.6	100.0

上海住樓房的各工人家庭，大抵有一個灶間，數家公用。至於平房和草棚的住戶，大多數是沒有公用灶間的，所以不得不在室內烹飪。記賬家庭中有公用灶間的凡 178 家，佔百分之 58·4，在房內烹飪的 127 家，佔百分之 41·6，詳見表三十二。

房租 工人的住屋既這樣的狹隘，環境這樣的不良，但工人們每年所付的房金，平均每家却要 $37·83 之多，或平均每月 $3·15。若按每家全年房租支出分組，記賬家庭全年所付房金在 $20·00 以下的 28 家，佔百分之 9·2；$20—29·99 的 71 家，佔 23·3；$30—39·99 的 103 家，佔 33·8；$40—49·99 的 49 家，佔 16·1；$50—59·99 的 15 家，佔 4·9；$60 以上以至 $110 的 39 家，佔 12·7。又各家房租支出隨收入增加而見多。例如 $200—299·99 組平均每家全年支出房租 $28·16，$300—399·99 組平均每家 $34·23，$400—499·99 組平均每家 $36·59，至 $700 及以上一組平均每家支出房租 $59·43，比最少的約高出一倍，閱表三十三。

平均每家全年房租支出，已如上述，再看按收入組平均每間每等標準間每人和每等成年的房金支出是怎樣。依據表三十四，平均每間全年房金爲 $22·93，或每月 $1·91；平均每標準間 $26·27，或每月 $2·19；平均每人 $8·19，或每月 $0·68；平均每等成年 $11·06，或每月 $0·92。若按收入分組，那末平均每間和每標準間的全年房租，並不因收入的多少而有顯著的變動，但平均每人和每等成年的全年房租，實隨收入見增而有增加的趨勢。例如 $200—299·99 組平均每人全年支出房金 $7·13，每等成年 $9·88；$300—399·99 組平均每人 $8·21，每等成年 $11·08；至 $700 及以上一組平均每人 $10·23，每等成年 $13·41。這因爲每人所佔住屋的容積是隨收入而增加的。可知收入增加，工人們的住屋，自然會跟着改善的。

住屋情形的改善 上海交通便利，工商業發達，人口稠密，地價增加，因此建築物的租金，也跟着增高。據本局的調查，若把民國十五年的房租爲 100，到民國二十年已漲起了百分之 34·5。註一 求過於供，價必騰貴，從事地產者的操縱和房主的居奇壟斷，雖其主因，尚不能認爲增加房租的唯一理由。僅事抑制租價，非但無裨實際，反足引起糾紛。例如歐戰發生後，房屋的建築，幾完全停頓，住屋缺乏，租金日貴，於是在 1915 年八月二十五日的帝俄時代，莫斯科警察廳頒布命令，限制房主自由加租，結果是失敗了。房主相繼減少對於房屋上的費用：如廢物和雪，任其堆積；租戶燃料，減少供給（俄國屋主，須供給燃料，以北俄爲最），裁汰一部分管理修葺房屋的職員，以期節省。註二 所以房租雖沒有增加，在質的方面是降低了，其後在 1917

註一 參閱上海市工人生活費指數，民國十五年至二十年，中華書局，民國二十一年。

註二 蘇俄住宅問題概觀，勞工問題叢書，上海調查貨價處編，民國十六年。第617頁。

表三十三　按收入組記賬家庭平均每家全年支出房租的分析

收入	家數	按支出房租數分組的家數 -$20	20-29.99	30-39.99	40-49.99	50-59.99	60-69.99	70-79.99	80-89.99	90-99.99	100-110	平均每家支出房租
$200— $299.99	62	12	22	23	5							$28.16
300— 399.99	95	9	24	37	16	6	1	2				34.23
400— 499.99	80	7	19	26	18	1	7	2				36.59
500— 599.99	31		3	10	5	2	5	3	2	1		49.29
600— 699.99	25		3	4	4	4	5	2	1		2	54.83
700 及以上	12			3	1	2	2	2	1		1	59.43
總計或平均	305	28	71	103	49	15	20	11	4	1	3	37.83
				百分數								
$200— $299.99	100.0	19.3	35.5	37.1	8.1							
300— 399.99	100.0	9.5	25.3	39.0	16.8	1.0	2.1	6.3				
400— 499.99	100.0	8.7	23.7	32.5	22.5	1.3	8.8	2.5				
500— 599.99	100.0		9.7	32.2	16.1	6.5	16.1	9.7	6.5	3.2		
600— 699.99	100.0		12.0	16.0	16.0	16.0	20.0	8.0	4.0		8.0	
700 及以上	100.0			25.0	8.3	16.7	16.7	16.7	8.3		8.3	
總計或平均	100.0	9.2	23.3	33.8	16.1	4.9	6.5	3.6	1.3	.3	1.0	

表三十四　按收入組平均每家每間及每標準間每人和每等成年全年房租的支出

收入	家數	平均每家人口	平均每家居住等成年	房間數	等標準間	平均每年房租 每家	每間	每標準間	每人	每等成年
$200— $299.99	62	3.95	2.81	1.26	1.02	$ 28.16	$ 22.35	$ 26.07	$ 7.13	$ 9.88
300— 399.99	95	4.17	2.94	1.53	1.26	34.23	22.37	24.28	8.21	11.08
400— 499.99	80	4.89	3.50	1.70	1.40	36.59	21.52	27.10	7.48	10.14
500— 599.99	31	5.19	3.75	1.81	1.84	49.29	27.23	26.50	9.50	12.26
600— 699.99	25	5.92	4.10	2.28	1.88	54.83	24.05	29.48	9.26	12.96
700 及以上	12	5.75	3.85	2.58	2.61	59.43	23.03	25.24	10.23	13.41
總計或平均	305	4.62	3.28	1.65	1.41	37.83	22.93	26.27	8.19	11.06

—1921 年蘇維埃政府時代，採土地建築權和市鎮住宅的收歸市有，强制遷移和工人有特殊權利等制度。在這個時候制度尚未周密，非特不能改善城市的居住狀況，並增加其困難。因爲强制遷移的制度實行後，居戶對房屋不加愛護，土地與建築收歸市有後，私人不復建築，地方政府因捐稅收入減少，也無力顧及住屋的增建。因此住宅問題，仍舊不能解決。註一 工人們以勞力所得微薄的工資，供給生活上的需要已時虞不給，居處的改善，更非他們所能顧到。本市工人住宅的亟待設法解決，是無庸疑義了。

(甲)治標 治標的第一步，是設立房租審議委員會，由地方政府代表市民代表和專家若干人組織之，其職司爲：(1) 依客觀的標準，——地價建築取息等等——審定其租金是否適當；(2) 評議因租價而發生的爭執，以期消弭房主的操縱，和房客的任意請求減租等等，務使兩得其平。

治標的第二步辦法是二房東所取的房租，超過某限度時，地方政府得取締之，本市市民的住屋，大都是從二房東間接租來的，所以住戶在原來的房金上又加了一層二房東的剝削。此等二房東，本市到處皆是。取締的目的，在使大多數的市民逐漸能直接向房主租屋，期輕負擔。

(乙)治本 據上海公共租界工部局的調查，界內中外居民在 1925 年爲 846,226 人，至 1929 年增至 1,007,868 人。五年之中，人口約增五分之一，而住屋的供給，遠不如人口之速，租金日增，自在意中。治本的方法，當以調整住屋的供求爲不易之原則，下列三端，是可以同時舉辦的：

(一)徵收荒廢稅 考本市從事地產業者，往往購入素地（卽未經建築者），沉機觀變，待價而沽，結果以有用之地，任其荒廢。但人口日增，居屋的需要增加而居屋的供給落後，結果地價驟漲，房租增加，獲利者爲少數的投機家，而受其害者却是大多數的市民。今欲調整住屋的供求，必先嚴厲取締純以謀利爲目的的地產投機，凡把持空地而不建房屋於其上者，徵收空地稅或荒廢稅，用累進法逐年增加。非如此無以限制地產業的投機，而使空地入於投資建造者之手。新屋增加，房租自能趨於穩定或下降。

(二)獎勵建築 獎勵建築和徵收荒廢稅是應該同時並進的。如購地的動機，確爲建造房屋者，得免徵地價稅；房屋完工後，若干年內，免徵其房捐。其餘如設計方面運輸方面，給以種種的便利，務使投資者聞風興起，而弗使裹足不前，房屋的供給增加，房租問題也可跟着解決了。

(三)提倡關於住屋的合作事業 末了應當提倡組織住屋建造的合作社，以謀平民住宅問

註一 同上書，第 2 頁。

題的最後解決。關於組織住屋合作社的性質，可分兩種：一種是用「合作」的方法，直接向房主租賃若干房屋，分配於各社員，以免二房東的剝削；其次是以「合作」的方法，自己購地一或租地——建屋，分配於各社員。二者方法雖異，而其減輕居住者的負擔則一。

七　衣着燃料和雜項

衣着類　記賬家庭的衣着類費用，平均每家全年只 $34.01，或平均每等成年 $10.37，其中布疋費佔 54.00，衣服費佔 11.40，被褥費佔百分之 2.02，其他如鞋襪帽等佔 32.58。每人全年衣着費，祇够中上社會的人購買皮鞋一雙。因此他們採購的衣料，不得不選價值最廉的棉布等類，或到提莊去買現成的衣服，以求緊縮至最低限度。至於價值昂貴的絲織品和毛織品，購買家庭，不及十分之一，且爲量極微。此次所查的家庭，全年購買衣着品的量值，見表三十五。

布疋　衣着品分布疋衣服被褥和其他四目。布疋目中消費最多的計有：粗布，細布，條格布（卽條子布本廠布洋線布的統稱），斜紋布，花標布，竹布（亦稱漂布），線呢（假嗶吱假直貢呢亦入此類），絨布，綢（假毛葛入此類，卽線和人造絲的交織品）等數種。305 家平均每家全年買粗布 5.86 尺，每尺價約 $0.11；細布 18.42 尺，每尺 $0.13；條格布 19.42 尺，每尺 $0.12；斜紋布 3.04 尺，每尺 $0.14；花標布 8.59 尺，每尺 $0.13；竹布 4.83 尺，每尺 $0.16；線呢 10.30 尺，每尺 $0.24；絨布 4.77 尺，每尺 $0.16；綢 2.56 尺，每尺 $0.50。其中以綢的價值比較貴些，光澤鮮豔，質地厚實，工人們充作上等衣料。其餘棉布，每尺不過二角左右，這是他們平日所着的衣料。至於綢緞，線春，縐紗，眞絲毛葛，眞嗶吱，香雲紗等品，每尺售價在一元左右，購買的未始沒有，不過佔極少數，各家所購平均不過三四寸（如綢緞線春），有的還不到一寸（如眞絲葛眞毛葛）。據此看來，奢華兩字，除極少數外，在工人的衣着品中，是够不上的。

衣服　布疋而外，工人們也有買現成衣服的，而以單短衫褲，衞生衫褲，汗衫，小孩衣褲等數種爲最多，然購買的家庭也不過十之一二而已。305 家平均每家全年買單短衫 0.275 件，單褲 0.279 件，衞生衫褲 0.184 件，汗衫 0.266 件，小孩單衣褲 0.111 件。其餘買皮袍子皮統子的只有 7 家，買呢大衣的 6 家，這僅限於經濟寬裕的家庭，非大多數工人財力所能辦到的。

被褥　被褥目中，以購買被胎被面和蓆的爲最多，不過購買的家數並不多，305 家中購蓆的只 53 家，購被面的 17 家，購被胎的 10 家。其餘如購枕帳線毯被單等件的，不到 10 家。305 家全年被褥費只 $0.69。

其他衣着　其他衣着品中，消費最多的計有：鞋襪帽棉花面巾等等。帽子則以便帽爲最多，呢帽和童帽次之；鞋子以男鞋爲最多，皮鞋套鞋次之；襪以買男襪的爲最多，女襪次之。305 家中買絲襪的有 15 家，佔百分之 5，每雙價約一元左右。工人們的衣服，大都是購買布疋，由裁縫裁製的。鞋子除時式男鞋女鞋和皮鞋在鋪中購買外，日常所穿的，大率是婦女們自

表三十五　按衣着品分目平均每家和每等成年全年購買衣着品量值的分析

衣着類目	單位	三〇五家購買家庭平均每家消費數量	三〇五家購買家庭平均每等成年消費數量	三〇五家購買家庭平均每家消費支出	三〇五家購買家庭平均每等成年消費支出	購買家數	對三〇五家的百分數	每家平均數量	每家平均消費支出
衣着類				$34.010	$10.369	305	100.00		$34.010
布疋目				18.366	5.599				
白粗布	尺	2.885	.880	.292	.089	46	15.08	19.131	1.932
藍白粗細布	尺	2.977	.908	.367	.112	67	21.97	13.553	1.665
藍白細細布	尺	1.261	.384	.179	.055	25	8.20	15.385	2.169
細洋布	尺	1.859	.567	.279	.085	26	8.52	21.812	3.258
條子布	尺	15.295	4.663	2.084	.635	190	62.30	24.553	3.346
本廠線呢	尺	7.012	2.138	.915	.279	115	37.71	18.598	2.424
洋紋布	尺	9.557	2.914	1.008	.307	116	38.03	25.129	2.647
斜紋布	尺	2.849	.869	.370	.113	61	20.00	14.243	1.852
花標布	尺	3.038	.926	.439	.134	70	22.95	13.238	1.909
白竹布	尺	8.586	2.618	1.148	.350	137	44.92	19.115	2.554
藍竹布	尺	3.267	.996	.518	.158	72	23.61	13.841	2.185
色丁布	尺	1.565	.477	.201	.080	36	11.80	13.262	2.196
陰丹士林布	尺	.895	.273	.117	.036	16	5.25	17.069	2.219
雜色棉布	尺	.210	.064	.037	.011	5	1.64	12.798	2.216
自由布	尺	1.463	.446	.184	.056	44	14.43	10.141	1.270
愛國布	尺	.603	.184	.115	.035	18	5.90	10.222	1.941
土布	尺	.066	.020	.011	.003	2	.66	10.000	1.660
夏布	尺	3.465	1.056	.280	.085	53	17.38	19.939	1.611
十字布	尺	.364	.111	.080	.024	6	1.97	18.500	4.092
洋府綢	尺	.152	.046	.028	.009	11	3.61	4.227	.779
洋板綾	尺	1.288	.393	.464	.141	37	12.13	10.616	3.823
斜羽綢	尺	.189	.058	.038	.012	7	2.30	8.228	1.677
零碎布	尺	.154	.047	.038	.012	4	1.31	11.750	2.900
絨布	尺			.028	.009	40	13.11		.210
駱駝絨	尺	4.772	1.455	.774	.236	108	35.41	13.477	2.186
香雲紗	尺	.349	.106	.230	.070	11	3.61	9.682	6.383
麻紗	尺	.666	.203	.837	.255	23	7.54	8.835	11.105
洋紗	尺	.831	.253	.215	.066	22	7.21	11.525	2.979
羽毛紗	尺	3.703	1.129	.519	.158	81	26.56	13.944	1.955
眞絲葛	尺	.274	.084	.104	.032	11	3.61	7.591	2.871
人造絲葛	尺	.097	.030	.074	.023	7	2.30	4.213	3.237
眞毛葛	尺	.838	.255	.356	.109	24	7.87	10.646	4.522
假毛葛	尺	.067	.020	.077	.023	3	.98	6.833	7.833
絺	尺	1.862	.568	.905	.276	51	16.72	11.135	5.412
綾	尺	.698	.213	.385	.117	19	6.23	11.203	6.177
春紗	尺	.487	.148	.431	.131	11	3.61	13.500	11.939
綢	尺	.118	.036	.112	.034	3	.98	12.000	11.400
線呢	尺	.433	.132	.255	.078	12	3.93	11.017	6.493
假嘩嘰	尺	3.776	1.151	.843	.257	83	27.21	13.875	3.100
假直貢嘩嘰	尺	2.048	.624	.489	.149	50	16.39	12.492	2.682
眞嘩嘰	尺	4.478	1.365	1.119	.341	117	38.36	11.673	2.918
洋緞	尺	.517	.158	.452	.138	17	5.57	9.268	8.109
緞布	尺	.702	.214	.205	.063	40	13.11	5.351	1.565
褲腰布	條尺	.308	.094	.338	.103	10	3.28	9.400	10.300
其他布疋	尺	.141	.043	.013	.004	27	8.85	1.593	.145
		1.516	.462	.353	.108	41	13.44	11.280	2.624
衣服目				3.873	1.181				
皮統子	件	.020	.006	.360	.110	5	1.64	1.200	22.300
雨衣	件	.007	.002	.023	.007	2	0.66	1.000	3.669
皮袍	件	.007	.002	.160	.049	2	0.66	1.000	24.500
女短襖	件	.007	.002	.065	.020	2	0.66	1.000	10.100
單衫褲	條	.275	.084	.307	.094	54	17.70	1.556	1.732
單長衫	件	.279	.085	.320	.098	53	17.38	1.604	1.857
夾袍	件	.043	.013	.190	.058	12	3.93	1.083	4.897
夾褲	條	.039	.012	.100	.030	12	3.93	1.000	2.633
夾衫	件	.049	.015	.107	.033	14	4.59	1.071	2.325
棉袍	件	.030	.009	.150	.046	9	2.95	1.000	5.222
棉褲	條	.030	.009	.057	.017	9	2.95	1.000	1.922
棉襖	件	.039	.012	.070	.021	9	2.95	1.333	2.430
		.036	.011	.137	.042	10	3.28	1.100	4.170

表三十五　按衣着品分目平均每家和每等成年購買衣着品量值的分析續

衣着類目	單位	三〇家平均每家消費數量	三〇家每等成年消費數量	五家平均每家消費支出	五家每等成年消費支出	購買家數	對三〇五家的百分數	購買家庭平均每家消費數量	購買家庭每家消費支出
呢大衣	件	.020	.006	$.298	$.091	6	1.97	1.000	$15.167
學生服	套	.023	.007	.070	.021	6	1.97	1.167	3.587
絨線衫	件	.062	.028	.280	.085	19	6.23	1.474	4.545
襯衣	件	.184	.056	.220	.067	44	14.43	1.273	1.529
汗衫	件	.266	.081	.140	.043	52	17.05	1.558	.819
女單褲	條	.066	.020	.080	.024	17	5.57	1.176	1.457
女單襪	件	.030	.009	.060	.018	8	2.62	1.125	2.294
女夾褲	條	.020	.006	.070	.020	5	1.64	1.200	4.394
女夾襪	件	.013	.004	.058	.018	3	.98	1.333	5.923
女棉褲	條	.023	.007	.089	.027	5	1.64	1.400	5.430
女棉襪	件	.010	.003	.047	.014	2	.66	1.500	7.100
單旗袍	件	.010	.003	.019	.006	3	.98	1.000	1.933
夾旗袍	件	.007	.002	.026	.008	2	.66	1.000	4.000
棉旗袍	件	.010	.003	.040	.012	3	.98	1.000	4.133
其他女衣着	件	.007	.002	.010	.003	2	.66	1.000	1.500
小孩單衣	件	.111	.034	.077	.023	26	8.53	1.308	.899
小孩夾衣	件	.007	.002	.007	.002	1	.33	2.000	2.000
小孩棉衣	件	.016	.005	.018	.005	2	.66	2.500	1.082
小孩單長衫	件	.003	.001	.003	.001	1	.33	1.000	1.000
其他小孩衣着				.215	.066	40	13.11		1.641
鞍褥目				**.685**	**.209**				
被胎	條	.036	.011	.131	.040	10	3.28	1.100	4.010
被褥面	條	.039	.012	.147	.045	8	2.62	1.500	5.586
被單	條	.059	.018	.097	.030	17	5.57	1.059	1.736
帳子頂	頂	.010	.003	.019	.006	3	0.98	1.000	1.900
枕頭	個	.026	.008	.102	.031	7	2.30	1.143	4.429
蓆	條	.052	.016	.023	.007	9	2.95	1.778	.784
線毯	條	.020	.006	.123	.038	53	17.38	1.396	.706
				.044	.013	5	1.64	1.200	2.710
其他目				**11.682**	**3.379**				
呢帽	頂	.098	.030	.283	.086	27	8.85	1.111	3.182
便帽	頂	.348	.106	.346	.105	79	25.90	1.342	3.182
草帽	頂	.174	.053	.224	.068	48	15.74	1.104	1.406
女童帽	頂	.085	.026	.090	.027	26	8.52	1.000	1.034
呂宋帽	頂	.338	.103	.224	.068	71	23.28	1.451	.962
皮帽	頂	.046	.014	.046	.014	10	3.28	1.400	1.342
男鞋	雙	.003	.001	.008	.002	1	.33	1.000	2.000
女童鞋	雙	1.118	.341	1.669	.509	157	51.48	2.172	3.242
套鞋	雙	.272	.083	.336	.102	57	18.69	1.456	1.793
皮鞋	雙	.230	.070	.131	.040	43	14.10	1.628	.919
草鞋	雙	.466	.142	.517	.158	96	31.48	1.479	1.639
跑鞋	雙	.167	.051	.577	.176	43	14.10	1.186	4.092
男女童襪	雙	2.295	.700	.084	.026	24	7.87	29.167	1.049
絲襪	雙	.010	.003	.012	.004	3	.98	1.000	1.100
毛襪	雙	3.948	1.204	.936	.285	252	82.62	4.778	1.133
襪帶	付	.931	.284	.229	.070	115	37.71	2.470	.607
鞋底	雙	.823	.251	.092	.028	102	33.44	2.461	.275
鞋面料子	雙	.089	.027	.083	.025	15	4.92	1.800	1.688
鞋襯	雙	.013	.004	.003	.001	2	.66	2.000	.402
鞋帶	付	.161	.049	.016	.005	40	13.12	1.225	.126
鞋底	雙	.016	.005	.023	.007	5	1.64	1.000	1.375
鞋面料子	雙	.052	.016	.007	.002	13	4.26	1.231	.156
手工				1.276	.389	252	82.62		1.544
染花				.201	.061	143	46.89		.426
線	斤	1.261	.384	.056	.017	73	23.93		.234
紗				.025	.008	14	4.59		.551
線	隻	.866	.264	.140	.043	66	21.64		.648
紗				.637	.194	164	53.77	2.345	1.184
線				.054	.016	139	45.57		.119
絨				.110	.034	113	37.05	2.336	.297
				.656	.200	92	30.16		2.173

表三十五　按衣着品分目平均每家和每等成年購買衣着品量值的分析續

衣着類目	單位	三〇五家購買家庭平均每家消費數量 平均每家	三〇五家購買家庭平均每家消費數量 每等成年	三〇五家購買家庭平均每家消費支出 平均每家	三〇五家購買家庭平均每家消費支出 每等成年	購買家數	對三〇五家的百分數	平均每家消費數量	平均每家消費支出
絲線				$.072	$.022	143	46.89		$.153
西巾	條	2.338	.713	.317	.097	249	81.64	2.863	.388
手帕	方	.151	.046	.021	.006	36	11.80	1.278	.178
圍巾	條	.039	.012	.072	.022	10	3.28	1.200	2.184
手套	雙	.092	.028	.055	.017	24	7.87	1.167	.693
鈕扣				.035	.011	75	24.59		.144
絲邊				.049	.015	60	19.67		.244
縫工				1.315	.401	143	46.89		2.854
其他				.055	.017	37	12.13		.452

做的，因此其他目中有棉花毛絨線鞋料木紗上鞋子裁縫工資等一類的支出。

二十四個家庭全部衣着的檢點　我們試詳細地調查上海工人家庭的衣着品，便不難明瞭工人們衣着不周的情形了！本局曾用揀樣法調查 24 個記賬家庭的衣着，這些家庭，每家至少有夫妻子女四口，平均每家全部的衣着品估計祇值 $116.64。其中被褥佔百分之 16.7，衣服佔 73.6，其他佔 9.7。在被褥目中，有帳子的只 17 家，24 家平均每家祇有帳子 1.2 頂；有枕頭的

表三十六　平均每家全部衣着品的分析*

品目	數量	單位	購置家數	對二四家的百分數	平均每家所有件數	估計每件平均價值 原先	估計每件平均價值 現在	平均每家所有衣着品價值
衣着品								$116.644
被褥目								19.435
線毯	6	條	4	16.67	.250	$2.750	$1.167	.292
被單	15	條	8	33.33	.625	2.047	1.187	.742
蓆	8	條	5	20.83	.333	.775	.438	.146
帳子	29	頂	17	70.83	1.208	5.800	3.466	4.187
枕頭	22	個	8	33.33	.917	.850	0.429	.393
棉被	96	條	24	100.00	4.000	5.850	3.419	13.675
衣服目								85.822
披風	1	件	1	4.17	.042	1.400	1.200	.050
皮馬掛	1	件	1	4.17	.042	15.000	10.000	.417
大衣	2	件	2	8.33	.083	13.000	6.000	.498
男皮襖	1	件	1	4.17	.042	8.000	2.000	.083
女皮袍	9	件	6	25.00	.375	18.722	10.833	4.062
皮絨線馬子	7	件	6	25.00	.292	35.500	24.643	7.187
女馬甲	21	件	10	41.67	.875	4.924	3.548	3.104
馬甲	2	件	2	8.33	.083	1.750	.750	.062
線衫	5	件	4	16.67	.208	1.060	.680	.141
旗袍	4	件	3	12.50	.167	2.025	1.275	.212
汗衫	28	件	10	41.67	1.167	5.050	3.425	3.996
馬掛	12	件	5	20.83	.500	.758	.475	.237
棉袍	2	件	2	8.33	.083	2.000	1.200	.100
棉襖	43	件	20	83.33	1.792	7.184	4.981	8.925
棉褲	49	件	21	87.50	2.042	2.541	1.388	2.833
夾袍	45	條	20	83.33	1.875	2.287	1.267	2.375
夾襖	19	件	10	41.67	.792	7.932	5.132	4.062
夾褲	48	件	23	95.83	2.000	2.429	1.746	3.492
單長衫	45	條	20	83.33	1.875	2.313	1.638	3.071
單短衫	35	件	16	66.67	1.458	4.186	2.724	3.972
	195	件	24	100.00	8.127	1.209	.695	5 648

表三十六　平均每家全部衣着品的分析續

品目	數量	單位	購置家數	對二四家的百分數	平均每家所有件數	估計每件平均價值 原先	估計每件平均價值 現在	平均每家所有衣着品價值
單衛生棉褲	188	條	24	100.00	7.833	$1.225	$.734	$5.748
單衛生棉衫	9	件	7	29.17	.375	1.622	.867	.325
女棉襖	55	件	22	91.67	2.292	2.785	1.403	3.215
女棉褲	47	條	21	87.50	1.958	2.036	1.135	2.223
女夾襖	52	件	21	87.50	2.167	2.890	1.750	3.792
女夾褲	44	條	18	75.00	1.833	2.139	1.300	2.383
女單衫	180	件	22	91.67	7.500	1.503	.926	6.944
女單褲	170	條	22	91.67	7.083	1.398	.894	6.331
女裙	2	條	2	8.33	.083	5.000	4.000	.333
其他目								11.387
手巾	4	雙	3	12.50	.167	1.075	.513	.085
褲帶	7	條	3	12.50	.292	1.071	.643	.187
襪帶	1	副	1	4.17	.042	1.000	.600	.025
草帽	1	頂	1	4.17	.042	.100	.080	.003
便帽	7	頂	6	25.00	.292	1.786	1.357	.396
呢帽	19	頂	12	50.00	.792	0.908	.534	.423
皮鞋	22	雙	13	54.17	.917	3.014	1.709	1.567
釘鞋	35	雙	15	62.50	1.458	2.871	1.566	2.283
男女套鞋	9	雙	6	25.00	.375	2.011	1.067	.400
男女布鞋	98	雙	24	100.00	4.083	.996	.609	2.487
襪	78	雙	23	95.83	3.250	.519	.317	1.031
襪	96	雙	24	100.00	4.000	.252	.147	.587
襪	87	雙	22	91.67	3.625	.212	.125	.454
女套鞋	33	雙	18	75.00	1.375	1.182	.694	.954
女絲帽	11	頂	8	33.33	.458	1.000	.582	.267
毛襪	2	雙	1	4.17	.083	1.300	1.000	.083
巾	45	條	16	66.67	1.875	.133	.083	.155

* 抽樣調查二十四家的衣着品的結果。

8 家，平均每家還不到一個枕頭；有棉被的 24 家，平均每家祇棉被 4 條。又衣服目中，平均每家祇有棉袍 1.8 件，棉襖 2 件，棉褲 1.9 條，夾袍 0.8 件，夾襖 2 件，夾褲 1.9 條，單長衫 1.5件，單短衫 8.1 件，單褲 7.8 條。如果家中有父子二人，每人祇有棉襖 1 件，夾襖 1 件，單短衫 4 件，單褲 4 條；至於棉袍夾袍單長衫等，每人還不到一件，更說不到什麼替換的衣服。

若把全部衣服價值按家屬人口分析，則屬於公用的值 $19.59，佔百分之 16.8；屬於夫的值 $40.60，佔百分之 34.8；屬於妻的值 $25.03，佔 21.5；屬於子的值 $16.75，佔14.4；屬於女的值 $11.95，佔 10.2；屬於其他的值 $2.72，佔 2.3，列表如下：

表三十七　平均每家按家屬衣着品價值的估計*

	公用	夫	妻	子	女	其他	總計
估計價值	$19.59	40.60	25.03	16.75	11.95	2.72	116.64
百分數	16.8	34.8	21.5	14.4	10.2	2.3	100.0

* 抽樣調查 24 家的分析。

若按收入多寡分組，平均每家全年衣着費用隨收入加增而見高，(見表三十八)，例如$ 200—299.99 的一組，平均每家全年衣着費爲 $20.80，$300—399.99 的一組，平均 $24.69；至

表三十八　按收入組記賬家庭平均每家和每等成年全年各目衣着費用的分析

收入	家數	平均每家家屬人口	平均每家家屬每等成年	衣着類消費價值總計 每家	衣着類消費價值總計 每等成年	被 每家	被 每等成年	褥 每家	褥 每等成年	衣服 每家	衣服 每等成年	布疋 每家	布疋 每等成年	其他 每家	其他 每等成年
$200— $299.99	62	3.95	2.81	$20.80	$7.40	$.38	$.13	$1.92	$.68	$11.32	$4.03	$7.18	$2.56		
300— 399.99	95	4.17	2.94	24.69	8.40	.59	.20	2.62	.89	12.84	4.37	8.64	2.94		
400— 499.99	80	4.89	3.50	34.65	9.90	.44	.13	4.73	1.35	18.83	5.38	10.65	3.04		
500— 599.99	31	5.19	3.75	47.96	12.80	.66	.18	4.91	1.31	27.63	7.37	14.76	3.94		
600— 699.99	25	5.92	4.10	59.18	14.43	.49	.12	5.36	1.31	31.91	7.78	21.42	5.22		
700 及以上	12	5.75	3.85	83.38	21.66	5.12	1.33	12.35	3.21	43.38	11.27	22.53	5.85		
總計或平均	305	4.62	3.28	34.01	10.37	.69	.21	3.87	1.18	18.37	5.60	11.08	3.38		
				百分數											
$200— $299.99	20.3			100.00	100.00	1.83	1.83	9.23	9.23	54.42	54.42	34.52	34.52		
300— 399.99	31.2			100.00	100.00	2.39	2.39	10.61	10.61	52.01	52.01	34.99	34.99		
400— 499.99	26.2			100.00	100.00	1.27	1.27	13.65	13.65	54.34	54.34	30.74	30.74		
500— 599.99	10.2			100.00	100.00	1.38	1.38	10.24	10.24	57.61	57.61	30.77	30.77		
600— 699.99	8.2			100.00	100.00	.83	.83	9.06	9.06	53.92	53.92	36.19	36.19		
700 及以上	3.9			100.00	100.00	6.14	6.14	14.81	14.81	52.03	52.03	27.02	27.02		
總計或平均	100.0			100.00	100.00	2.03	2.03	11.38	11.38	54.01	54.01	32.58	32.58		

$700及以上的一組,其平均每家全年費用,增至 $83.38, 比收入最低的一組高出四倍以上。又收入增加非但平均每家衣着費跟着增加,就是平均每等成年的衣着費也隨之加高。例如 $200—299.99, 的一組,平均每等成年全年衣着費爲 $7.40, $300—399.99 的一組,平均爲 $8.40,至 $700 及以上的一組,平均每等成年全年增至 $21.66, 比收入最低的一組高出三倍。收入增加,工人們的衣着費用自然也較寬裕,至於衣着類中被褥衣服布疋和其他各目費用的比例,並不隨收入的多少而有顯著的變動。

燃料類 上海工人因居處的擁擠,煤油柴爿廢木柴等,佔地較少,遂成爲他們最適宜的燃料了。煤油除充烹飪食物之外,還用來點燈。據本局的調查, 305 家中,點煤油燈的有 274 家,佔百分之 89.8, 點電燈的和曾點電燈的只 38 家,所以煤油的消費值,在燃料中爲第一。305 家平均每家全年消費煤油 88.57 斤 (見表三十九), 或平均每月消費 7.38 斤,每斤價約 $0.08; 柴爿 117.9 顆(每顆重約 2.5 斤),或每月約 10 顆,每顆價約 $0.056; 廢木柴 421.04 斤,或每月 35.1 斤,每百斤價約 $1.36; 煤 189.09 磅,或每月 15.76 磅,每百磅價約 $1.35; 花箕柴 158.10 斤,或每月 13.2 斤,每百斤價約 $1.07; 稻柴 175.08 斤,或每月 14.6 斤,每百斤價約 $0.66; 其餘各種燃料的消費量不多。用煤油爲燃料的,必須用煤油爐或打汽爐,每隻價約五元左右,佔地有限,使用便利,每日約需煤油半斤,值僅四分左右。又點電燈的,每月約需一元,點煤油燈的,每月僅需六角左右,所以煤油又爲工人通用的燈油。近年以金價高漲,煤油價格騰貴,影響他們的生計不淺。使用柴爿廢木柴花箕柴,則須置備泥爐或木灶,柴爿大都是浙江山中的松樹,火力强而耐久。工人家庭所用的煤,大抵係細子煤或次煤 (卽從煤屑中檢出的生煤),價錢比較便宜。工人家庭中很多用煤爐煮食物和水的,每日所需,約值八分,冬季兼可取暖。

表三十九 平均每家全年燃料的消費量和支出

燃料品目	單位	三〇家平均消費數量 每家	三〇家平均消費數量 每等成年	五家平均消費支出 每家	五家平均消費支出 每等成年	聯買家數	對三〇五家的百分數	家庭平均每家消費數量	家庭平均每家消費支出
燃料				$29.00	$8.482	305	100.0		$29.00
煤油	斤	88.57	25.90	7.10	2.075	302	99.0	89.45	7.17
火柴	盒	90.05	26.33	.60	.176	305	100.0	90.05	.60
柴爿	顆	117.90	34.47	6.62	1.935	223	73.1	161.25	9.05
廢木柴	斤	421.04	123.11	5.72	1.673	244	80.0	526.29	7.16
花箕柴	斤	158.10	46.23	1.69	.493	115	37.7	419.31	4.48
稻柴	斤	175.08	51.19	1.16	.339	88	28.9	606.81	4.02
蘆萁柴	斤	59.05	17.27	.61	.178	28	9.2	643.27	6.63
煤炭	磅	13.58	3.97	.15	.045	41	13.4	101.15	1.15
煤球	簍	189.09	55.28	2.56	.749	146	47.9	394.94	5.34
電燈	簍	.68	.20	.64	.187	160	52.5	1.30	1.22
其他燃料		.65	.19	.37	.109	85	27.9	2.32	1.34
				.86	.254	38	12.5		7.18
				.92	.269	213	69.8		1.32

表四十　按收入組平均每家全年燃料支出的分析

收入	家數	平均每家支出													
		煤	油	火柴	柴片	木柴	花葉柴	稻柴	蘆柴	萱葉柴	煤	炭	煤球	其他燃料	電燈	總計
$200— $299.99	62	$6.00	$0.50	$7.27	$5.90	$1.29	$.59	$.95	$.08	$1.86	$.30	$.32	$.96	$.30	$26.32
300— 399.99	95	6.71	0.57	5.63	4.63	1.90	1.22	1.00	.19	1.73	.80	.13	.96	.57	26.04
400— 499.99	80	7.23	0.65	5.28	6.97	1.96	1.59	.15	.27	3.08	.55	.47	.89	.69	29.78
500— 599.99	31	7.75	0.65	6.95	6.08	2.66	1.07	.62	.07	2.45	.74	.78	1.02	1.33	32.17
600— 699.99	25	9.51	0.69	11.99	4.28	.57	.54			4.27	1.08	.53	.77	1.48	35.71
700 及以上	12	8.21	0.71	7.99	7.22	.13	2.27			5.91	.51	.57	.67	4.75	38.94
總計或平均	305	7.10	0.60	6.62	5.72	1.69	1.16	.61	.15	2.56	.64	.37	.92	.86	29.00
		百分數													
$200— $299.99	20.3	22.8	1.9	27.6	22.4	4.9	2.3	3.6	.3	7.1	1.1	1.2	3.7	1.1	100.0
300— 399.99	31.2	25.8	2.2	21.6	17.8	7.3	4.7	3.8	.7	6.6	3.1	.5	3.7	2.2	100.0
400— 499.99	26.2	24.3	2.2	17.7	23.4	6.6	5.3	.5	.9	10.3	1.9	1.6	3.0	2.3	100.0
500— 599.99	10.2	24.1	2.0	21.6	18.9	8.3	3.3	1.9	.2	7.6	2.3	2.4	3.2	4.2	100.0
600— 699.99	8.2	26.6	1.9	33.6	12.0	1.6	1.5			12.0	3.0	1.5	2.2	4.1	100.0
700 及以上	3.9	21.1	1.8	20.5	18.6	.3	5.8			15.2	1.3	1.5	1.7	12.2	100.0
總計或平均	100.0	24.5	2.1	22.8	19.7	5.8	4.0	2.1	.5	8.8	2.2	1.3	3.2	3.0	100.0

試閱表四十，305 家平均每家全年燃料類支出爲 $29.00，或平均每月 $2.42。各種燃料中消費值最多的爲煤油，計 $7.10，次柴爿，$6.62，再次廢木柴，$5.72。煤油柴爿廢木柴三種，實爲上海工人燃料的大宗，其消費值約佔全部燃料費三分之二。至於煤的消費值，僅 $2.56，花箕柴僅 $1.69，稻柴僅 $1.16。火柴雖爲每家必備之品，但全年消費值不過六角。其餘如蘆柴，豆箕柴，炭，煤球，電燈和其他燃料，每種全年消費值，均不到一元。

若按收入分組，平均每家全年燃料費支出，隨收入增加而見增，不過他在生活費總支出中的百分率，並沒有什麼變動，至於每種燃料消費值在燃料總支出中的百分數，大多不以收入的增減而呈顯著的變化。其中可注意的只有煤和電燈的百分數，兩項支出的百分數，都是隨收入的增加而見高的，這大概因爲收入和人口多的家庭，用煤和電燈比較合算些。

雜項類 生活費用中凡不屬於食物房租衣着燃料四類的，都入此類。本類各項費用，依其性質又可分爲交通，教育，衞生，嗜好，水，用具，飾物，修理，社交，娛樂，捐稅，利息，迷信，儲蓄，醫藥，特別費和其他等十七目。各目消費量值，見表四十一。

(一)交通 記賬家庭平均每家全年的交通費用爲 $5.37，或平均每等成年 $1.64，佔雜項

表四十一 雜項類品目平均每家和每等成年全年量值的分析

雜項類品目	單位	三〇五家平均消費數量 每家	三〇五家平均消費數量 每等成年	三〇五家平均消費支出 每家	三〇五家平均消費支出 每等成年	購買家數	對三〇五家的百分數	購買家庭平均每家消費數量	購買家庭平均每家消費支出
雜項類				$112.000	$ 34.146	305	100.0		$
交通目				5.366	1.636				13.062
旅費				2.794	.852	84	27.5		10.146
其他				2.572	.784	269	88.2		2.916
教育目				1.454	.443				6.243
學費				1.272	.388	68	22.3		5.705
書籍文具				.182	.055	103	33.8		.538
衞生目				7.888	2.399				7.938
衞生用品				.501	.153	299	98.0		.511
理髮				2.427	.740	304	99.7		2.435
沐浴				1.260	.384	293	96.1		1.312
肥皂	塊	50.827	15.496	2.592	.790	305	100.0	50.827	2.592
草紙	刀	15.244	4.648	1.088	.332	305	100.0	15.244	1.088
嗜好目				19.998	5.823				53.216
香烟	匣	231.869	70.692	10.284	3.135	282	92.5	250.780	11.123
黃酒	斤	38.020	11.592	3.927	1.197	270	88.5	42.948	4.436
高粱	斤	21.432	6.534	3.160	.963	282	92.5	23.180	3.417
茶葉	斤	2.429	.741	.915	.279	295	96.7	2.511	.946
土烟				.392	.120	10	3.3		11.961
其他嗜好				.420	.128	6	2.0		21.333
水目				7.660	2.335				9.576
開水	杓	4,436.469	1,352.582	7.582	2.312	305	100.0	4 436.469	7.582
自來水				.078	.024	12	3.9		1.994

表四十一　雜項類品目平均每家和每等成年全年量值的分析續

雜項類品目	單位	三〇家平均消費數量每家	三〇家平均消費數量每等成年	五家平均消費支出每家	五家平均消費支出每等成年	購買家數	購買家數對三〇五家的百分數	每家平均消費支出
用具目*				4.545	1.386			
炊食用具				$1.450	$.442			$
家具				1.389	.423			
其他				1.706	.520			
飾物目*				.830	.253			
修理目				1.094	.334	135	44.3	2.481
社交目				10.538	3.213			30.850
送禮				9.605	2.928	273	89.5	10.731
應酬				.933	.284	69	22.6	4.125
娛樂目				2.402	.732			18.334
娛樂				1.242	.379	168	55.1	2.256
賭博				1.160	.354	22	7.2	16.078
捐稅目				.719	.219	103	33.8	2.129
利息目				5.733	1.748	166	54.4	10.534
迷信目				5.315	1.620			6.000
敬神祭祀				3.867	1.179	296	97.0	3.984
錫箔				1.448	.441	219	71.8	2.016
儲蓄目				.176	.054			10.843
儲蓄				.164	.050	7	2.3	7.143
保險				.012	.004	1	.3	3.700
醫藥目				6.052	1.845			7.958
醫費				3.169	.966	217	71.8	4.455
藥費				2.883	.879	251	82.3	3.593
特別費目				22.644	6.904			280.791
寄養家庭費				3.375	1.029	51	16.7	20.181
嬰孩寄養慶祝				.746	.227	15	4.9	15.167
喜喪				9.181	2.799	50	16.4	56.005
墓田置產				7.848	2.393	63	20.7	37.995
出生				.049	.015	3	1.0	5.000
壽衣材				.870	.265	12	3.9	22.125
會館寄柩費				.175	.053	23	7.5	2.321
				.393	.120	1	.3	120.000
				.007	.002	1	.3	2.000
其他目				10.505	3.203			101.551
小孩雜用				5.463	1.666	263	86.2	6.336
雜用工				2.597	.792	305	100.0	2.597
誊耗				.236	.072	17	5.6	4.226
園藝及牲				.381	.116	40	13.1	2.903
表芯	打	.254	.077	.220	.067	76	24.9	.882
寄膳費				.026	.008	35	11.5	2.213 .228
裝電燈				.428	.130	8	2.6	16.300
照相				.195	.059	3	1.0	19.867
訴訟				.104	.032	25	8.2	1.266
修鐘錶				.280	.085	2	.7	42.740
對具架				.003	.001	1	.3	1.000
玩鏡				.002	.001	1	.3	.500
配化妝品				.011	.003	3	1.0	1.158
				.013	.004	1	.3	4.000
				.546	.166	302	99.0	.551

* 分析見附錄。

類費用百分之 4.8。其中因往返鄉里而用去的旅費，平均每家 $2.80，其他如乘電車人力車渡船及寄信等費用共計 $2.57，換言之，居處與工作處所的往返，大率是步行的。305 家中有旅費支出的凡 84 家，佔百分之 27.5，有其他交通費的 269 家，佔 88.2。

(二)教育　記賬家庭平均每家全年的教育費用不過 $1.45，或平均等成年 $0.44，僅佔雜項費用百分之 1.3。這個數目，尚不够定閱一個月的新聞紙。教育費中，學費平均每家 $1.27，書報文具等費 $0.18。305 家中有學費支出的，68 家，佔百分之 22.3，有書報文具等費的支出的 103 家，佔百分之 33.8。記賬家庭中只有一家的子弟，在附近的大學做通學生，一年中支出學費 $80.00，他的父親世居上海，有幾間平房，每月收入也尚可觀。其餘各家的子弟，至多不過能入小學而已。又 305 家中有新聞紙支出的只 16 家，係臨時購閱性質。記賬家庭家主的教育程度見下表：

受學校教育的年數	家主人數	百分數
1年以下	183	60.0
1年	2	.7
2	20	6.6
3	36	11.8
4	25	8.2
5	19	6.2
6	12	3.9
7	2	.7
8	5	1.6
9	1	.3
總計及百分數	305	100.0

(三)衞生　記賬家庭平均每家全年衞生費用爲 $7.87，其中衞生用品費 $0.50，理髮 $2.43，沐浴 $1.26，肥皂 50.8 塊，值 $2.59，草紙 15.2 刀，值 $1.09。305 家中有衞生用品支出的凡 299 家，佔百分之 98.0，有理髮支出的 304 家（其餘一家係家人自己理髮，故無理髮支出），佔百分之 99.7，有沐浴支出的 293 家，佔百分之 96.1。肥皂草紙爲各家所必備。衞生用品中，大部分爲臭藥水牙粉牙膏等品。沐浴費用，只限於男子，平均每月沐浴一次，至於婦孺大都在家中沐浴，其費用歸入水目。

(四)嗜好　工人的最大嗜好，莫過於煙酒兩項。平均每家全年消費香煙 231.9 小匣（每匣十支），值 $10.28，每匣價約 $0.044；黃酒 38.0 斤，值 $3.93，每斤 $0.11；高粱 21.4 斤，值 $3.16，每斤 $0.148；茶葉 2.43 斤，值 $0.92，每斤 $0.40；土煙及其他嗜好計 $0.81。各項嗜好費用共計平均每家 $19.10，佔雜項類費用百分之 17.1。305 家中吸香煙的家庭凡 282 家，佔百分之 92.5；飲黃酒的 270 家，佔 88.5；飲高粱的 282 家，佔 92.5；有茶葉費的 295 家，佔 96.7；吸土煙的只 10 家，佔 3.3；有其他嗜好費用的 6 家，佔 2.0；在有其他嗜好的家

庭中，有一家的家主，吸食鴉片，每月約十數元，因此把平均每家其他嗜好的費用，提高不少。

(五)水 上海熟水的供給，很是便利，熟水店到處都是，銅元一枚可購沸水二杓或三杓，每杓約容水 25 兩。如購熱水，銅元一枚，可購三杓至四杓，取價既廉，所以家庭煮飯沏茶，大都購用開水，以省燃料。記賬家庭都有開水的費用，平均每家全年購開水 4,436.5 杓，值 $7.58，或平均每月購 370 杓，值 $0.63。自來水大抵由房主供給，費用已計入房租。不過仍有 12 家有自來水的費用，這 12 家，係屬於平房和草棚的住戶，因屋內沒有自來水的供給而向他處買來供飲食用的，12 家平均每家全年自來水費用 $1.99。全體平均每家全年開水和自來水的費用計 $7.66，佔雜項類費用百分之 6.8。

(六)用具 記賬家庭平均每家全年購置用具費爲 $4.55，佔雜項類費用百分之 4.1。若以用具的性質分，則傢俱如桌椅等費計 $1.39，伙食用具如碗筷風爐等計 $1.45，其他用具費計 $1.71。傢俱中以購買檯子凳子床便桶等件爲多。記帳家庭中購買凳子的凡 22家，佔百分之 7.2，22 家平均每家全年購買凳子 2 隻，值 $1.05；買檯子的 20 家，佔百分之 6.6，20 家平均每家購買 1.1 隻，值 $4.17；買床的 12 家，佔百分之 3.9，平均每家置床1.1隻，值 $11.28；買便桶的 19 家，佔百分之 6.2，平均每家置便桶 1 隻，值 $1.19（伙食及其他用具，品名最爲繁瑣，參閱附錄三）。本局曾用抽樣法調查記帳家庭中 24 家的全部用具的情形，估計其現在價值，平均爲 $47.18。其中全部家具如床桌椅箱等值 $26.80，佔百分之 56.8；廚房用具如鍋爐碗筷等值 $9.71，佔 20.6；衞生用具如面盆牙刷等值 $3.70，佔 7.8；化粧用具如木梳鏡子等值 $3.60，佔 7.6；其他用具值 $3.37，佔 7.1；參閱附錄四。

(七)飾物 記帳家庭平均每家全年飾物費用爲 $0.83，佔雜項類費用百分之 0.7，大率爲耳環手鐲髮叉鎖片戒指和錶等品。記帳家庭中買耳環的有 29 家，平均每家購 1.24 付，值 $2.31；置手鐲的 13 家，平均每家 1 付，值 $2.38；置髮叉的 10 家，平均每家 2 只，值 $0.16；置鎖片（小孩飾物）的 9 家，平均每家 1 付，值 $2.76；買戒指的 6 家，平均每家 1.17 只，值 $7.51；置錶的 10 家，平均每家 1.1 只，值 $2.69；參閱附錄五。

(八)修理 記帳家庭平均每家全年修理費用——如修理房屋和家具等——爲 $1.09。有修理費的家庭凡 135 家，佔家庭總數百分之 44.3。

(九)社交 記帳家庭平均每家全年送禮費用爲 $9.61，有送禮費的家庭凡 273 家，佔家庭總數百分之 89.5，所以記帳家庭中十分之九是有送禮費的支出。又每逢時節，往往有邀親友歡宴的酬應費，記帳家庭平均每家全年爲 $0.93。有應酬的家庭凡 69家，佔家庭總數百分之

22.6。合送禮和應酬兩項爲社交費，305家平均每家全年爲 $10.54，佔雜項類費用百分之9.41。

(十)娛樂　記帳家庭中，娛樂費一項，所佔不多，平均每家全年 $2.40，佔雜項類費用百分之 2.1。娛樂又可分爲正當的娛樂如聽戲看電影聽書和不正當的娛樂如賭博等等。記帳家庭中有正當娛樂費的凡 168 家，佔百分之 55.1，平均每家 $2.26。若就全體而論，平均每家全年正當的娛樂費爲 $1.24，以賭博而負去的爲 $1.16。實在講起來，因賭博而負去的錢必不祇此數，因爲有許多家庭在起初記帳的時候，還不肯完全吐露實情。

(十一)捐稅　記帳家庭中有捐稅支出——如工會捐清潔捐等等——的家庭凡 103 家，佔百分之 33.8，平均每家全年所納各種捐稅爲 $2.13。以全體家庭計，平均每家不過 $0.72 而已。

(十二)利息　記帳家庭中付利息的凡 166 家，佔百分之 54.4，平均每家全年計付利息 $10.53。若以全體家庭計算，平均每家爲 $5.73，佔雜項類費用百分之 5.1。以工人們收入之少，利息的負擔，已覺過重，其實這個數目，不過是帳簿上的實付數而已，此外如應付而未付的利息和無從和本金分開的利息，尚未計入，所以記帳家庭每年應該負擔的利息，遠在此數之上。

(十三)迷信　若把敬神祭祀和錫箔等費用，都歸入迷信一目，則記帳家庭平均每家全年因迷信而耗去的費用爲 $5.32，佔雜項類費用百分之 4.8。各家中有敬神祭祀費的計 296 家，佔百分之 97.0，平均每家爲 $3.98，有錫箔費的 219 家，佔百分之 71.8，平均每家 $2.02。

(十四)儲蓄　儲蓄一目，包括保險，記帳家庭中有儲蓄的不過 7 家，平均每家儲蓄 $7.14，有保險的只 1 家，其全年所付保險費爲 $3.70。若按全體記帳家庭計算，平均每家全年有儲蓄的(包括保險)，只 $0.18 而已。

(十五)醫藥　記帳家庭平均每家全年的醫藥費爲 $6.05，佔雜項類費用百分之 5.4，其中醫費 $3.17，藥費 $2.88。記帳家庭中有醫費的凡 217 家，佔百分之 71.8，有藥費的 251 家，佔百分之 82.3。

(十六)特別費　本目包括：寄家田租置產出生嬰孩寄養費喜慶喪葬壽衣材和會館寄柩費等九項。305 家平均每家全年的特別費爲 $22.64，佔雜項類費用百分之 20.2。特別費中最大的幾項支出爲喜慶喪葬寄家生養等項。喜慶包括嫁娶壽辰小孩滿月等，記帳家庭中有喜慶費的凡 50 家，平均每家 $56.01；有喪葬費的 63 家，平均每家 $38.00；曾寄款項至原籍家中的 51 家，平均每家 $20.18；有接生費的 23 家，平均每家 $2.32。

(十七)其他　雜項費用中不屬以上任何一目者入本目。305 家平均每家全年的其他雜項

表四十二　按收入組平均每家全年雜項支出的分析

收入	家數	平均每家支出																	
		交通	教育	衛生	嗜好	水	用具	修理	飾物	社交	娛樂	捐稅	利息	迷信	儲蓄	醫藥	特別費	其他	總計
$200—299.99	62	$3.41	$.36	$6.05	$12.53	$7.04	$2.63	$.08	$.31	$5.95	$.63	$.37	$3.44	$3.48	$	$3.59	$15.53	$5.05	$70.45
300—399.99	95	4.33	.65	6.94	19.34	7.22	3.72	.57	.64	8.33	2.72	.42	6.22	4.03		4.50	12.12	8.86	90.61
400—499.99	80	5.15	2.21	8.47	21.04	7.36	3.95	.97	.45	8.93	1.03	.92	6.24	5.45	.03	6.86	17.52	9.89	106.47
500—599.99	31	7.46	1.92	8.85	17.21	8.78	7.35	1.12	1.88	16.45	5.16	.91	4.68	7.16	.39	6.75	38.53	12.93	146.93
600—699.99	25	7.77	1.88	10.75	28.10	8.71	7.00	6.12	1.38	24.06	5.12	1.43	8.51	10.34	1.51	11.99	36.83	25.93	197.43
700及以上	12	14.72	6.34	12.00	24.30	11.28	12.58	.90	3.59	18.94	5.34	1.64	8.81	8.85	.17	11.56	105.32	17.43	264.77
總計或平均	305	5.37	1.45	7.87	19.10	7.66	4.55	1.09	.83	10.54	2.40	.72	5.73	5.32	.18	6.05	22.64	10.50	112.00

收入	家數	百分數																	
		交通	教育	衛生	嗜好	水	用具	修理	飾物	社交	娛樂	捐稅	利息	迷信	儲蓄	醫藥	特別費	其他	總計
$200—299.99	20.3	4.84	.51	8.59	17.79	9.99	3.73	.11	.44	8.45	.89	.53	4.88	4.94		5.10	22.04	7.17	100.00
300—399.99	31.2	4.78	.72	7.66	21.34	7.97	4.10	.63	.71	9.20	3.01	.46	6.86	4.45		4.96	13.37	9.78	100.00
400—499.99	26.2	4.83	2.08	7.96	19.77	6.91	3.71	.91	.42	8.39	.97	.86	5.87	5.11	.02	6.44	16.46	9.29	100.00
500—599.99	10.2	5.08	1.31	6.03	11.71	5.98	5.00	.76	1.28	11.20	3.51	.62	2.78	4.87	.26	4.59	26.22	8.80	100.00
600—699.99	8.2	3.93	.95	5.45	14.23	4.41	3.54	3.10	.70	12.19	2.60	.72	4.31	5.24	.76	6.07	18.66	13.14	100.00
700及以上	3.9	5.56	2.39	4.53	9.18	4.26	4.75	.34	1.36	7.15	2.02	.62	3.33	3.34	.06	4.37	40.16	6.58	100.00
總計或平均	100.0	4.79	1.30	7.02	17.05	6.84	4.07	.97	.74	9.41	2.14	.64	5.12	4.75	.16	5.40	20.22	9.38	100.00

費用爲 $10.51，佔雜項類費用百分之 9.4。其中最大的支出爲小孩的雜用，如購零食玩具等和家庭雜用兩項。記帳家庭中有小孩雜用的凡 263 家，佔百分之 86.2，平均每家費用 $6.34；至於其他雜用，各家都有，平均每家全年 $2.60。

雜項類中如教育衞生嗜好飾物社交娛樂等費用，係衣食住必需的生活費外，爲求生活舒適和滿足其他慾望的費用。所以照普通的情形而言，收入愈多的家庭，雜項類費用愈大，在全部生活費中的百分率也愈高。雜項類費用的百分率愈高，也就是生活程度優越的表徵。此次記帳家庭平均每家全年雜項類費用爲 $112.00，佔全部生活費用四分之一弱，照一般生活狀況統計的結果而言，上海工人的生活，應遠勝於國內各地的勞工階級，即較歐美日本諸國，亦不多讓（閱表十三和十四），然而情形並不是這樣簡單的，試閱表四十二，我們大概可以得到以下的幾點感想：

第一，記帳家庭的家主，有百分之60所受教育是不足一年的，至於受過一年以上至五年的，更不過百分之 33.5，成人教育的不普及，可以想見。我們再看記帳家庭平均每家全年的教育費，不過 $1.45，佔雜項類百分之 1.3，這些微的數目，已充分地證明工人子女受學校教育的機會，實在太在我們所期望的標準以下了。吾國教育是貴族化，這一筆子女的教育費，不是經濟上感到百孔千瘡的工人們所能負擔。雖然公私機關，對於工人子弟學校和工人補習學校已在逐漸創設，收取低廉的學費，以獎勵工人和他們的子女們去入學，究竟「杯水車薪」，無濟於事，失學兒童，終居多數。

第二，記帳家庭平均每家的教育費，既如是之少，平均每家祇 $1.45，但關於嗜好和迷信的耗費，又覺得可驚。平均每家全年耗費於嗜好的計 $19.10，佔雜項類費用百分之 17.1，居雜項類各目百分率的第一位，較教育費高出十三倍强。又平均每家全年耗費於迷信的計 $5.32，佔雜項類百分之 4.8，也較教育費高出四倍弱。工人們平日既缺乏教育和娛樂的機會，在空閑的時候，又以賭博烟酒爲唯一的消遣，我們已經核算出來記賬家庭平均每家全年工資等收入和生活費支出相抵，尙虧短 $37.87，倘能把不必需的嗜好和迷信等費用省却了，豈不是平均每家全年可以減去 $24.42，或三分之二的虧空嗎？同時因虧空減少，豈不是又可以減輕一部份利息的負擔嗎？

八 總 述

記賬家庭的人口 本局上海市一般工人的家計調查，自十八年四月起至十九年三月止，計查工人家庭凡 305 家。家庭人口以自三口至六口的爲最多，佔家庭總數百分之 85·9，平均每家人口數爲 4·62 人，連寄膳爲 5·09 人。305 家中，寄膳者凡 140 人，內 8 人連寄宿。依據國內各調查的結果，農村家庭的人口，平均每家五口强，都市工人家庭人口，平均每家五口弱。他如美印兩國都市家庭人口調查，平均亦在 4·2 至 5·3 口之間，所得結果，與國內外各調查，尙稱近似。本市工人家庭，以生活程度的增高，有傾向小家庭化趨勢，夫妻和他們的子女佔百分之 81·42。

人民的消費需要，和年齡性別，是很有關係的，愛脫華氏以實足十七歲的男子爲一個成年男子，作爲比較人口數的標準，未成年男子和各年齡的女子，卽依計算表折合。照此合算，305 個家庭平均每家等成年男子數爲 3·28，連寄膳者爲 3·42 人。305 家中，以等成年 2 人至 4 人的家庭爲最多，佔家庭總數百分之 73·4。大體說來，一家的收入和等成年數是成正比例的。

年齡性別 此次調查的 1,410 人，內男子 707 人，平均年齡爲 23·10 歲，女子 703 人，平均 25·24 歲。其中自初生至十四歲的幼年男女，佔百分之 34·5，十五歲至四十九歲的壯年，佔 56·2，五十歲及以上的老年，佔 9·3。依據國內各調查結果，人民年齡分配的百分比，與上述數字，亦甚近似。繩以爽巴格氏之說——一地人口分配，十五歲以下者佔百分之 40，五十歲以上者佔百分之 10 時，人口具有增加性——則本市一般工人家庭的人口，有增加的趨勢。

業務 1,410 人中，無職業的較有職業爲多，前者佔百分之 55·39，後者佔 44·61。在一年之中，失業的有 55 人，佔有業人數百分之 8·74。305 家中，平均每家有業人數爲 2·06，也卽每家每二個人中，只有一個人是做工的。此次調查，雖以工廠工人爲主，然各業工人數的分配，尙屬勻稱，男子以業棉紡機器棉織者爲多，女子以業棉紡棉織繅絲者爲多。在各業中，既以紡織業工人數爲最多，所以該業調查的人數佔有百分之 60·26，其他各業人數分配，也尙能適如其量。

收入 305 個家庭，平均每家每年正式收入爲 $416·51，其中工資收入佔收入總數百分之 87·3，此外爲其他收入——房金包飯禮品資助營業等。若和國內其他調查結果比較，上海一般工人的家庭，以房金和包飯的收入較多，工資佔收入總數的百分比亦最低，收入越大的家庭，其工資收入的百分比越小，收入越少的家庭，夫和妻的工資百分比愈大，也就是他們在家庭中的

負擔愈重。

支出 305 個家庭，平均每家每年正式支出爲 $454.38，其中食物佔百分之 53.2，房租佔 8.3，衣着佔 7.5，燃料佔 6.4，雜項佔 24.6，就是說，必需的費用約爲四分之三，其他費用約爲四分之一。除衣着和燃料外，各項百分比的變動，與恩格爾氏（Engel）生活費定律很合。若與國內其他都市比較，上海一般工人的生活程度，似覺稍高。若與各國比較，不免相形見拙。普通說起來，食物費的百分數愈低，雜項費的百分數愈高，是生活優越的徵象，本市工人雜項類百分比雖高，然而生活並不見得優越。

若以平均一等成年一年中的生活費支出——$135.16——作爲一個成年男子的必需生活費用標準，那末一個有家庭負擔者（等成年），須扶養完全依賴者 1.16 等成年，津貼半依賴者 .44 等成年，能自立者僅 .03 等成年而已。

收支盈虧 305 個家庭，平均每家每年收入 $416.51，支出 $454.38，收支相抵，不敷 $37.87。若僅以工資來維持生活，十家之中，虧短的有八九家之多。若以全部收入來維持生活，也有三分之二的家庭，入不敷出。

正式收入之外，如借款當物會款賒欠和收還等，曰假收入，平均每家每年收入 $148.02。正式支出之外，如還借贖當付會款還賬和賃出等，曰假支出，平均每家每年支出 $99.12。假定在記賬前收支平衡，則假收入超過假支出 $48.90，減去平均每家每年虧短數 $37.87，尙餘 $11.03。

若合正式收入與假收入爲 100，則假收入佔收入總數百分之 26.2，就是說，四分之一以上的款項，是出重利借來的。若合正式支出與假支出爲 100，則假支出佔總支出百分之 17.6，也就是說，借來的款項，一半是還不出的。

依據調查，305 個家庭，有借款的家庭，佔家庭總數百分之 88.2，有當物的佔百分之 78.0，合會的佔 69.5，有賒欠的佔 48.5。典押借印子錢合會是工人們彌補虧短的方法。押店當鋪，月息多在二分左右；印子錢月息，大半在十分以上。

食品分配 上海一般工人的食品，可分米麵，豆及蔬菜，肉魚及蛋，調味品，和其他五目：

(1)米麵目費用佔食物類費用二分之一以上，而其中食米一項，又佔該目費用五分之四以上。305 家中，食粳米的佔家庭總數百分之 90，秈米佔百分之 68，粳米和秈米兼食的佔百分之 58。上海工人食品以米爲主，麵及米麵製品次之，北方人民以麵食爲主，米食次之。

(2)豆及蔬菜的種類雖多，但是工人們常吃的却也不多。豆腐豆腐乾百頁油豆腐豆瓣線粉

等，都是他們常吃的豆類，其中尤以豆腐的消費額爲最大。青菜鹹雪菜蘿蔔菠菜韭菜芹菜茄子菱白豇豆莢毛豆莢等，是常吃的蔬菜，其中尤以青菜鹹雪菜的消費額爲最多。

(3)肉魚及蛋目的消費值，和豆及蔬菜幾於相等。鮮猪肉鮮牛肉鹹猪肉是常吃的肉類，其中尤以鮮猪肉的消費額爲最多，佔肉魚及蛋目費用三分之一强。水屬動物中以鮮黃魚鮮白魚鮮帶魚鮮鯽魚和鹹白魚的消費量爲最多。蛋類中以鮮鴨蛋的消費量爲最多。牛奶一項，爲歐美人民日常的食品，但在 305 個記賬家庭中，購牛乳的只 28 家。

(4)豆油醬油食鹽和白糖，幾於每家都備。猪油和花生油，購買家庭就少得多。蔬油醬醋，購買的家庭雖多，然消費量有限。精美的調味品，是偶一購備的。

(5)瓜果的供給，上海雖多，然非一般工人們所能常買。水果的消費，以西瓜爲多，其次爲甘蔗荸薺等品。乾果中，以瓜子花生爲多，在新年或逢時節而購買的。

食物費分析　若按收入多少分組，平均每家全年食物類費用爲 $241·54，其中米麵目佔百分之 53·4，豆及蔬菜目佔 17·5，肉魚及蛋目佔 16·5，調味品目佔 10·5，其他佔 2·1。食物類各目費用都有隨收入增高而遞升的趨勢，但是各目費用對於該類費用總計的百分比的分配，却不一致。

食物費分配的比較　本局所調查的上海一般工人家庭食物類各目費用的百分比，和國定稅則委員會所調查的上海紗廠工人家庭的數字，兩相比較，頗稱近似。若和北方農工比較，則本市工人食物類各目費用的分配，較爲勻稱。北方米麵目費用極高，佔百分之 80 以上，其餘各目，均不佔相當地位。若再和東方國家如印度孟買和日本的工人比較，則印日和上海的各目費用百分比分配，反較上海和國內北方人民各目分配爲近似——尤其是米麵目費用。在這三處——上海孟買日本——以植物類食品爲主，穀類豆和蔬菜等佔食物費百分之 60 以上，動物類次之，肉魚蛋牛乳等約佔百分之 16 左右。若再和西方人民比較，不問爲貧窮的愛爾蘭或富饒的美洲，却有一個重要不同之點，西方人民以肉類蛋牛乳牛油等爲主要食品，在食物類費用中約佔百分之 50 至 70 之間，穀類費用只佔百分之 10 至 20 之間，東方人民是蔬食者，西方人民是肉食者。

膳食營養素的分析　上海工人的膳食，平均每一個成年男子每日得蛋白質 82·5 公分，脂肪 48·8 公分，碳水化物 559·8 公分，這三種營養素計發生熱量 3,008 卡羅里。照理論說，上海工人膳食的發熱總量，已不致於不足，但是蛋白質脂肪碳水化物三者配合的比例，尚欠適當。蛋白質僅及最低標準，脂肪太少，碳水化物又太多，並且十分之九的蛋白質是來自植物的——

尤其是穀類，只十分之一，是來自動物的，所以他的品質和在生理上的價值，尚覺欠佳。至於膳食的熱量，十之七八，也來自穀類食物，無機鹽類中的鐵，雖尚足用，鈣和磷則患不足。乙丙兩種維生素雖不致過少，然甲丁兩種，則有缺乏之虞。

住屋種類 上海工人住屋，可以分爲三等：(一)優等住屋，大都是樓房，有石庫門式(有天井)和東洋式(無天井)兩種，(二)次等住屋，大都是舊平房，質料較差，(三)草棚。

住屋狀況 記賬家庭中，住樓房的佔百分之 60，住平房的佔 34，住草棚的占百分之 6。若照間數分配，僅住一間(實際間)的家庭，佔百分之 47·6，住兩間的佔 42·6，住三間及三間以上的佔 9·8。305 家平均每家住 1·65 間，以平均每家有 4·62 人或 3·28 個等成年計算，平均每間住 2·8 人或 2·0 等成年。若依一個成年生理上的需要，再斟酌實際的情形，定 32 立方公尺爲一標準間，305 家平均每家住 1·41 個標準間，每標準間平均住 3·2 人或 2·3 個等成年。依據統計，平均每間居住的人數，是隨收入的高低而增減，收入增加，住屋自然能跟着寬敞的。若把上海工人每家所住間數的多少和北平的工人比較，固覺此勝於彼，然若和歐美工人比較，無疑地是比他們擁擠得多。

305 個家庭平均每家只有窗 1·24 扇，其面積不過 0·15 平方公尺，以平均每家住 1·65 間計算，每間還不到一扇窗，面積也不到十分之一平方公尺。大多數的草棚是沒有窗的。記賬家庭住屋地面用木板的佔百分之 62·3，用水泥的佔 13·4，用泥地的佔 24·3。家內洗濯用自來水的佔百分之 68，用井水的佔 14，用河水的佔 18。至於飲食用的熟水，是從熟水店買來的。記賬家庭有公用灶間的佔百分之 58，在房內烹飪的佔百分之 42。

房租 記賬家庭平均每家全年支出房租 $37·83，或平均每月 $3·15；平均每間每月 $1·91，每標準間每月 $2·19；平均每人全年支出房租 $8·19，或每月 $0·68；平均每等成年全年支出房租 $11·06，或每月 $0·92；又平均每人或每等成年全年房租支出有隨收入增加而遞增的趨勢。

衣着 305 個家庭，平均每家全年衣着費用爲 $34·01，其中布疋費佔百分之 54·0，衣服費佔 11·4，被褥費佔 2·0，其他如鞋帽襪等費用佔百分之 32·6。布疋中消費最多的是：粗布細布條格布斜紋布花標布竹布線呢絨布線綢等數種。至於綢緞眞毛葛眞嗶吱香雲紗等價格高貴的衣料，購買者不過百分之三四而已。

本局用揀樣法把 24 個記賬家庭的全部衣着品檢點一下，估計平均每家祇值 $116·64，其中被褥類佔百分之 16·7，衣服佔 73·6，其他佔百分之 9·7。

燃料 305 家平均每家全年燃料費爲 $29.00，燃料中以煤油柴片（劈柴）和廢木柴三種爲大宗，平均每家全年消費煤油 88.6 斤，柴片 118 顆，廢木柴 421 斤，這三種燃料的消費值，佔全部燃料費三分之二。

雜項 凡不入食住衣和燃料四類的品目，都歸入本類。305 家平均每家全年雜項類費用爲 $112.00。本類各目，若依費用多少，則其次序如下：特別費平均每家全年 $22.64，嗜好 $19.10，社交 $10.54，其他目（小孩雜用等）$10.51，衞生 $7.87，水 $7.66，醫藥 $6.05，利息 $5.73，交通 $5.37，迷信 $5.32，用具 $4.55，娛樂 $2.40，教育 $1.45，修理 $1.09，飾物 $0.83，捐稅 $0.72，儲蓄 $0.18。特別費包括寄家用喪葬喜慶生養等項，費用最大，嗜好費用以煙酒爲大宗，教育並文具書報等費，僅 $1.45，遠在迷信費用之下，更不及嗜好費用之什一。

幾個改進的提議 從上面的分析，我們知道上海工人家庭，平均約在四五口之間，一年收入僅四百十六元，支出則須四百五十四元，收支相抵，不敷約三十八元，唯有力求增加收入，以資彌補。然在大都市中，生活程度的提高，實較工資增加爲速，故在支出方面，支配適當，尤覺重要。各類支出費用，食物計佔四分之二强，雜項計占四分之一，此外衣着房租燃料三類，合佔四分之一弱。據研究，工人食物營養素，尚覺過劣，衣着居處，亦極簡陋，似難減低，惟雜項費用，即與國外比較，並未見低，倘能支配適當，生活狀況，當不致如是之窘。雜項費用內，如衞生娛樂教育儲蓄等項百分比，急待提高，不合理費用，如特別費中的嫁娶壽辰彌月，如煙酒嗜好，如不正當娛樂賭博，如小孩雜用，如迷信等等，儘可減少。即雜項類費用百分比較現在爲低，生活狀況，或遠勝於此時。其次膳食的改善，不必待經濟能力增加，始可辦到，下面的建議，雖然沒有增加屬于動物類的營養素，但尚簡便易行：（一）改食糙米——穀類的皮和胚，富有乙種維生素，即蛋白質和脂肪的成分，糙米也較輾白米爲多；（二）多食黃豆和豆製品，酌減穀類食物——豆類含有很好的蛋白質，並且維生素和無機鹽類也比較穀類爲高；（三）多食葉類的蔬菜，尤其是番茄——葉類蔬菜，富有甲種維生素和無機鹽類，番茄富有甲乙丙三種維生素；（四）改善烹調法——煮蔬菜時間不可過長，以防維生素和無機鹽類的分解。煮飯勿用沸水先煮，而棄其水，以防維生素蛋白質和碳水化合物的損失。再煮食物時勿加鹹以速其軟化，鹹能消減胃液中的鹽酸和乙丙兩種維生素。至於住屋的改進，（甲）治標方法：（一）設立房租審議委員會，依客觀的標準，審定各區房租之是否適當，評議與防止因房租而發生爭議。（二）取締二房東的剝削。（乙）治本方法：（一）徵收荒廢稅，（二）獎勵建築，（三）提倡關於住屋的合作事業。

STANDARD OF LIVING OF SHANGHAI LABORERS

I. SCOPE AND METHOD OF INVESTIGATION

Inquiries Conducted at Home and Abroad.

The investigations into the conditions of life of laborers date from the beginning of the nineteenth century onwards. The inquiries into the living conditions of working families in different European countries made by Fréderic Le Play during the period 1829 to 1870, the study of the inhabitants in London by Charles Booth in 1886, and the investigation into the poverty stricken families in York City by B. S. Rowntree in 1899 were the most prominent among the pioneer works on the general conditions and standard of living. These early inquiries were largely conducted by private individuals and were of a very limited character. Later on, there has been an evergrowing interest in the conditions under which people are living, and the need was felt for more complete information than that which private investigators could compile. To meet these needs and to supply a basis for reforms of various kinds, the statistical offices of various governments and institutions began to conduct family budget inquiries. Thus, inquiries were conducted in the United States in 1890 to 1891, in the United Kingdom in 1904, in France in 1905, in Germany in 1907, in New Zealand in 1910, in Netherlands in 1911, in Austria and Norway in 1912, in Japan in 1919, in Italy in 1920, in India in 1921, and in Ireland and Russia in 1922.[1] In China, the statistical study of the cost and standard of living is a comparatively more recent development. Among the outstanding works, the inquiry into the livelihood in Peiping was made by the Social Research Department in 1926 to 1927, similar inquiries into the living conditions of rural families in Peiping suburbs and of factory workers in Tangku were made by the same institution in 1927, the investigation into the cost of living of laborers in Tientsin was made by the Nankai University, Tientsin, in 1927 to 1928, and that of the cotton mill workers in Shanghai was made by the former Bureau of Markets during the same period. The budgetary inquiry conducted by the Bureau of Social Affairs, upon which the present study is based, covers a period of twelve months from April 1929 to March 1930, and is intended for a more complete view of the working families in Shanghai as a whole. Based upon the data of average quantity and value of consumption derived from the inquiry, a cost-of-living index number of laborers in Shanghai has been constructed and is now compiled regularly every month by the Bureau. The present study shall be devoted to a careful analysis of the general conditions under which the average working families in Shanghai are living.

Selection of Families.

The securing of representative samples is the first condition of valid statistical induction. To the question of the selection of families, therefore, great importance is attached. The families included in the inquiry should form a fair representation of the class studied. The sample selected might either be random families picked up from the whole group, or typical representatives carefully defined by various criteria. The method of random investigation is not adoptable in the present case as the families selected at

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[1] See Methods of Conducting Family Budget Enquiries, International Labour Office, Geneva, Series N (Statistics), No. 9, 1926, Appendix I.

random might not be willing to render the necessary information and bias or preference on the part of the investigator is often unavoidable. On the other hand, the available statistical data on labor conditions in Shanghai, though provide hardly a satisfactory description, are at least helpful in affording the necessary information which serves as a basis in the selection of representative families.

In 1927, when the inquiry was started, an outlook of the general labor conditions in Shanghai is manifestable from the following figures. According to a census made by the Bureau of Public Safety in the Autumn of 1928, there was approximately a total of 300,000 families with a population of 1,500,000 persons in the city, averaging 4.98 persons per family.[1] Out of the entire population, the working class in the 47 different industries amounted to an aggregate of 237,574 persons, of which 33.9 per cent being male workers, 58.7 per cent female workers, and

TABLE I. NUMBER OF WORKERS AND AVERAGE MONTHLY EARNINGS IN DIFFERENT INDUSTRIES IN SHANGHAI, JUNE—DECEMBER, 1926

Industries	Number of workers					Average monthly earnings		
	Male	Female	Child	Total	Percentage	Male	Female	Child
						$	$	$
Textile industries								
1. Silk reeling		40,131	9,785	49,916			15.11	9.15
2. Cotton spinning	25,671	72,706	2,197	100,574		15.16	13.58	8.58
3. Silk weaving	4,043	2,479	264	6,786	76.8	25.45	16.77	10.58
4. Cotton weaving	4,484	5,173	668	10,325		21.24	11.60	15.75
5. Silk and cotton knitting	1,469	4,018	143	5,630		17.55	14.84	
6. Wool weaving	393	245	101	739		15.40	8.36	
Chemical industries								
7. Paper making	1,193	758	33	1,984		21.14	8.91	10.15
8. Candle and soap	658	220	13	891		17.72	9.46	15.57
9. Match-making	973	1,498	319	2,790		20.05	5.25	9.18
10. Paint and varnish	99	4	4	107		16.59		9.00
11. Tanning	571	3	5	579	5.3	17.40	12.89	9.41
12. Glass-making	614	108	322	1,044		16.18		9.05
13. Enamelling	729	45	61	835		16.21	6.36	
14. Toilet articles	275	310	38	623		18.37	12.16	10.50
15. Bleaching and dyeing	2,656	390	177	3,223		20.44		
Machinery and building								
16. Machinery	3,943		946	4,889		28.94		
17. Electric apparatus	996	477	90	1,563		23.15	18.47	11.71
18. Foundry	661		181	842	6.0	23.45		
19. Ship-building	5,025		27	5,052		33.32		11.28
20. Cement, bricks and tiles	711	20	21	752		15.89		
21. Sawing	536			536		19.45		
Food and tobacco								
22. Flour	2,011			2,011		17.10		
23. Oil pressing	1,658			1,658		15.84		
24. Eggs and egg products	78	218		296	6.7	20.43	13.72	
25. Condiments	1,073	489	64	1,626		24.40	8.27	
26. Cold drinks	209			209		19.11		
27. Tobacco	2,008	6,825	599	9,432		21.31	13.88	6.15
Water, electricity and printing								
28. Water 29. Electricity	4,097			4,097	5.2	26.36		
30. Printing	6,128	548	1,033	7,709		44.75	29.06	
Total or average	72,962	136,665	17,091	226,718	100.0	$ 20.65	$ 13.92	$ 9.30

[1] According to a census made in 1928, there was a total of 2,700,000 persons in Shanghai including the International Settlements and the French Concession. A more recent census showed that in autumn 1930, the total population in Shanghai amounted to 3,156,141. The figure cited here does not include the population in the International Settlements and the French Concession. For detailed information, see "Chinese Economic Bulletin", Vol. XVIII No. 3, published by the former Bureau of Industrial and Commercial Information.

7.4 per cent child workers.[1] The majority of the factory workers in Shanghai was shown to be female laborers. This is due to the fact that as many as 124,752 female workers were employed in the textile industry, which constituted 89 per cent of the total female workers and 52 per cent of the total number of factory workers in Shanghai. According to the investigation into the earnings of the factory workers in the 30 principal industries, the average monthly earnings were found to be $20.65 for an average male worker, $13.92 for female, and $9.30 for child worker. Detailed figures are to be found in Table I. An idea as to the occupational distribution of the workers in Shanghai is also obtainable from the same table, which shows that a majority of 76.8 per cent of the total factory laborers were textile workers, and that the rest was evenly distributed among the other industries. It must, however, be noted that the above inquiries are largely confined to the class of factory workers. Considerations must also be taken of the mass of non-factory workers, regarding whom accurate information is not obtainable. In the selection of families, therefore, an ample number of samples were chosen from that class in order to secure a fair representation of the working families in Shanghai at large.

Aside from the level of income and the occupation of the workers, the territorial distribution of the working families deserves no less attention. That a clear outlook might be obtained as to how the labor force in Shanghai is distributed, the industrial quarters are divided into five districts: the area north of the Whampoo River and east of North Szechuen Road is designated as the Eastern District; that west of North Szechuen Road and north of the Soochow Creek, the Northern District; that south of the Soochow Creek and west of Gordon Road, the Western District; that west of the Whampoo River and south of Rue de Consulate, the Southern District; and that east of the Whampoo River, the Pootung District. The greatest number of laborers are clustered in the Western District, most of them are cotton mill workers. The second largest number of workers are found in the Eastern District, where cotton mills, silk filatures, and electricity works are the leading types of industrial establishments. As to the other districts, the Southern is clustered with workers of machinery works and cotton weaving factories, the Northern is a centre of silk reeling and printing industries, and a majority of the workers in Pootung are employed in the tobacco and match making industries. The families selected in the present inquiry are so distributed among the five districts that the relative importance of each is properly represented. Thus, of the 305 families studied, 42.3 per cent are families in the Western District, 21.0 per cent in the Eastern District, 18.0 per cent in the Southern District, 12.8 per cent in the Pootung District, and 5.9 per cent in the Northern District.

All these elements shall have important bearings upon the conditions of living and habit of consumption of the working families. Besides the careful distribution of the families among the different districts and the principal occupations and services, a standard was established that the families included in the inquiry should be a family of from three to seven persons, ideally a family of a husband and a wife with two or three male or female children, whose monthly earnings varies from $20 to $60. Before the inquiry commenced, agents were sent in October 1928 to select the families and to secure their promise of coöperation. At the outset, data were

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[1] The figures were based upon a trial investigation conducted by the Bureau beginning from May 1928 and covering 1,504 factories, the result of which was published in "The Index Numbers of Earnings of the Factory Laborers in Greater Shanghai". Owing to miscalculation, the number of workers was 237,522, as it appeared in the publication. A more complete survey was made in 1929, which gave a total of 2,326 factories and 285,700 workers. For detailed information, see "Wages and Hours of Labor, Greater Shanghai, 1929", published by the Commercial Press.

collected from 500 families. When the three months' trial period had elapsed, a number of families were dropped from the inquiry due to unsatisfactory information rendered. Complete data for successive twelve months were finally obtained from a total of 305 families.

Method of Securing the Budgets. The question how to secure accurate and reliable budgets demands immediate attention when the families have been properly selected. As the inquiry is intended not merely for the determination of the articles of consumption to be included and their respective weights to be applied in the compilation of a cost-of-living index number, but for an insight into every detail of the daily life of a working family, full particulars of the amounts of income and the quantity and price of the goods or services purchased should be given in the budgets. The daily account books employed by the Bureau were carefully worked out so as to include every minute information of the day's income and expenditure.

During the trial period of the inquiry, efforts were made to work out a satisfactory system of recording information and to overcome the difficulties arisen in the collection of data so as to insure both accuracy and reliability. In so far as the average of mass data is considered, relative accuracy is not inaccessible. The over-exaggeration of income or expenditure by some families might be offset by the under-estimate of the same by others. Difficulties arose, however, when most of the families were not likely to disclose certain facts, such as the amount lost in gambling or the money borrowed on articles at pawn, and also when some of the families would be bothered by the daily call of the agents as the investigation went on and would grow impatient to render the detailed information they promised. Moreover, the diligence and punctuality of the agents was sometimes to be questioned. When the inquiry commenced in January 1929, therefore, most of the books filled out were found in many cases unsatisfactory and incomplete due to the lack of experience on the part of the agents as well as to their failure to secure the confidence and interest of the householders. In order to effect a remedy to this, the agents were to undergo a period of special training, and a number of families of unsatisfactory records were dropped from the inquiry, a part of which was substituted by newly selected ones. It was till as late as April 1929 that the inquiry began to go on smoothly. Even during the regular period of inquiry from April 1929 to March 1930, the accounts of 40 families had to be discontinued due to the absence of some of these families from Shanghai and various other causes.

Preparations were made beforehand to insure the competency of the agents and the correctness of the accounts. When the agents were taken into employment, they were sent to designated districts to arrange for the coöperation of working families who would be willing to render the information required. When the families thus arranged for were verified and approved, the actual recording of information commenced. During the inquiry, efforts were made that the accounts should be kept continuously without any interruption, as such might tend to affect the completeness of the information. All the account books were to be submitted to the Bureau for inspection once every week. The information was carefully checked and explanations were asked for exceptional and doubtful figures. Besides the agents, two inspectors were employed, whose duty was to look into the regular keeping of accounts. They might drop in at any of the families to see whether the agents had been punctual in their daily recording of information. They would sometimes go to some of the families and record down the information, which might be checked with the information secured by the agents to see if there was any discrepancy. The account books were closed at the end of each month. In case of any doubt or error exhibited in the balancing of the income and expenditure, a re-investigation was immediately to be effected. When the correctness of the information was assured, the data were

considered final and adoptable for statistical purpose. The cultivation of confidence and interest on the part of the householders is of primary importance to the inquiry. In order to secure the collaboration of the working families, some pecuniary acknowledgements in the form of gifts were presented to them. The balance figures obtained from the monthly closing of accounts were reported to the respective householders. In case a family was involved in distress, sympathy should be shown and ready assistance offered by the agent. He might give the householders to know how to make a loan from the Loan Office of the Bureau, if it was a matter of financial difficulties they were involved in; or he might recommend to them free medical treatment obtainable from the Labor Hospital, if it was a case of sickness they were worrying about. All such might help to clear the doubts of the workers toward the agents and to secure their confidence in the inquiry. It is only through such educative works which help to lead the workers into a clear understanding of the inquiry that a satisfactory system of investigation might be worked out, upon which the securing of valid statistical information depends.

II. COMPOSITION OF THE HOUSEHOLD

Size of the Families. There are in the 305 families under investigation a total population of 1,410 persons, of which 707 being male members and 703 female ones.[1] Classifying the families of the different income groups according to the number of persons in each, an idea as to what is the size of an average working family is obtainable as shown in Table II.

TABLE II. FAMILIES CLASSIFIED BY INCOME AND SIZE GROUPS*

Income group	Number of families	Number of families in different size groups									Average number of family members per family	Average number of boarders per family	Average size of a family
		2 persons	3 persons	4 persons	5 persons	6 persons	7 persons	8 persons	9 persons	10 persons			
$200—299.99	62	3	20	21	13	5					3.95	.18	4.13
300—399.99	95	6	24	30	20	13	2				4.17	.36	4.53
400—499.99	80	3	11	20	16	19	10	1			4.89	.56	5.45
500—599.99	31		2	8	12	4	2	2	1		5.19	.94	6.13
600—699.99	25		2	5	4	4	4	5		1	5.92	.56	6.48
700 and above	12		1	2	2	4	1	1	1		5.75	1.50	7.25
Total or average	305	12	60	86	67	49	19	9	2	1	4.62	.47	5.09
Percentage	100.00	3.93	19.67	28.20	21.97	16.06	6.23	2.95	.66	.33			

* Including children born and persons passed away during the period of inquiry.

The above figures show that the average working family in Shanghai consists of 4.62 persons, or of 5.09 persons including boarders. The result agrees quite closely with the 4.98 persons per family reached at in the census of the Bureau of Public Safety in 1928.[2] A great majority of 262 families or 85.90 per cent of the total, are families of from 3 to 6 persons and the number of persons in a familiy is in direct proportion to its income. The mere deviation from the conclusion seems to be the group of families with an income of $700 and above per year, the average size of which is a little smaller than that of the next largest income group. Taking the number of boarders into consideration, however, the statement still holds true.

TABLE III. FAMILY MEMBERS CLASSIFIED ACCORDING TO THEIR RELATIONSHIP TO THE HEAD OF FAMILY

Relationship	Number of persons	Percentage	Relationship	Number of persons	Percentage
Husband (head of family)	305	21.63	Grand-son	8	.57
Wife	299	21.21	Grand-daughter	5	.35
Son	305	21.63	Elder brother's wife	2	.14
Daughter	239	16.95	Cousin	1	.07
Father	28	1.99	Sister's son	2	.14
Mother	85	6.03	Sister's daughter	3	.21
Elder brother	5	.35	Nephew	6	.43
Younger brother	41	2.91	Niece	3	.21
Elder sister	2	.14	Wife's sister	1	.07
Younger sister	24	1.70	Younger brother's wife	5	.35
Grand-father	1	.07	Son-in-law	2	.14
Grand-mother	2	.14	Father-in-law	1	.07
Uncle	2	.14	Mother-in-law	2	.14
Aunt	1	.07			
Daughter-in-law	30	2.13	TOTAL	1,410	100.00

[1] See Table VI.

[2] Refer to Chapter I.

Relationship of the Family Members. By family members in Table III is meant those who are related in kinship and who give up their incomes, if they are gainfully employed, to the support of the family and live on it, in which are included husband and wife, parents and children, and other members who make the family one unit of consumption. Female kinswomen who have taken husbands and male kinsmen who have settled down separately and are economically independent are not included in the family as is here defined. The members of the 305 families are distributed according to their relationship to the heads of the respective families.

The Simple Constitution of Working Families. Though the distribution shows a gathering together of all members of kith and kin in a family, a definite tendency toward a simpler constitution of the Chinese working families is shown. Of the 1,410 persons in the 305 families, 81.42 per cent consist of husbands and wives and their children, 13.12 per cent of parents, brothers and sisters, and only 5.46 per cent of members of other relations. The "large family system" of old days still prevailing in rural communities has, indeed, gradually disappeared in industrialized cities. The high cost of living in Shanghai has made impossible for the working people to maintain idle members in the family upon the meagre income they earn. The mass of population, who quit their homes in the country and flock into the city are mostly youthful and physically able persons, and even their children, who have not come of age, have sometimes to work for little earnings to the support of their parents. The aged members of the family have, in most cases, to remain in their country homes and live on whatever means they have on their farms. Indeed, last traces of the old Chinese large families are not entirely impossible to be found in some of the families which as shown in the above table are a conglomeration of brother's wives, daughters-in-law, nephews, etc. In the above table, some of the sister's children, wife's sisters, parents-in-law, or other similar relatives are also included in the family, as they are found to have lived in the family and shared its consumption. On the whole, the working families in Shanghai are essentially simple and small ones, each of which consists in average of a husband, a wife, a son, 0.80 of a daughter, and 0.82 of other members, or a total of 4.62 persons.

Boarders of the Households. Besides the family members, a household may also contain a number of boarders who may find it inconvenient for them to prepare their own food, and choose to have their meals with the families of certain relatives or friends, to whom a sum of money is paid. Among the families covered in the present investigation, 75 are found to have been keeping boarders. There are altogether 140 boarders, 8 of them are at the same time lodgers in their respective boarding families. The number of boarders in each family varies from 1 to 8 persons, and the duration of boarding within the period of inquiry varies from one month

TABLE IV. BOARDERS IN THE FAMILIES

Number of boarders	Number of families	Period of boarding: 1 mo.	2 mo.	3 mo.	4 mo.	5 mo.	6 mo.	7 mo.	8 mo.	9 mo.	10 mo.	11 mo.	12 mo.	Total	Percentage
1	31	8	7	2	1	3	1	2		2	1	1	3	31	22.1
2	33	24	12	11	5	5	3		1		2	2	1	66	47.1
3	6	3	2	3	5			1					4	18	12.9
4	3	1		4			1	1			2		3	12	8.6
5	1	1	1	1	1								1	5	3.6
6															
7															
8	1					1		1	6					8	5.7
TOTAL	75	37	22	21	12	9	5	5	7	2	5	3	12	140	100.0
Percentage		26.4	15.7	15.0	8.6	6.4	3.6	3.6	5.0	1.4	3.6	2.1	8.6	100.0	

to a year. Detailed analysis is shown in Table IV. In later discussions on food and fuel consumption and on the nutriment derived from food consumed, considerations must be taken of this class of boarders in the families as they also share a portion of the food and fuel and light consumption of the family.

The Families Converted to Terms of a Common Consumption Unit. The foregoing analysis of the size of the families is made irrespective of the age and sex of the householders. The amount of consumption, however, varies with ages and differs between sexes. A five-person family, say, of four adults and one child is in no way comparable with one of two adults and three children. In order to secure comparability among the families, therefore, the data for families of different size shall be reduced to terms of a common consumption unit. The unit may be, for example, the consumption of an adult, and children and female members of the families are converted to terms of the unit chosen in proportion of their relative consuming ability. Various scales, which differ from one another in consequence of the different methods of derivation employed, have been worked out in different countries. Among the scales are the Atwater scale, which takes as unit of consumption a male adult of 17 year of age and over; the Lusk scale, which takes as unit a male adult of 14 and over; and the Amsterdam scale, which was constructed in connection with the inquiry conducted in that town in March 1917, and the United States scale, which was first used in the United States inquiry of 1901 to 1902, both of which take as unit a male adult of 15 and over. These scales are based on the consumption of food only. Two more scales, the German scale drawn up by the German Statistical Office and the Amsterdam scale constructed by the Commonwealth Bureau of Census and Statistics, are based on the consumption of other groups of commodities as well as food. The former takes the consumption of a male adult of 19 and over as unit, and the latter that of a male adult of 17 and over. In addition to these scales, the "quet" system elaborated by Dr. Ernst Engel is one of the earliest and best known. The unit of scale is the consumption of a newly-born child, and maximum consumption is reached by a woman at the age of 20 and by a man at the age of 25. In China, no attempt has as yet been made to work out a system of uniform consumption unit. In inquiries of various kinds, therefore, foreign scales have to be used. Among the scales, the Atwater has been most widely employed in China, and is adopted in the present study as well as in inquiries conducted by the Social Research Department, Peiping, and other institutions. The Atwater scale is based on dietary studies made in New York in 1895 and 1896 by Professor Atwater and Mr. Wood, slight changes having been subsequently introduced. It was used by Mr. Rowntree for food requirements, in connection with his investigation in York in 1899 to 1901. A variation of the scale was used in the compilation of the results of the inquiry conducted by the Osaka Municipal Bureau of Labor Research in 1919 to 1920. The scale runs as follows:[1]

Age	Male	Female
Under 2	30	30
2 and under 6	40	40
6 and under 10	50	50
10 and under 12	60	60
12 and under 13	70	60
13 and under 15	80	70
15 and under 17	90	80
17 and above	100	80

[1] For details regarding methods of reducing data for families of different size to terms of a common unit, see "Methods of Conducting Family Budget Enquiries", pp. 48-54.

According to the above scale, the number of equivalent male adults in the 305 families is computed. It is found that an average working family in Shanghai consists of 3.28 equivalent male adults, or 3.42 adults including boarders. A great majority of 224 families or 73.4 per cent of the total are families of from 2 to less than 4 equivalent male adults. When distributing families of different size according to income groups, the number of equivalent male adults in the families is in direct proportion to their income. Families in the highest income group of $700 and over are found to include in average the largest number of 4.38 equivalent male adults, boarders included, per family. When boarders are excluded, the largest average number of adults is found in the second highest income group of from $600 to less than $700.

TABLE V. NUMBER OF EQUIVALENT MALE ADULTS IN FAMILIES OF DIFFERENT INCOME GROUPS*

Income group	Number of families	Families with a total number of equivalent male adults of										Average number of family members per family in terms of equivalent male adults	Average number of boarders per family in terms of equivalent male adults	Average equivalent male adults per family (including boarders)
		— 1.99	2.– 2.49	2.5– 2.99	3.– 3.49	3.5– 3.99	4.– 4.49	4.5– 4.99	5.– 5.49	5.5– 5.99	6 —			
$200—299.99	62	6	15	18	13	9	1					2.81	.04	2.85
300—399.99	95	9	21	22	21	15	3	2	2			2.94	.15	3.09
400—499.99	80	2	12	16	4	20	13	10	3			3.50	.11	3.61
500—599.99	31		1	8	4	9		4	4	1		3.75	.27	4.02
600—699.99	25	2	2	3	2	4	2	1	5	1	3	4.10	.13	4.23
700 and above	12			3		2	4		2		1	3.85	.53	4.38
Total or average	305	19	51	70	44	59	23	17	16	2	4	3.28	.14	3.42
Percentage	100.0	6.2	16.7	23.0	14.4	19.3	7.5	5.6	5.3	.7	1.3			

* Boarders of the families or children born and persons passed away during the inquiry are converted to terms of male equivalent adults according to their respective period of boarding or their actual period of existence in the twelve months during which the investigation lasted.

Size of Shanghai Working Families Compared with Families of other Rural and Urban Communities.

A comparison of the average size of the Shanghai working families with that of other rural as well as urban communities as found in different inquiries might be interesting to be noted here. The inquiries of 240 villages in Chili, Shantung, Kiangsu and Chekiang provinces, covering 7,097 families, made by the China International Famine Relief Commission in 1922, gave 5.35 persons as the average size of a family.[1] The survey of 102 farms near Wuhu, Anhwei, made by the College of Agriculture and Forestry, University of Nanking, in the same year, fixed the number at 5.4 persons.[2] A similar survey of 150 farms, Yenshan County, Chili, made by the same institution, fixed the number at 5.35 persons.[3] The inquiry of 84 families in Peiping West,

[1] Taylor, J. B., "The Study of Chinese Rural Economy", China International Famine Relief Commission, Publication Series B, No. 10, 1924, p. 14.

[2] Buck, J. L., "An Economic and Social Survey of 102 Farms near Wuhu, Anhwei, China", University of Nanking, Agriculture and Forestry Series, Vol. I, No. 7, 1923, p. 8.

[3] Buck, J. L., "An Economic and Social Survey of 150 Farms, Yenshan County, Chili Province, China", College of Agriculture and Forestry, University of Nanking, Bulletin No. 13, 1926, p. 62.

made by the Tsing Hua University, Peiping, in 1923, arrived at an average of 4.9 persons.[1] The inquiries of 100 families in Kua Chia T'un Village near Peiping suburb, made by the Yenching University, Peiping, in 1927, gave a lower average of 4.06 persons.[2] In 1930, the inquiry into the living conditions of the rural population in the Shanghai Civic Centre, covering 8 districts and 106 families, conducted by the Bureau of Social Affairs, arrived at the result of 5.3 persons per family.[3] The above inquiries are confined to rural communities and information is obtained by questionaires. Similar data on urban families are also obtainable from various sources. The Social Research Department, Peiping, had conducted a family budget inquiry of 48 working families in Peiping, mostly families of ricksha coolies, during the period from October 1926 to March 1927, and arrived at the result that the average family was of the size of 4.58 persons or 3.38 equivalent male adults according to Atwater scale.[4] A similar inquiry of the factory workers in Tangku was conducted by the same institution in 1926, covering 61 families, which gave 3.72 persons or 2.74 equivalent male adults as the average size of a family.[5] The Nankai University Committee on Social and Economic Research, Tientsin, conducted an investigation during the period from September 1927 to June 1928, covering 132 working families in Tientsin which were found to be consisted in average of 4.3 persons or 3.4 equivalent male adults per family.[6] The study of the living standard of 230 cotton mill working families in the western district of Shanghai, conducted jointly by the former Bureau of Markets of Shanghai and the Institute of Social Research of Peiping during November 1927 to October 1928, arrived at the result of 4.62 persons per family, or 4.77 persons including boarders which is equivalent to 3.77 male adults according to Atwater scale.[7] Thus far a conclusion is derivable that the average size of a rural family is generally larger than that of an urban one. The size of average rural families, as found in the different inquiries, is well above 5 persons, the mere exception being those of Kua Chia T'un Village. In fact, it is situated at the close outskirts of Peiping, and the inhabitants therein comprise mostly, instead of farm workers, but of craftsmen, ricksha coolies, servants, and junior staffs of various institutions; such indeed are not to be considered as a true rural community.[8]

Average Family Size in Foreign Countries.

Comparing with the data on the average family size in foreign countries, the result of the present inquiry also shows close agreement. The investigation conducted by the United States Bureau of Labor Statistics in 1918 and 1919, covering 12,096 working families in 92 cities, found that the size of the families varied from 4.5 to 5.3 persons, averaging 4.9 persons per family.[9] The result of the 1920 census in New York

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1 陳達, 社會調查的嘗試, 清華學報, 第一卷, 第二期, 民國十三年十二月, 北平清華學校, 第 324 頁.

2 李景漢, 北平郊外鄉邨家庭, 民國十八年五月, 北平社會調查部, 第 15 頁.

3 "上海市中心區百零六戶農民生活狀況調查錄", 社會月刊, 第二卷第十二號, 二十年六月, 上海市社會局編.

4 Tao, L. K., Livelihood in Peking, Social Research Department, Peiping, 1928, pp. 42-43.

5 Sung-ho Lin, Factory Workers in Tangku, Social Research Department, Peiping, 1928, p. 95.

6 Feng, H. N., An Enquiry into the Family Budget of the Handicraftsmen in Tientsin, 1927-1928, The Quarterly Journal of Economics and Statistics, Vol. I, No. 3, Nankai Institute of Economics, Nankai University, Tientsin.

7 Simon Yang and L. K. Tao, A Study of the Standard of Living of Working Families in Shanghai, Social Research Department, Peiping, p. 19.

8 李景漢, 北平郊外鄉邨家庭序言.

9 Cost of Living in the United States, Bulletin No. 357, published by the Bureau of Labor Statistics, U. S. Department of Labor, 1924, pp. 1-2, 5-6.

City gave an average of 4.4 persons per family,[1] and that of the working class budget in Bombay, which covered no less than 2,473 working families and lasted from May 1921 to April 1922, gave an average of 4.2 persons excluding dependents living away from the family.[2]

Age and Sex Distribution. Of the total population of the 305 families investigated, an even distribution between the male and female members is shown, the former constitute 50.14 per cent of the total, and the latter 49.86 per cent. A distribution of the male and female members by age groups, as shown in Table VI, indicates that no definite correlation is detectable between the different classes of ages and the different sexes. The average age of the male heads of the families is calculated at 35.07 years; that of sons 8.69 years, and that of other male members 30.81 years. The average age of the wives is 31.63, which is 3.34 years below that of the husbands; that of the daughters is 7.9, and that of other female members is 38.79. The average age of all the male members is figured at 23.10, and that of female members at 25.24. Taking male and female members together, 24.17 is the average age. The members of the different age groups are divisible into three periods: the 486 members or 34.5 per cent of the total in the groups of from less than 1 to 14 years of age are attributed to the period of childhood, the 793 members or 56.2 per cent in the groups of from more than 14 to 49 years are considered to be of full age, and the 131 members or 9.3 per cent of 50 years or over belong to the period of old age.

TABLE VI. AGE AND SEX DISTRIBUTION OF THE FAMILY MEMBERS*

Age group	Males				Females				Males and females	Percentage	
	Heads of family	Sons	Others	Total	Wives	Daughters	Others	Total			
— 4		117	6	123		98	5	103	226	16.03	
5 — 9		76	4	80		52	9	61	141	10.00	34.47
10 — 14		49	16	65		45	9	54	119	8.44	
15 — 19	4	31	11	46	18	36	28	82	128	9.08	
20 — 24	36	25	14	75	63	8	16	87	162	11.49	
25 — 29	48	3	7	58	68		4	72	130	9.22	
30 — 34	72	2	2	76	41		2	43	119	8.44	56.24
35 — 39	61	2	2	65	42		3	45	110	7.80	
40 — 44	28		2	30	34		3	37	67	4.75	
45 — 49	34		7	41	20		16	36	77	5.46	
50 — 54	14		10	24	10		18	28	52	3.69	
55 — 59	4		5	9	2		20	22	31	2.20	
60 — 64	4		6	10	1		12	13	23	1.63	9.29
65 — 69			3	3			11	11	14	.99	
70 — 74			2	2			4	4	6	.43	
75 and above							5	5	5	.35	
Total	305	305	97	707	299	239	165	703	1,410	100.00	
Percentage	21.63	21.63	6.88	50.14	21.21	16.95	11.70	49.86	100.00		

* According to our system of reckoning ages, a newly born child is considered as one year of age, and he or she is two years old on the very first day of the next year. Thus the Chinese age is always one year above the real age. In the present inquiry, the age of all members has been deducted by one year in order to arrive at the real ages of the respective members.

Shanghai Working Population, a Growing One. Tabulating the result of the present inquiry together with similar data on the distribution of working population according to age groups obtained from various other inquiries, the proportion among the three periods of ages is found to be approximately the same in the data from different sources. In the group of from

[1] The Cost of Living in New York City, 1926, published by National Industrial Conference Board, Inc., New York.

[2] Shirras, G. F., Report on an Enquiry into Working Class Budgets in Bombay, published by Labour Office, Government of Bombay, 1923, pp. 1 and 6.

TABLE VII. POPULATION IN DIFFERENT LOCALITIES CLASSIFIED ACCORDING TO AGE GROUPS

Age group	Shanghai (Laborers)	Shanghai (Cotton mill workers)	Eastern and Central China* (264 farm families)	Tangku (Salt refinery workers)	Kua Chia T'un (Villagers)	Peiping (Ricksha coolies)
— 14	34.5	26.6	34.7	35.2	27.1	40.5
15 — 49	56.2	62.6	52.7	58.6	53.0	48.6
50 and above	9.3	10.8	12.6	6.2	19.9	10.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

* Buck, J. L., Chinese Farm Economy, p. 336, 1930.

less than 1 to 14 years of age, the percentage is lowest in Shanghai cotton mill workers and highest in Peiping ricksha coolies, and in that of from more than 14 to 49 years, the percentage is highest in the former and lowest in the latter. The percentage distribution of Shanghai laborers in general among the three periods is very close to the mean of the figures for rural population in eastern and central parts of China and those for Tangku factory workers. It is evident from Table VII that relatively higher percentage of persons over 50 years of age is found in the two data of rural people than in those of urban workers. This might be explained by the fact, which had been touched upon in a previous passage, that the working population in the urban communities consist mostly of youthful and able persons, while the aged members are likely to stay in their farms. According to the theory of Sundbärg, the population in different localities of the world might be classified according to their respective percentage distribution among the three periods of ages intc that which is growing, stable or diminishing. A population with 40 per cent of persons below 15 years of age and 10 per cent over 50 years belongs to the first class, one with 33 per cent below 15 and 17 per cent over 50 to the second, and one with 20 per cent below 15 and 30 per cent over 50 to the last. Judging from this criterion and disregarding all other factors which contribute to the increasing or diminishing size of the labor force, the Shanghai working class in general belongs to the class of growing population as they are composed of about 35 per cent of children under 15 and less than 10 per cent of aged persons over 50.

Occupational Distribution. That the present inquiry might be representative of the different occupational groups in Shanghai, efforts have been made that a proper distribution of the employed members among the different occupations according to their relative importance should be effected. According to Table VIII, of the 629 gainfully occupied members, 60.26 per cent are textile workers including those employed in cotton spinning, cotton weaving, silk reeling, knitting and other industries. The rest are evenly distributed among other principal industries and services. Factory workers form the bulk of the members under investigation, they constitute as much as 88.39 per cent of the total. Non-factory workers form 11.61 per cent of the total, among whom are wharf workers, ricksha coolies, peddlers, servants and others. In order to arrive at a clearer insight of the occupational distribution, the occupied members are further classified according to their age and sex. Of the total employed members, 44.04 per cent or 277 persons are husbands who are usually heads of the families, and 22.26 per cent or 140 persons are wives. Most of the male members are employed in cotton spinning, cotton weaving, machinery and tobacco industries; while the bulk of the female members find their work in cotton spinning, cotton weaving, silk reeling, and match-making establishments, particularly in cotton

spinning mills. As a rule, very little skill is required of cotton mill workers, and the managements find it advantageous to take into employment female or child workers, usually at a much lower pay than that of male workers.

TABLE VIII. OCCUPATIONAL DISTRIBUTION OF THE GAINFULLY OCCUPIED MEMBERS OF THE FAMILIES

Industries or occupations	Males				Females				Males and females	Percentage	
	Husbands	Other adults	15 years of age and below	Total	Wives	Other adults	15 years of age and below	Total			
Silk reeling	4	1		5	9	3	2	14	19	3.02	
Cotton spinning	73	35	10	118	74	50	34	158	276	43.88	
Silk weaving	1			1	2			2	3	.48	60.26
Cotton weaving	38	7		45	21	12	1	34	79	12.56	
Cotton silk knitting					1	1		2	2	.32	
Matches	16	4		20	13		1	14	34	5.40	6.35
Chemicals	2	2		4	1	1		2	6	.95	
Machinery	42	7		49					49	7.79	9.54
Building	7	4		11					11	1.75	
Food	8	2		10	6	1		7	17	2.70	7.79
Tobacco	18	6		24	7	1		8	32	5.09	
Water & electricity	9	1		10					10	1.59	4.45
Printing	16	1		17	1			1	18	2.86	
Wharf worker	10			10					10	1.59	
Rickshaw coolie	7	7		14					14	2.23	
Peddler	7	3		10					10	1.59	11.61
Personal service	14	4	1	19	1			1	20	3.18	
Miscellaneous	5	7	3	15	4			4	19	3.02	
Total	277	91	14	382	140	69	38	247	629	100.00	
Percentage	44.04	14.47	2.22	60.73	22.26	10.97	6.04	39.27	100.00		

It might be interesting to inquire into the relationship between the number of employed members in a family and the amount of its income. It is found by a distribution of the employed members according to income groups as shown in Table IX that an average of 2.06 persons per family were employed, approximately one out of every two members. Relatively greater number of employed members were found in families of larger income. An average of 1.82 employed is found in the lowest income group of from $200 to less than $300 per annum, and the highest average of 2.42 employed in those of from $500 to less than $600.

TABLE IX. GAINFULLY EMPLOYED MEMBERS CLASSIFIED ACCORDING TO INCOME GROUPS

Income group	Number of families	Average number of persons per family	Families whose gainfully employed members amounting to					Average number of persons gainfully employed per family
			1 person	2 persons	3 persons	4 persons	5 persons	
$200 — 299.99	62	3.95	19	36	6	1		1.82
300 — 399.99	95	4.17	24	55	15	1		1.93
400 — 499.99	80	4.89	19	34	20	7		2.19
500 — 599.99	31	5.19	8	10	7	4	2	2.42
600 — 699.99	25	5.92	8	8	4	4	1	2.28
700 and above	12	5.75	5	4		2	1	2.17
Total or average	305	4.62	83	147	52	19	4	2.06
Percentage	100.00		27.21	48.20	17.05	6.23	1.31	

Unemployment during the Period of Inquiry.

During the period of inquiry, as many as 55 persons, or 8.74 per cent of the total employed members had lost their jobs. As was manifested in the foregoing section, there were but 2.06 gainfully employed members in a family of 4.62 persons. The loss of employment to the 55 members, therefore, would deprive the means of living of more than double of that many persons. The inevitable result would be to enhance the already heavy burden of some of the members who were fortunate enough to be able to retain their jobs.

TABLE X. UNEMPLOYMENT DURING THE PERIOD OF INQUIRY

Industries or occupations	Family relationship					Total
	Husbands	Wives	Sons	Daughters	Others	
Silk reeling		1				1
Cotton spinning	10	8	4	5	2	29
Silk weaving		1				1
Cotton weaving	2	6			2	10
Building			1			1
Food	2	3				5
Tobacco	1	1				2
Water and electricity					1	1
Ricksha coolie					1	1
Personal service	1					1
Miscellaneous	1		1		1	3
Total	**17**	**20**	**6**	**5**	**7**	**55**

III. INCOME AND EXPENDITURE

What are the Items of Income and Expenditure?

Before entering into a discussion of the income and expenditure of the families, it should be made clear at the outset as to what are the essential constituents of the terms as are employed in this study. On the income side are included all money receipts or receipts in service or kinds, the value of which is estimated, derived from the earnings of the householders, gains from investments and other capital, rentals on spare rooms sublet to others, presents or gifts received, etc. Other receipts in the form of borrowings or money obtained on articles pawned are strictly speaking not real income and are classified as nominal income. By expenditure is meant all money payments, or money value of payments in the form of service or kinds, for rentals due, for interest on borrowed funds, for service obtained, for presents or gifts to relatives or friends, etc. Here again nominal items of expenditure such as refunding of debts or redemption of pawned articles are not to be included under the real one.

Items of Income.

The income data of the 305 families are grouped under seven items, namely, (1) wages for labor done or service rendered, (2) earnings from sublet spare rooms, (3) income from boarders, (4) income in the form of gifts, (5) financial support from relatives or friends, (6) income from peddlery, and (7) other incomes, including presents or gifts received on festivals, birthdays, weddings or funerals, income of children engaged in picking up coal dust or waste timber, interest on loans, and such other receipts not otherwise grouped. It has been quite a common practice among the laboring families as well as families of small means in Shanghai to rent a house or a part of it and sublet spare rooms to others, deriving therefrom some profit. In entering the payment from lodgers as an item of income, a portion of it which is used to defray a part of the original rental proportional to the space occupied by the lodgers shall be deducted, and the earnings from sublet rooms represent only the net profit gained. A part of the income from boarders is actually spent by the family in providing for the food they consume. It is, however, very hard to determine what portion of the total food expenses is consumed by the boarders and what of their payments represents the net earnings. Moreover, the boarders' payments do not constitute a very significant item of the total income, and no attempt is made to investigate into the net profit derived from taking boarders into the families. Table XI shows the average income of the families during the period of inquiry.

Wages the Chief Item of Income.

A careful review of Table XI discloses certain outstanding features. First, that wages form by far the most important item of income indicates that the working population in Shanghai are justly considered to be living from hand to mouth. With the mere exception of families in the highest income group of $700 and above per year, the renumeration for labor done or service rendered constitute in all the families well above 85 per cent of their total income. It is also shown that the smaller is the income of a family, the greater will be the percentage of wages, and vice versa. To the wretched working families, therefore, almost all other means of earnings except wages are denied. They will automatically fall into a state of absolute misery, if ever their jobs should be lost.

The House Heads Take up Major Portion of the Family Burden.

Second, of all the gainfully occupied members of the families, the husbands or the heads of the respective households contribute in average a sum of $222.05 each to the yearly income of the families, and the wives a sum of $52.50 each. The average earnings of the husband and wife taken together form the source of two thirds of the total family income. Here again the percentage constituted by the earnings

TABLE XI. ITEMS AND AMOUNT OF INCOME OF THE FAMILIES CLASSIFIED ACCORDING TO INCOME GROUPS

Income group	Number of families	Average number per family of		Avearge wages earned by					Average wages per family	Other income in the form of						Average other income per family	Average total income per family
		Persons	Adult equivalents	Husbands	Wives	Sons	Daughters	Others		Earnings from sublet rooms	Income from boarders	Presents or gifts received	Financial support from relatives or friends	Income from peddlery	Other income		
$				$	$	$	$	$	$	$	$	$	$	$	$	$	$
200—299.99	62	3.95	2.81	160.29	56.67	7.53	11.52	9.26	245.27	1.23	2.06	3.81	3.92	4.82	5.22	21.06	266.33
300—399.99	95	4.17	2.94	191.15	59.92	17.82	26.69	9.88	305.46	6.04	7.08	4.59	3.11	1.74	16.46	39.02	344.48
400—499.99	80	4.89	3.50	213.54	55.61	30.83	42.62	45.70	388.30	9.03	16.12	2.75	3.51	3.67	20.09	55.17	443.47
500—599.99	31	5.19	3.75	269.43	39.93	46.40	43.26	71.06	470.08	10.88	18.55	17.65	10.94	2.45	15.71	76.18	546.26
600—699.99	25	5.92	4.10	365.17	30.99	67.02	25.64	61.72	550.54	21.07	14.54	21.32	5.46	.03	31.72	94.14	644.68
700 and above	12	5.75	3.85	422.00	28.66	82.80	21.96	49.63	605.05	14.52	37.63	67.46	4.63		43.85	168.09	773.14
Total or average	305	4.62	3.28	222.05	52.50	28.63	29.17	31.18	363.53	7.90	11.41	9.12	4.43	2.74	17.38	52.98	416.51
PERCENTAGE																	
$																	
200—299.99	20.3			60.2	21.3	2.8	4.3	3.5	92.1	.5	.8	1.4	1.5	1.8	1.9	7.9	100.00
300—399.99	31.2			55.5	17.4	5.2	7.7	2.9	88.7	1.7	2.1	1.3	.9	.5	4.8	11.3	100.00
400—499.99	26.2			48.2	12.5	7.0	9.6	10.3	87.6	2.1	3.6	.6	.8	.8	4.5	12.4	100.00
500—599.99	10.2			49.3	7.3	8.5	7.9	13.0	86.0	2.0	3.4	3.2	2.0	.5	2.9	14.0	100.00
600—699.99	8.2			56.6	4.8	10.4	4.0	9.6	85.4	3.3	2.3	3.3	.8		4.9	14.6	100.00
700 and above	3.9			54.6	3.7	10.7	2.8	6.4	78.2	1.9	4.9	8.7	.6		5.7	21.8	100.00
Total or average	100.0			53.3	12.6	6.9	7.0	7.5	87.3	1.9	2.7	2.2	1.1	.6	4.2	12.7	100.00

of the husband and wife varies inversely with the size of the family income. In families under the income group of $200.00 to 299.99, the earnings of husband and wife amount to 81.5 per cent of the total; while in those under the group of $700 and above, they amount only to 58.3 per cent. It can be inferred that in a family of relatively lower income, there are usually smaller number of gainfully occupied members, and consequently the more precarious would be the status of the family as any accidents, unemployment, sickness or death happened to the sole income earner or income earners might bring the family into deep distress. On the other hand, in order to provide the household with comparatively more ample means not only the adult members of the families, but children under normal age, are often forced to take up work and contribute their meagre earnings to the family income.

Comparatively More Sources of Income for Shanghai Working Families.

Third, the percentage which wages constitute of the total income of Shanghai working families, though high enough as to form an average of 87.3 per cent, is yet much lower than that in other localities or different classes of workers. Wages of Shanghai cotton mill working families constitute, on the average as high as 95.5 per cent of the family income; [1] those of factory workers in Tangku, 94.9 per cent; [2] and those of ricksha coolies in Peiping, 90.5 per cent.[3] Indeed, it is inferable from the above comparison that Shanghai working families in general are provided with more sources of income and show less dependence on wages as the sole means of living; it should, however, not conclude too abruptly that these families are necessarily financially better off than those of other localities or classes of workers.

Items of Expenditure.

The items of expenditure which every working family has to meet daily are grouped under five main classes, food, rent, clothing, fuel and light, and miscellaneous items. Out of the average yearly expenditure of $454.38 per family or $135.16 per equivalent adult, three-fourths are expenses for food, lodging, clothing, and fuel and light, and the other one-fourth on social intercourse, amusements, education, and such other items under the miscellaneous group. Table XII gives the distribution of the average expenditure per family and per equivalent adult among the different groups of consumption.

Conformity of Data for Food, Rent and Miscellaneous Expenses with Engel's Laws of Consumption.

First, it might be interesting to note how far do the present data on the average expenditure of Shanghai working families conform with the Engel's laws of consumption, which state that an increase in income is associated with (1) declining proportion of the budget spent for food, (2) about the same proportion spent for rent, fuel and light, and (3) an increasing proportion for education, health, recreation, amusement, etc. The present budget shows a decrease in the percentage for food and an increase in the percentage for miscellaneous items in families of higher income groups, and is in conformity with the first and third of Engel's laws which have been proved true in many an inquiry in various countries. With regard to rent, the proportion spent for it remains the same in families of different income levels. However, deviation from what is stated in the second of Engel's laws is shown in that the percentage for clothing expenses instead of remaining the same, tends to move upward and that for fuel and light expenses to move downward as the income level of a family rises. The invalidity of the second law has been pointed out in various cost-of-living studies at home or abroad.

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1 Simon Yang and L. K. Tao, op. cit., p. 34.

2 Sung-ho Lin, op. cit., p. 76.

3 Tao, L. K., op. cit., p. 53.

TABLE XII. ITEMS AND AMOUNT OF EXPENDITURE PER FAMILY AND PER EQUIVALENT MALE ADULT CLASSIFIED ACCORDING TO INCOME GROUPS

Income group	Number of families	Average number per family of Persons		Average number per family of Adult equivalents		Average expenditure for Food		Rent		Clothing		Fuel and light		Miscellaneous		Total	
		Not including boarders	Including boarders	Not including boarders	Including boarders	Per family	Per adult equivalent	Per family	Per adult equivalent	Per family	Per adult equivalent	Per family	Per adult equivalent	Per family	Per adult equivalent	Per family	Per adult equivalent
$						$	$	$	$	$	$	$	$	$	$	$	$
200—299.99	62	3.95	4.13	2.81	2.85	191.47	67.18	28.16	10.02	20.80	7.40	26.32	9.24	70.45	25.07	337.20	118.91
300—399.99	95	4.17	4.53	2.94	3.09	209.61	67.83	34.23	11.64	24.69	8.40	26.04	8.43	90.60	30.82	385.17	127.12
400—499.99	80	4.89	5.45	3.50	3.61	258.65	71.65	36.59	10.45	34.65	9.90	29.78	8.25	106.47	30.42	466.14	130.67
500—599.99	31	5.19	6.13	3.75	4.02	289.59	72.04	49.29	13.14	47.96	12.79	32.17	8.00	146.93	39.18	565.94	145.15
600—699.99	25	5.92	6.48	4.10	4.23	321.16	75.92	54.83	13.37	59.18	14.43	35.71	8.44	197.42	48.15	668.30	160.31
700 and above	12	5.75	7.25	3.85	4.38	349.26	79.74	59.43	15.44	83.38	21.66	38.94	8.89	264.78	68.77	795.79	194.50
Total or average	305	4.62	5.09	3.28	3.42	241.54	70.63	37.83	11.53	34.01	10.37	29.00	8.48	112.00	34.15	454.38	135.16

PERCENTAGE

$													
200—299.99	20.3	56.8	56.5	8.3	8.4	6.2	6.2	7.8	7.8	20.9	21.1	100.0	100.0
300—399.99	31.2	54.4	53.4	8.9	9.2	6.4	6.6	6.8	6.6	23.5	24.2	100.0	100.0
400—499.99	26.2	55.5	54.8	7.8	8.0	7.4	7.6	6.4	6.3	22.9	23.3	100.0	100.0
500—599.99	10.2	51.2	49.6	8.7	9.1	8.5	8.8	5.7	5.5	25.9	27.0	100.0	100.0
600—699.99	8.2	48.1	47.4	8.2	8.3	8.9	9.0	5.3	5.3	29.5	30.0	100.0	100.0
700 and above	3.9	43.9	41.0	7.4	7.9	10.5	11.1	4.9	4.6	33.3	35.4	100.0	100.0
Total or average	100.0	53.2	52.2	8.3	8.5	7.5	7.7	6.4	6.3	24.6	25.3	100.0	100.0

TABLE XIII. A COMPARISON OF THE LIVING COST IN THE DIFFERENT INDUSTRIAL AND RURAL COMMUNITIES IN CHINA

Localities	Investigating agency	Period of investigation	Type of workers	Average yearly expenditure per family					
				Food	Rent	Clothing	Fuel and light	Miscellaneous	Total
				$	$	$	$	$	$
1. Shanghai	Bureau of Social Affairs, Shanghai	1929—1930	Mostly factory workers	241.54	37.83	34.01	29.00	112.00	454.38
2. Tangku	Social Research Department, Peiping	1927	Salt refinery workers	122.73	15.65	20.95	17.77	43.27	220.37
3. Shanghai	National Tariff Commission, Shanghai	1927—1928	Cotton mill workers	218.52	25.08	36.72	29.40	80.40	390.12
4. North China and East Central China, 6 Provinces	University of Nanking, College of Agriculture and Forestry, Nanking	1921—1925	Farmers	136.29	11.32	17.31	25.32	38.08	228.32
5. Tientsin	Nankai Institute of Economics, Tientsin	1927—1928	Mostly handicraft workers	131.51	29.89	12.88	26.40	11.34	212.02
6. Kua Chia T'un, Peiping	Yenching University, Peiping	1927	Rural population in Peiping suburb	105.40	7.21	12.62	13.05	25.72	164.00
7. Peiping	Social Research Department, Peiping	1926—1927	Mostly ricksha coolies	144.50	15.26	13.88	22.96	6.32	202.92
			PERCENTAGE						
1. Shanghai			Mostly factory workers	53.2	8.3	7.5	6.4	24.6	100.0
2. Tangku			Salt refinery workers	55.7	7.1	9.5	8.1	19.6	100.0
3. Shanghai			Cotton mill workers	56.0	6.4	9.4	7.5	20.6	100.0
4. North China and East Central China, 6 Provinces			Farmers	58.9	5.3	7.3	12.3	16.2	100.0
5. Tientsin			Mostly handicraft workers	62.0	14.1	6.1	12.5	5.3	100.0
6. Kua Chia T'un, Peiping			Rural population in Peiping suburb	64.3	4.4	7.7	7.9	15.7	100.0
7. Peiping			Mostly ricksha coolies	71.2	7.5	6.9	11.3	3.1	100.0

A Better Standard of Life than other Localities in this Country.

Second, it might be interesting here to tabulate the present budget with the results of a few important inquiries conducted in this country in order to show how much better or how much worse off is the living condition of Shanghai working families as compared with that of other localities. The relative importance of the different items of expenditure in the budget is the best index of the social position of the laborers, and a better standard of life is usually indicated by a lower percentage spent for food and a higher one for miscellaneous expenses. Judging from this criterion, it seems that the condition of life of Shanghai working families in general is so far the best among all that appear in Table XIII, as they claim the lowest proportion of expenditure for food and at the same time the highest for miscellaneous items. The percentage of clothing expenses is lowest in Tientsin and highest in Tangku. The highest percentage of expenses for fuel and light is shown in the Tientsin budget, in which water expenses are included, and the lowest in the present inquiry; the difference in climate between the two places is causal of the different proportion of fuel consumed. The item of rent constitutes far less an important expenditure in rural communities than in urban; so it is found that the percentage of rent is highest in Tientsin and Shanghai, and lowest in Kua Chia T'un Village.

The Shanghai Living Standard Compared with that of Foreign Countries.

Third, how does the Shanghai working class budget compare with similar inquiries of foreign countries would be another interesting question to study. Indeed, the actual cost of life among different countries is not readily comparable as the different monetary systems and level of prices in various countries may tend to shape differently their respective habit of consumption and standard of comfort. What is attempted here is merely to see what different proportions of the average family expenditure are attributed to the different items in some of the countries in the West as well as in the East. Table XIV shows the percentage of various items of expenditure in different countries. The United States budget, which stands at the head of the list, shows of all the inquiries the lowest percentage for food and the highest for miscellaneous items, a fact suggesting the relative well-being of American working class. The Shanghai budget, though stands only next to the end of the list, exhibits a far much higher percentage for miscellaneous expenditure than that of the United Kingdom. It must be noted, however, that among the miscellaneous items in the Shanghai budget are included many unnecessary expenses, mostly impositions of old traditions and superstitious practices which are not resulted from ampleness of means but from unduly abstinence of daily necessities. Moreover, the failure of Shanghai factories to provide adequately for the welfare of the workers might tend to add more to the sundry expenses of the budget. It would therefore be presumptuous to say that the living standard of working class in Shanghai is better off than that in the United Kingdom.

TABLE XIV. A COMPARISON OF THE LIVING COST IN DIFFERENT COUNTRIES*

Country	United States	New Zealand	Osaka Japan	Berlin Germany	Great Britain	Shanghai China	Bombay India
Period of Investigation	1918-1919	1919	1919-1920	1918	1920	1929-1930	1921-1922
Food	38.2	38.3	47.0	48.0	52.4	53.2	56.8
Rent	13.4	13.1	10.0	8.3	6.8	8.3	7.7
Clothing	16.6	15.9	11.7	16.7	19.5	7.5	9.6
Fuel and light	5.3	6.1	5.4	5.4	6.4	6.4	7.4
Miscellaneous	26.5	26.6	25.9	21.6	14.9	24.6	18.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Shirras, G. F., op. cit., pp. 106-1190

Average Expenditure Per Equivalent Male Adult.

Fourth, in Table XII, the average yearly expenditure of an equivalent male adult is also calculated. It is found that the fluctuation of the individual expenses in the different income groups follows closely that of the family expenditure. Higher income, therefore, usually enables a worker to spend more for his personal use. Certain discordances are, however, traceable between the percentage expenditure of an average family and that of an equivalent adult. In the calculation of the average expenditure of a family for food and fuel, the total amount spent is used, it being impossible to determine what share is taken up by boarders and to deduct such amount from the total. While in calculating the individual expenses, those for food and fuel are averaged by the total number of householders including boarders and those for the other items by the number of family members only.

Supporters and Dependants of the Families.

Lastly, with the average yearly expense of an equivalent male adult which is figured at $135.16 as basis, the standard of living of members of different sexes and ages is derivable. Basing on this standard, the entire working population of the families are grouped under four classes according to their financial status; members who earn more than enough to cover the standard are classified as supporters of the family, those who earn just enough to support themselves as self-sufficient members, those who earn an income which is not enough to cover their own expenses as semi-dependants, and those who have no earnings at all as dependants. It is found that every supporting member in an average family is responsible for 1.84 dependants or 0.46 semi-dependent, and that every supporting equivalent male adult for 1.16 dependent adults or 0.44 semi-dependent adult.

	Total		Average per family	
	Persons	Equivalent adults	Persons	Equivalent adults
Supporting members	424	381.37	1.39	1.25
Self-sufficient	10	8.90	.03	.03
Semi-dependent	194	165.91	.64	.55
Dependent	782	442.03	2.56	1.45
Total	1,410	998.21	4.62	3.28

The Average Family Faces a Deficit of $37.87 Per Year.

Is the average income of the working families sufficient to cover their expenditure? With the total receipt of $416.51 to defray the aggregate expenses of $454.38, the working families are facing a yearly deficit of $37.87 in average. Of the 305 families, only in one-third is found a little surplus, while the other two-thirds are in shortage of from $70 to $120 per year. Supposing that only the income from wages is considered and all earnings from other resources are disregarded, scarcely one or two out of every ten families are able to meet their living expenses and the bulk are burdened with an average deficit of $121.23. An idea is obtainable as to how the meagre wages earned by the family members are insufficient to keep their body and soul together. In families of higher income, of course, the condition is little better; few families have to run into deficit and comparatively smaller amount of shortage is shown than in families of extremely low income. However, as was explained before, wages usually constitute a relatively smaller percentage of the total earnings in families of higher income. If wages only are considered, therefore, they are found to be burdened with even greater deficiency. Such is the condition of the Shanghai working class, and consequently most of the families have to run in debts and drag themselves down to deep distress.

TABLE XV. AMOUNT OF SURPLUS OR DEFICIT IN FAMILIES OF DIFFERENT INCOME GROUPS

Income group	Number of families	Balance between wages and total expenditure				Average deficit (−)	Balance between total income and total expenditure				Average deficit (−)
		Surplus		Deficit			Surplus		Deficit		
		Number of families	Average	Number of families	Average		Number of families	Average	Number of families	Average	
$											
200—299.99	62	5	$ 15.95	57	$ 101.57	−$ 92.09	11	$ 21.62	51	$ 91.02	−$ 71.04
300—399.99	95	15	29.24	80	99.49	− 79.17	29	42.65	66	77.29	− 40.67
400—499.99	80	17	39.04	63	109.63	− 78.04	34	55.66	46	80.68	− 22.73
500—599.99	31	10	83.07	21	180.22	− 95.29	15	88.87	16	120.34	− 19.11
600—699.99	25	5	115.60	20	176.45	− 118.04	8	145.66	17	103.70	− 23.91
700 and above	12	2	83.69	10	246.03	− 191.07	4	68.72	8	68.86	− 23.00
Total or average	305	54	51.07	251	121.23	− 90.73	101	60.80	204	86.73	− 37.87

Other Receipts and Payments. Besides the items of income and expenditure treated in the foregoing sections, there appear on the budgets of the families other receipts and payments, of which a balance in favor of the receipt side is shown, explaining how the amount of deficit of the families is offset and how a little surplus cash on hand is possible as shown in the table that ensues. Such receipts or payments are, in fact, not real income or expenditure but are borrowings or lendings in their various forms. In Table XVI is given a detailed analysis of such nominal income and expenditure of the families according to income groups. Before entering into a study of the figures, an explanation of the terms, some of which are peculiar to the working families or families of small means in China, is necessary. Under the heading of the receipts are included borrowings, receipts from pawned articles, receipts from *hui* funds, purchase on credit and loans returned. Borrowings may be made either from relatives or friends at a moderate rate of interest, or in the form of the so-called *yin-tse-chien*, or "stamp money" which represents a kind of usury. It is the latter form of borrowings that deserves special attention. "Stamp money" or *yin-tse-chien* is a form of loan made by a certain class of money-lenders, usually gangsters or Indian constables, to the poor and needy folks often at an exorbitant interest of as high as over 120 per cent per annum. The loan is made in a lump sum, and the interest, sometimes the principal also, is paid in installments. Each payment is signified by a stamp on the folder which represents the loan contract, hence the name "stamp money". It is a usual practice that the loan contract is so contrived that only the amount of interest to be paid at regular installments is stated and that a blank space is left for the amount of the loan. The money lender can fill any amount in the blank and make the rate of interest appear quite reasonable, if ever the case is presented before the court. This form of loan is, indeed, the worst resort for the laborers. Not infrequently, however, the workers are forced to appeal to these harsh money-lenders when they are hard pressed by financial difficulties.

The practice of securing money from pawnshops is perhaps well-known to every one. In Shanghai, the rate of interest charged is usually fixed at 24 per cent per annum, and a lower rate is charged for articles worth more than $10 by large pawnshops and for articles worth more than $5 by small ones. The period of redemption is limited variously from 18 months in the former to 8 months in the latter pawnshops. *Hui* is a form of mutual aid agreement, formed by

TABLE XVI. AVERAGE AMOUNT OF NOMINAL INCOME AND EXPENDITURE IN FAMILIES OF DIFFERENT INCOME GROUPS

Income group	Number of families	Average nominal income per family						Wages and other real income	Average income real and nominal (=total expenditure + cash on hand)	Average expenditure	Average nominal payments per family						Average cash on hand
		Borrowings	Receipts from pawned articles	Receipts from *hui* funds	Purchase on credit	Loans returned	Total				Payments of money borrowed	Redemption of pawned articles	*Hui* subscriptions	Payments of bills due	Lendings	Total	
		$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$
200—299.99	62	62.04	16.98	43.97	6.16	.74	129.89	266.33	396.22	337.20	17.40	3.45	34.42	4.69	.17	60.13	−1.11
300—399.99	95	59.65	19.74	45.80	7.55	.48	133.22	344.48	477.70	385.17	22.74	9.26	46.81	8.32	.63	87.76	4.77
400—499.99	80	52.71	18.00	47.78	11.18	1.82	131.49	443.47	574.96	466.14	25.98	9.12	48.47	9.76	.03	93.36	15.46
500—599.99	31	70.44	15.81	33.74	8.29	.97	129.25	546.26	675.51	565.94	41.75	8.06	41.96	4.42	.58	96.77	12.80
600—699 99	25	144.03	18.70	101.47	20.37	2.42	286.99	644.68	931.67	668.30	91.34	11.25	102.21	21.77	.20	226.77	36.60
700 and above	12	76.08	24.23	101.50	26.70	1.00	229.51	773.14	1002.65	795.80	52.27	16.10	84.58	14.59	1.33	168.87	37.98
Total or average	305	66.98	18.35	51.47	10.10	1.12	148.02	416.51	564.53	454.38	31.22	8.36	50.26	8.91	.37	99.12	11.03

PERCENTAGE

$																	
200—299.99	20.3	15.7	4.3	11.1	1.5	.2	32.8	67.2	100.0	85.1	4.4	.9	8.7	1.2		15.2	−.3
300—399.99	31.2	12.5	4.1	9.6	1.6	.1	27.9	72.1	100.0	80.6	4.8	1.9	9.8	1.8	.1	18.4	1.0
400—499.99	26.2	9.2	3.1	8.3	2.0	.3	22.9	77.1	100.0	81.1	4.5	1.6	8.4	1.7		16.2	2.7
500—599 99	10.2	10.4	2.4	5.0	1.2	.1	19.1	80.9	100.0	83.8	6.2	1.2	6.2	.6	.1	14.3	1.9
600—699.99	8.2	15.4	2.0	10.9	2.2	.3	30.8	69.2	100.0	71.7	9.8	1.2	11.0	2.4		24.4	3.9
700 and above	3.9	7.6	2.4	10.1	2.7	.1	22.9	77.1	100.0	79.4	5.2	1.6	8.4	1.5	.1	16.8	3.8
Total or average	100.0	11.9	3.2	9.1	1.8	.2	26.2	73.8	100.0	80.5	5.5	1.5	8.9	1.6	.1	17.6	1.9

any group of persons who know each other well. Each person is required to pay a fixed sum at regular intervals, and the money so collected is given to one member who is decided for each period by lot or by arrangement. The recipient of the fund would have to pay in the future, besides the usual subscription, a premium, which is but interest in disguise. Such *hui* exists in abundance in this country, and often proves beneficial to poor families for raising loans when a lump sum of money is needed. By purchase on credit is meant of course the securing of goods or service on a promise to pay in future, which represents a different form of borrowing as it is goods or service instead of cash that the borrower obtains on credit. Of the loans returned, a part which represents the amount of interest should be entered into the real income of the workers as such being real earnings from the loans extended. Under the heading of nominal payments are included payment of money borrowed, redemption of pawned articles, *hui* subscriptions, payment of bills due, and lendings, which correspond to the respective items of nominal receipts just explained. Likewise, the interest charges on pawned articles and on *hui* funds should be considered as real expenditure and entered into the budget as an item under the miscellaneous expenses.

The Deficit Offset by Borrowings. Taking the balance between the nominal receipts and payments, an average surplus of $48.90 for each family is shown. It is with this amount of surplus that the average families manage to tide over their annual deficit of $37.87 and are able to keep a little cash amounting to $11.03 in average on hand. The total nominal receipts constitute as high as 26.2 per cent of the aggregate income of the families. The insufficiency of the workers' earnings is manifested by the fact that they have to depend for over one-fourth of their income on various forms of borrowings. Of the total expenditure of the families, 17.6 per cent are of nominal nature. When the nominal receipts are checked with corresponding reimbursements, it is found that the amount of receipts from *hui* funds agrees quite closely with that of *hui* subscriptions and that of purchase on credit with that of payments of bills. Corresponding to the average borrowings of $66.98 per family, however, the payments of debts amount to $31.22 only, which is less than one half of the amount borrowed. Likewise, corresponding to the average amount of $18.35 secured on pawned articles, scarcely half of which is redeemed. It is easily conceivable what a miserable life the average working families must have experienced as they have to live on borrowings which they can not refund and receipts from pawned articles which they can not redeem.

Exorbitant Interest Charged by Money-lenders, a Social Crime. It is shown in the Table XVII that in as much as 88.2 per cent of the families under investigation are found receipts from borrowings and in 78.6 per cent are found receipts from pawned articles. A great majority of the families, therefore, find their earnings insufficient to tide over their financial difficulties and are forced to resort to those exorbitant usurers and ruthless pawnbrokers. The practice of stamp money with the excessive interest charged is, indeed, a social crime, a plunder of the poor families. Stories were told by the working people themselve as well as in newspapers as to how such illegal usury had ruined many a family. Take for instance a certain working family covered in the present inquiry. It was a family with a monthly income of over $40, which would otherwise quite sufficient to defray its daily expenses. Due to the death of the father, the head of the family, however, it contracted a loan of over $100 and found itself a victim of the harsh stamp money lenders. In a year's time, the interest charges, which the family failed to pay off, piled up so quickly that the total sum due stood at as high as over three times the amount borrowed and that the family was required to pay something like $30 per month for interest. Just

TABLE XVII. ITEMS OF NOMINAL INCOME AND EXPENDITURE INCURRED BY FAMILIES OF DIFFERENT INCOME GROUPS

Income group	Number of families	Families having nominal income in the form of					Families having nominal expenditure in the form of				
		Borrowings	Receipts from pawned articles	Receipts from *hui* funds	Purchase on credit	Loans returned	Payments of money borrowed	Redemption of pawned articles	*Hui* subscriptions	Payment of bills due	Lendings
$200—299.99	62	57	53	40	25	4	38	32	47	24	2
300—399.99	95	88	78	70	45	8	60	54	81	39	5
400—499.99	80	65	57	57	33	6	38	40	62	27	1
500—599.99	31	27	21	17	15	2	20	14	27	12	1
600—699.99	25	22	18	20	20	3	22	14	24	21	2
700 and above	12	10	11	8	10	2	8	8	10	7	3
Total or average	305	269	238	212	148	25	186	162	251	130	14
		PERCENTAGE									
$200—299.99	20.3	91.9	85.5	64.5	40.3	6.5	61.3	51.6	75.8	38.7	3.2
300—399.99	31.2	92.6	82.1	73.7	47.4	8.4	63.2	56.8	85.3	41.1	5.3
400—499.99	26.2	81.3	71.3	71.3	41.3	7.5	47.5	50.0	77.5	33.8	1.3
500—599.99	10.2	87.1	67.7	54.8	48.4	6.5	64.5	45.2	87.1	38.7	3.2
600—699.99	8.2	88.0	72.0	80.0	80.0	12.0	88.0	56.0	96.0	84.0	8.0
700 and above	3.9	83.3	91.7	66.7	83.3	16.7	66.7	66.7	83.3	58.3	25.0
Total or average	100.0	88.2	78.0	69.5	48.5	8.2	61.0	53.1	82.3	42.6	4.6

imagine how could the family manage to meet this obligation in addition to its living expenses with the amount of earnings it received each month! In the daily papers, instances are not lacking, telling how when hard pressed by the excessive demand of the money lenders, some of the victims went so far as to commit suicide, others had to sell their children to meet the obligation, and in some cases they were driven desperate and turned into criminals or outcasts of the community. In order to give the poor people an easy access to loans at a moderate interest, the Bureau of Social Affairs had planned and succeeded in 1929 in establishing the Public Loan Office, wherefrom the needy people can obatin a loan of not more than $20, at the rate of from 6 to 8 per cent per annum, with the guaranty of certain reliable establishment or personality. During the period from July 1929 to June 1930, the total amount of loans contracted stood at $38,137.50, averaging $2,825 per month; and during July 1930 to June 1931, at $57,683.50, averaging $4,806.96 per month. However helpful they might prove to be, the small amount of less than $5,000.00 per month is hardly sufficient to answer for the needs of any significant portion of the entire poor people in Shanghai. Moreover, it seems that the functions of the Loan Office have not yet been well known to the general public, and at the same time, the difficulty in securing guaranty and the delayance involved in the investigation into the reliability of the guaranty have further hindered the poor and needy people from an easy access to the institution.

IV. FOOD

Food Items Classified. The true status of workers' life cannot be demonstrated by a mere enumeration of the average expenditure on the different items of consumption. The detailed constituents of the expenditure must be inquired into and the meaning of such consumption to the living condition of the workers studied. The subsequent chapters will, therefore, be devoted to an analysis of the average consumption of the articles and services recorded in the 3,660 account books. Food, the first essential of life, deserves primary attention. Of the total expenditure of an average working family, the amount of food consumption constitutes more than 50 per cent, and a great variety of 200 odd food items is shown in the books. In order to effect a clear assortment, the various kinds of food are classified under five main groups, namely, (1) cereals and products which include rice, wheat and other cereals and their products, (2) beans and vegetables, which include beans, bean products and other vegetables, (3) meat, fish and egg, which include pork, beef, mutton, fowls and eggs, fishery products such as fish and shrimps, and milk, etc., (4) condiments, which include bean oil, bean sauce, sugar, etc., and (5) others which include fruits and nuts, candies, meals at restaurants, been other miscellaneous food items.

Average Food Consumption of the Families. In Table XVIII are given first a detailed analysis of the average quantity and value of food consumption of the 305 families, and second a demonstration of the number of families and the percentage they constitute of the total families studied in whose budgets the respective items of food appear, together with the average quantity and value of such consuming families. It is intended that from these data an idea is obtainable as to how the variety of food consumption is distributed among the working families and what the standard diet of the Shanghai working class is.

Cereals and Products. The average food consumption of a family amounts to $241.54 per year, or $20.13 per month, or $0.67 per day. Of the total food consumption, the group of cereals and products constitutes over one half the amount, and again of the total consumption under that group, over four-fifths are that of rice, of which an average of 7.19 piculs is consumed each year. About 5 per cent of the total consumption of cereals and products is that of wheat flour and fresh noodle which amount to 75.02 *catties* each year, and about 13 per cent of other food made of rice or wheat flour such as wheaten cakes, doughnuts, cooked rice, steamed bread, etc., which amount to $16.73 each year. The average daily consumption of cereals and products of an equivalent male adult is composed of about 6 *k'e* (.006 *picul*) of rice, 1 *liang* (1/16 *catty*) of wheat flour and fresh noodle, and other food made of rice and flour valued at $0.013. Rice is, therefore, by far the most important constituent of the standard diet of the Shanghai working families, supplemented by a smaller amount of wheat and wheat and rice products. The maintenance of a rice diet is indeed the common habit of consumption south of the Yangtze River. It is justly said that the question of maintaining a living is nothing but one of obtaining the daily rice meals.

Rice Diet in the South vs. Wheat Diet in the North. Contrary to the rice diet common in Shanghai and in most localities south of the Yangtze River, wheat and cereals other than rice form the principal food supply in Northern provinces. The daily meals of Peiping working people consist among other things of 0.348 catty of millet and millet flour, 0.425 *catty* of corn and corn flour, 0.267 *catty* of wheat flour, and a smaller amount of buckwheat flour,

TABLE XVIII. AVERAGE QUANTITY AND VALUE OF FOOD CONSUMPTION PER FAMILY AND PER EQUIVALENT MALE ADULT

Food items	Unit	All families				Families purchasing			
		Average quantity		Average value		Percentage of total food expenditure	Number of families	Percentage of the total number of families	Average
		Per family	Per equivalent adult	Per family	Per equivalent adult				Quantity	Value
Grand total, Food group				**$241.538**	**$70.625**	**100.00**	**305**	**100.00**		**$241.538**
Cereals & products				**128.966**	**37.709**	**53.394**	**305**	**100.00**		**128.966**
Unglutinous rice	*picul*†	4.238	1.239	63.512	18.571	26.295	273	89.51	4.735	70.957
Sien rice	*picul*	2.849	.833	40.706	11.903	16.853	207	67.87	4.197	59.978
Glutinous rice	*picul*	.100	.029	1.676	.490	.694	263	86.23	.116	1.944
Wheat flour	*chin*‡	42.520	16.072	3.679	1.076	1.523	256	83.93	65.513	4.383
Fresh noodle	*chin*	32.495	9.561	2.660	.778	1.101	304	99.67	32.603	2.669
Wheaten cake				5.274	1.542	2.183	297	97.38		5.416
Doughnuts				1.527	.446	.632	294	96.39		1.583
Cooked noodle				1.743	.510	.722	257	84.26		2.068
Steamed bread				1.714	.501	.710	271	88.85		1.929
Cooked glutinous rice				1.118	.327	.463	256	83.93		1.332
Pastry				.851	.249	.352	271	88.85		.958
New year cake				.738	.216	.306	155	50.82		1.453
Glutinous rice flour dampling				.266	.078	.110	162	53.11		.501
Small flour dampling				.312	.091	.129	175	57.38		.544
Bread				.097	.028	.040	54	17.70		.545
Glutinous rice dampling, in traingular form				.079	.023	.033	71	23.28		.340
Congee with sugar				.088	.026	.036	124	40.66		.217
Cakes for infants				.260	.076	.108	74	24.26		1.070
Bean milk				.131	.038	.054	157	51.48		.255
Moon cake				.124	.036	.051	47	15.41		.804
Baked boiled rice				.016	.005	.007	4	1.31		1.250
Fermented rice				.001	.0003	*	1	.33		.216
Other refreshments				2.394	.700	.991	273	89.51		3.279
Beans and vegetables				**42.177**	**12.332**	**17.462**	**365**	**100.00**		**42.177**
Bean curd	piece	459.152	134.255	3.148	.920	1.303	305	100.00	459.152	3.148
Sheet bean curd	sheet	382.186	111.750	1.975	.577	.818	305	100.00	382.186	1.975
Dried bean curd	piece	207.497	60.672	1.428	.418	.591	305	100.00	207.497	1.428
Yellow soy bean sprouts	*chin*	42.400	12.398	1.676	.490	.694	305	100.00	42.400	1.676
Fried bean curd	*chin*	3.528	1.032	1.030	.301	.426	305	100.00	3.528	1.030
Peeled broad bean	*chin*	12.852	3.758	.664	.194	.275	305	100.00	12.852	.664
Fresh mung bean starch in strips	*chin*	19.395	5.671	1.014	.296	.420	304	99.67	19.459	1.017
Sprouted broad bean		19.315	5.648	.941	.275	.390	290	95.08	20.314	.989
Green bean sprouts	*chin*	7.366	2.154	.271	.079	.112	283	92.79	7.938	.292
Bean lamina	sheet	35.184	10.288	.178	.052	.074	249	81.64	43.096	.219
Dried mung bean starch in strips	*chin*	.831	.244	.296	.087	.123	117	38.36	2.166	.772
Bean curd skin	sheet	1.439	.421	.047	.014	.019	101	33.11	4.347	.141
Yellow bean	*chin*	3.040	.889	.202	.059	.084	196	64.26	4.800	.314
Broad bean	*chin*	4.200	1.228	.183	.054	.076	186	60.98	7.000	.301
Other beans				.189	.055	.078	200	65.58		.288
Chinese cabbage	*chin*	220.509	64.477	6.235	1.823	2.581	305	100.00	220.509	6.235
Small cabbage	*chin*	32.138	9.397	.952	.278	.394	302	99.02	32.457	.962
Fowl feather cabbage	*chin*	3.947	1.154	.141	.041	.058	196	64.26	6.141	.219
Siao shang tsai	*chin*	2.694	.788	.068	.020	.028	100	32.79	8.217	.206
Salted *hsuen-li-hung*	*chin*	57.229	16.734	3.208	.938	1.328	305	100.00	57.229	3.208
Turnip	*chin*	44.510	13.015	1.259	.368	.521	305	100.00	44.510	1.259
Allium odorium	*chin*	18.871	5.518	.781	.228	.323	301	98.69	19.122	.792
Spinach	*chin*	14.592	4.267	.689	.202	.285	302	99.02	14.737	.696

TABLE XVIII. AVERAGE QUANTITY AND VALUE OF FOOD CONSUMPTION PER FAMILY AND PER EQUIVALENT MALE ADULT—*Continued*

Food items	Unit	All families				Families purchasing				
		Average quantity		Average value		Percentage of total food expenditure	Number of families	Percentage of the total number of families	Average	
		Per family	Per equivalent adult	Per family	Per equivalent adult				Quantity	Value
Allium odorium sprouts	*chin*	.881	.258	$ .076	$ .022	.031	168	55.08	1.600	$ .138
Celery	*chin*	19.284	5.639	.833	.244	.345	301	98.69	19.540	.844
Young soy bean with pods	*chin*	19.072	5.577	1.102	.322	.456	304	99.67	19.135	1.106
Clover	*chin*	14.366	4.201	.827	.242	.342	294	96.39	14.903	.858
Chiao-pai	*chin*	10.191	2.980	.784	.229	.325	300	98.36	10.360	.797
Sweat potatoes	*chin*	15.678	4.584	.519	.152	.215	289	94.75	16.546	.548
String bean with pods	*chin*	10.677	3.122	.625	.183	.259	301	98.69	10.819	.634
Small taro	*chin*	7.159	2.093	.401	.117	.166	257	84.26	8.496	.476
Bamboo shoots (spring)	*chin*	3.353	.980	.616	.180	.255	218	71.48	4.691	.862
Bamboo shoots (shoots of *phyllostachys pubescens*)	*chin*	3.675	1.075	.433	.127	.179	179	58.69	6.262	.738
Broad bean pods	*chin*	19.643	5.744	.526	.154	.218	282	92.46	21.245	.653
Parsley	*chin*	8.653	2.530	.296	.087	.123	287	94.10	9.196	.315
Artemesia Sp.	*chin*	6.210	1.816	.203	.059	.084	257	84.26	7.370	.241
Ta-hu-tsai	*chin*	4.504	1.317	.290	.085	.120	167	54.75	8.226	.530
Onions & garlics				.392	.115	.162	304	99.67		.389
Dried turnips	*chin*	2.669	.780	.241	.071	.101	276	90.49	2.950	.269
Eggplants	*chin*	9.743	2.849	.408	.119	.169	299	98.03	9.938	.417
Squash	*chin*	13.495	3.940	.353	.103	.146	291	95.41	14.145	.370
Cucumber	*chin*	4.961	1.451	.233	.068	.096	285	93.44	5.309	.249
Cabbage	*chin*	13.014	3.805	.305	.089	.126	283	92.79	14.026	.329
Cayenne-peper	*chin*	5.238	1.532	.377	.110	.156	288	94.43	5.547	.399
Egyptian bean	*chin*	3.302	.965	.168	.049	.070	237	77.70	4.250	.217
Sliced dried bamboo shoots (soaked)	*chin*	2.637	.771	.250	.073	.104	180	59.02	4.468	.424
Potatoes	*chin*	9.981	2.918	.217	.063	.090	184	60.33	16.544	.360
Arrowhead	*chin*	2.685	.610	.187	.055	.077	167	54.75	3.810	.342
Salted cabbage	*chin*	2.974	.870	.145	.042	.060	144	47.21	6.298	.307
Capsella bursa pastoris, moench	*chin*	1.110	.325	.072	.021	.030	123	40.33	2.753	.179
Ipomaea aquatica forsk	*chin*	1.562	.457	.046	.014	.019	145	47.54	3.285	.096
Beets	*chin*	2.073	.606	.045	.013	.019	127	41.64	4.979	.108
Pea pods	*chin*	2.107	.616	.097	.028	.040	149	48.85	4.314	.198
Bamboo shoots (winter)	*chin*	.359	.105	.117	.034	.048	70	22.95	1.566	.509
Chinese lettuce	*chin*	4.693	1.372	.157	.046	.065	260	85.25	5.505	.184
Pumpkin	*chin*	3.999	1.169	.075	.022	.031	135	44.26	9.036	.168
Snake gourd	*chin*	1.104	.323	.050	.015	.021	137	44.92	2.458	.112
Shepherd's purse	*chin*	.517	.151	.101	.030	.042	84	27.54	1.879	.366
Dried bamboo shoot				.187	.055	.077	62	20.33		.870
White greens	*chin*	27.138	7.935	1.277	.373	.529	293	96.07	28.250	1.330
Kiaochow vegetable	*chin*	1.024	.299	.051	.015	.021	33	10.82	9.462	.469
Mustard plant	*chin*	2.491	.728	.073	.021	.030	100	32.79	7.597	.223
Enteromorpha linza, J. G. Aq.	*chin*	1.830	.535	.068	.020	.028	110	36.07	5.075	.190
Rape	*chin*	.784	.229	.043	.013	.018	67	21.97	3.570	.195
Gourd	*chin*	2.730	.798	.095	.028	.039	177	58.03	4.705	.164
Leave of Chinese lettuce	*chin*	1.020	.298	.015	.004	.006	88	28.85	3.536	.051
Ma-lai-du	*chin*	.269	.079	.015	.004	.006	54	17.70	1.520	.084
Jack bean	*chin*	.176	.051	.014	.004	.006	35	11.48	1.536	.123
Pea leaves	*chin*	.647	.186	.029	.009	.012	59	19.34	3.344	.148
Dried & salted vegetable				.022	.006	.009	1	.33		3.803
Other vegetables				.546	.160	.226	297	97.38		.512
Fried gluten	*chin*	.310	.091	.095	.028	.039	137	44.92	.691	.212
Fresh gluten	*chin*	.116	.034	.028	.008	.012	70	22.95	.506	.124
Fungi	*chin*	.075	.022	.136	.040	.056	216	70.82	.107	.192
Pickled mustard plant	*chin*	.278	.081	.105	.031	.043	178	58.36	.478	.181

TABLE XVIII. AVERAGE QUANTITY AND VALUE OF FOOD CONSUMPTION PER FAMILY AND PER EQUIVALENT MALE ADULT—*Continued*

Food items	Unit	All families				Families purchasing				
		Average quantity		Average value		Percentage of total food expenditure	Number of families	Percentage of the total number of families	Average	
		Per family	Per equivalent adult	Per family	Per equivalent adult				Quantity	Value
Dried and salted bamboo shoot	*chin*	.186	.054	$ .128	$ .037	.053	111	36.39	.510	$ .352
Mushrom	*chin*	.049	.014	.113	.033	.047	142	46.56	.106	.243
Dried lily-flower	*chin*	.166	.049	.088	.026	.036	191	62.62	.264	.141
Salted bamboo shoots				.027	.008	.011	23	7.54		.220
Others groceries				.231	.068	.096	106	34.75		.535
Breakfast dishes				.646	.189	.267	302	99.02		.636
Meat, fish, & eggs				**39.864**	**11.657**	**16.504**	**305**	**100.00**		**39.864**
Fresh pork	*chin*	40.972	11.980	14.571	4.260	6.033	304	99.67	42.718	14.619
Fresh beef	*chin*	8.576	2.508	2.381	.696	.986	303	99.34	8.633	2.397
Salted pork	*chin*	5.898	1.725	1.846	.540	.764	229	75.08	7.856	2.459
Mutton	*chin*	.454	.133	.147	.043	.061	76	24.92	1.822	.592
Ham				.070	.020	.029	24	7.87		.904
Fowl	*chin*	2.513	.735	1.099	.321	.455	127	41.64	6.034	2.638
Duck	*chin*	1.122	.328	.376	.110	.156	99	32.46	3.456	1.214
Blood	piece	14.859	4.345	.103	.030	.043	205	67.21	22.107	.153
Smoked meats				.043	.013	.018	30	9.84		.503
Fresh meat				1.189	.348	.492	264	86.56		1.489
Cooked meat				.322	.094	.133	213	69.84		.461
Fresh mullet	*chin*	14.989	4.383	2.311	.676	.957	304	99.67	15.038	2.319
Fresh white fish	*chin*	6.903	2.018	1.757	.514	.727	257	84.26	8.192	2.085
Silver carp	*chin*	3.545	1.037	1.422	.416	.589	274	89.84	3.946	1.583
Cutlass fish	*chin*	4.252	1.243	.750	.219	.311	225	73.77	5.764	1.017
Fresh *shiang* fish	*chin*	1.533	.448	.283	.083	.117	199	65.25	2.349	.433
Cuttle fish	*chin*	1.986	.581	.277	.081	.115	168	55.08	3.605	.504
Hypophthalmichthys montrie	*chin*	.648	.189	.168	.049	.070	85	27.87	2.324	.604
Ching fish	*chin*	.524	.153	.195	.057	.081	64	20.98	2.498	.929
Carp	*chin*	.394	.115	.114	.033	.047	67	21.97	1.794	.527
Eel	*chin*	.173	.051	.053	.015	.022	55	18.03	.961	.296
Salanx microdon bleeker	*chin*	.132	.039	.029	.008	.012	39	12.79	1.029	.226
Other fresh fish				1.418	.415	.587	298	97.70		1.462
Salted white fish	*chin*	8.455	2.472	1.500	.439	.621	300	98.36	8.596	1.525
Dried *tai* fish	*chin*	1.057	.309	.192	.056	.079	132	43.28	2.433	.447
Salted cutlass fish	*chin*	.893	.261	.144	.042	.060	120	39.34	2.271	.370
Salted herrings	*chin*	.929	.272	.108	.032	.045	111	36.39	2.552	.296
Salted mullet	*chin*	.714	.209	.071	.021	.029	85	27.87	2.562	.255
Salted *shiang* fish	*chin*	.373	.109	.070	.020	.029	61	20.00	1.861	.356
Other salted fish				.201	.059	.083	134	43.93		.480
Fresh shrimps	*chin*	1.205	.352	.361	.106	.149	240	78.69	1.531	.458
Fresh water snails	*chin*	3.947	1.154	.183	.054	.076	246	80.66	4.894	.227
Fresh crabs	*chin*	.546	.160	.183	.054	.076	116	38.03	1.435	.482
Salted crabs	*chin*	.675	.197	.182	.053	.075	94	30.82	2.191	.592
Salted shrimps				.042	.012	.017	79	25.90		.182
Reeve	*chin*	2.260	.661	.122	.036	.051	114	37.38	6.047	.325
Other shell food				.143	.042	.059	180	59.02		.276
Dried shrimps	*chin*	.383	.112	.391	.114	.162	276	90.49	.423	.432
Jelly fish	*chin*	.569	.166	.087	.025	.036	112	36.72	1.551	.236
Jelly fish skin	*chin*	.356	.163	.082	.024	.034	91	29.84	1.862	.275
Sea slug				.047	.014	.019	39	12.79		.445
Hai-yai (small sea fish, dried and salted)	*chin*	.103	.030	.076	.022	.031	127	41.64	.248	.182
Other sea food				.274	.080	.113	258	84.59		.408
Game				.035	.010	.014	18	5.90		.589
Dishes ordered from restaurants				.534	.156	.221	105	34.43		1.847

TABLE XVIII. AVERAGE QUANTITY AND VALUE OF FOOD CONSUMPTION PER FAMILY AND PER EQUIVALENT MALE ADULT—*Concluded*

Food items	Unit	All families				Families purchasing				
		Average quantity		Average value		Percentage of total food expenditure	Number of families	Percentage of the total number of families	Average	
		Per family	Per equivalent adult	Per family	Per equivalent adult				Quantity	Value
Fresh duck's egg	piece	84.932	24.834	$ 2.435	$ .712	1.008	303	99.34	85.492	$ 2.451
Salted duck's egg	piece	9.478	2.771	.297	.087	.123	227	74.43	12.736	.401
Fresh hen's egg	piece	7.679	2.245	.232	.068	.096	170	55.74	13.776	.417
Lime preserved egg	piece	4.269	1.248	.136	.040	.056	129	42.30	10.093	.325
Milk				.314	.092	.130	28	9.18		3.437
Milk powder				.498	.146	.206	29	9.51		5.239
Condiments				**25.483**	**7.451**	**10.550**	**305**	**100.00**		**25.483**
Soy bean oil	*chin*	58.242	17.030	13.839	4.046	5.730	302	99.02	58.821	13.976
Soy bean sauce	*chin*	62.042	18.141	5.824	1.703	2.411	305	100.00	62.042	5.824
Salt	*chin*	32.033	9.366	2.571	.752	1.064	305	100.00	32.033	2.571
White sugar	*chin*	8.787	2.469	1.009	.295	.418	303	99.34	8.845	1.016
Lard	*chin*	2.249	.658	.789	.231	.327	249	81.64	2.755	.967
Sesamum oil	*chin*	1.142	.334	.372	.109	.154	299	98.03	1.165	.379
Wine for cooking	*chin*	2.159	.631	.240	.070	.099	254	83.28	2.593	.289
Brown sugar	*chin*	2.725	.797	.235	.069	.097	218	71.48	3.813	.329
Peanut oil	*chin*	.900	.263	.220	.064	.091	32	10.49	8.577	2.099
Soy bean paste				.213	.062	.088	286	93.77		.227
Vinegar	*chin*	.629	.184	.039	.011	.016	180	59.02	1.066	.066
Ve-tsin	bottle	.134	.039	.030	.009	.012	23	7.54	1.783	.401
Water caltrop starch				.021	.006	.009	93	30.49		.067
Other condiments				.081	.024	.034	222	72.79		.144
Others				**5.048**	**1.476**	**2.090**	**305**	**100.00**		**5.048**
Water melon				.636	.186	.263	234	76.72		.815
Water chestnuts				.139	.041	.058	186	66.98		.226
Oranges				.125	.037	.052	140	45.90		.273
Sugar cane				.123	.036	.051	152	49.84		.248
Musk melon				.082	.024	.034	138	45.25		.181
Pears				.078	.023	.032	149	48.85		.160
Bananas				.047	.014	.019	102	33.44		.142
Water caltrop				.045	.013	.019	149	48.85		.093
Peaches				.035	.010	.014	88	28.85		.117
Apples				.029	.008	.012	59	19.34		.152
Persimmons				.017	.005	.007	56	18.36		.090
Plums				.002	.0006	*	15	4.92		.045
Loquat				.0003	.0001	*	1	.33		.094
Other fruits				.398	.116	.165	268	93.77		.453
Peanuts	*chin*	3.819	1.117	.584	.171	.242	290	95.08	4.016	.617
Dates	*chin*	1.510	.442	.367	.107	.152	211	69.18	2.182	.531
Dried longans				.236	.069	.098	97	31.80		.742
Melon seeds	*chin*	.763	.223	.205	.060	.085	235	77.05	.991	.267
Walnuts				.034	.010	.014	51	16.72		.201
Chestnuts				.005	.001	.002	2	.66		.819
Lotus seeds				.002	.0006	*	1	.33		.600
Other dried fruits				.293	.086	.121	197	64.59		.453
Candies				.194	.057	.080	194	63.61		.305
Soda water				.093	.027	.039	40	13.11		.708
Syrups				.002	.0006	*	1	.33		.640
Ice cream				.0003	.0001	*	3	.98		.032
Meals at restaurant				1.276	.373	.528	80	26.23		4.863

† 1 *picul* = 200 pounds.

‡ 1 *chin* (*tien ping*) = 0.5865 kilogram.

* Less than 0.001.

kaoliang and beans per male equivalent adult.[1] According to the inquiries of Prof. J. L. Buck into various farms in Yenshan of Hopei Province, the farm families consume in average 344.7 *kung chin* or kilograms of kaoliang, 283.2 *kung chin* of millet, 226.1 *kung chin* of corn and 45.9 *kung chin* of wheat per year; and in Sing Chen of Honan, the families consume in average 296.1, 284.8, 217.7, and 801.9 *kung chin* respectively. In both districts, the popular diet is composed largely of millet and *kaoliang*, corn and wheat, and rice is very rarely consumed. In Huai Yuan of Anhwei Province, the annual consumption of an average rural family consists, besides 888.8 *kung chin* of wheat, 534.3 *kung chin* of *kaoliang*, 26.0 *kung chin* of barley, and 6.2 *kung chin* of millet, also of 334.8 *kung chin* of rice. While in Kiang Ning of Kiangsu Province, a rice diet like that of Shanghai is maintained, consisting of 835.3 *kung chin* of rice, and only 87.6 *kung chin* of wheat and 45.6 *kung chin* of corn per year for each family.[2] The above data signify quite clearly how the popular diet in China varies from that of wheat and cereals other than rice in the North to that of rice in the South.

Beans and Vegetables. The yearly expenses for beans and vegetables amount in average to $42.18 per family, which is 17.5 per cent of the total expenditure for food. Beans and vegetables, both cheap and delicious, form almost the indispensable dishes at the daily meals of the working families. An average of 4 cents per family is spent daily on beans and bean products, of which bean curd, fresh, dried and fried, bean curd sheets, yellow soy bean sprouts, sprouted broad bean, mung bean starch, etc. are the most important items. Of the great variety of vegetables, *chin tsai* (including Chinese cabbage, "small cabbage", *siao shang tsai*, and *fowl's feather* vegetable), salted cabbage, turnips, white greens and young soy bean with pods are most commonly consumed, for which the expenditure amounts to one-third of the total consumption of beans and vegetables. Other vegetables such as bamboo shoots, egg plants, etc., are seasonal in nature and comparatively lesser amount is consumed by the families in a year.

Meat, Fish and Eggs. The expenditure for meat, fish and eggs is almost equivalent to that for beans and vegetables. Of the total expense for the former group, one-third is that for fresh pork, of which 40.97 catties are consumed yearly by each family. Fresh beef and salted pork are next to fresh pork in importance. Fowls and ducks appear very rarely on the dinner table. Mutton, the most popular meat in the North, amounts to less than half a catty per year for each family. Shanghai, proximate to the sea and surrounded by rivers and riverlets, is richly supplied with aquatic products. Quite a significant amount of mullets, carps, cutlass fish and both fresh and salted white fish are consumed by the working families. Duck's eggs are bigger in size and cheaper in price than hen's eggs, of the former as many as 84.9 pieces are consumed yearly by each family and of the latter only 7.7 pieces. Comparing the consumption of meat, fish and egg by Shanghai working families with that by the laboring class in Peiping, the Shanghai diet is far more luxurious and tasteful. The average yearly expenditure for meat, etc. in Peiping amounts only to $1.60 per family, half of which is spent for mutton, adding 1.32 catties of pork valued at $0.37, 1.26 catties of beef valued at $0.27, less than $0.01 worth of fish

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[1] The figures being taken from Table 4 of "Livelihood in Peking," p. 78, by L. K. Tao, and being converted to terms of equivalent adult according to the Atwater scale.

[2] Buck, J. L., Chinese Farm Economy, 1930, Chapter X, Food Consumption, pp. 366, 368, 369 and 371.

and $0.033 worth of eggs to complete the budget.[1] The yearly expenditure of $39.86 for meat and other delicacies, though gives but occasional enjoyment of dainty pleasure to the Shanghai workers, would be considered as luxurious indulgence by the Peiping laboring families.

Condiments. Soy bean oil, soy bean sauce, salt, and white sugar are the most important condiments consumed by the families, an average of $1.94 per month is spent for the above items, constituting 91.2 per cent of the total consumption under the condiment group. In the Peiping budget, sesamum oil takes the place of soy bean oil and is the chief item of condiment, and soy bean paste instead of soy bean sauce is popularly consumed.

Other Food Items. Under the miscellaneous food items, a total of $5.05 per year or 2.1 per cent of the total food expenditure is shown in the budget. Of this amount, about one-third is spent for fruits such as melons, oranges, etc., about two-fifths for nuts and candies such as peanuts, melon seeds, etc., most of which are consumed during the Chinese New Year, and about one-third for meals taken at restaurants.

Items of Popular Consumption Under Respective Groups. The relative importance of the individual items of consumption might be shown by the fact as to how widely each such item enters into the budgets of the families. Among the group of cereals and products, rice is, of course, most widely consumed. In 273 families or 90 per cent of the total, unglutinous rice is consumed, and in 207 or 68 per cent, *sien* rice which is of an inferior quality appears in the budgets. Thus, out of the 305 families, 10 per cent consume *sien* rice alone and 32 per cent unglutinous rice alone, while in the other 58 per cent, both unglutinous and *sien* rice are consumed. The consumption of glutinous rice, though widely shown in budgets of over four-fifths of the families, is but of very limited amount, as it does not form a necessary item of daily food supply but is as a rule consumed only in the New Year or in festivals. Wheat flour is consumed by 84 per cent of the total and fresh noodle by all the families but one, and quite an appreciable amount of consumption for both is shown in the budgets. Among the refreshments made of rice or wheat flour, wheaten cakes are most widely consumed and in largest amount. Other items such as doughnuts, steamed cakes and other cakes, cooked noodle and rice, are also consumed by well over 80 per cent of the families.

Bean curd and *chin tsai* are the two favorite dishes appearing at the dining tables of every one of the working families. Among other items of beans and vegetables, dried and fried bean curd, peeled broad bean, yellow soy bean sprouts, salted *hsuen-li-hung*, and turnips are also consumed by every one of the families. Other items of equally wide consumption but of comparatively smaller amount are mung bean starch in strips, onions and garlics, spinach, celery, egg plants and a few other vegetables.

Under the group of meat, fish and eggs, fresh pork and beef, fresh mullets, fresh duck's eggs, and salted white fish are the most popular items appearing in the budgets of almost all the families. Fresh pork of all the items is the most important one, of which an annual consumption of 42.72 catties valued at $14.62 is shown for each average family. Fresh silver carps, fresh white fish, fresh and salted cutlass fish, water snails and dried shrimps are also very popular among the families. Milk and milk food are but rarely consumed.

Of course, none of the families can do without salt and soy bean sauce. White sugar, bean oil, sesamum oil, soy bean paste, wine for cooking purpose and lard are almost equally indispensable. Among the miscellaneous items, peanuts, melon seeds, water melons, and candies are the most widely consumed.

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[1] Tao, L. K., op. cit., pp. 83-84.

Average Food Expenditure Classified According to Groups.

The following gives the annual food consumption under different groups of an average family:

Cereals and products	$128.97	53.4%
Beans and vegetables	42.18	17.5
Meat, fish and eggs	39.86	16.5
Condiments	25.48	10.5
Others	5.05	2.1
Total	$241.54	100.0%

Expenditure Increases as Family Income is Higher.

In classifying the average food consumption according to income groups, as shown in Table XIX, there is a tendency for the average expenditure per family under all the groups to increase as the family income increases. However, as families of higher income are usually those of larger size, it does not follow that the average expenditure per equivalent male adult is necessarily consistent with the same tendency. It is only true in the group of meat, fish and eggs and in that of other food items that a higher average expenditure per equivalent male adult is shown regularly in families of higher income. Indeed, only members of high income groups can afford to have comparatively larger amount of meat, fish, fruits and things of that kind, which are considered to be luxurious by the working class.

Lower Percentage Expenditure on Cereals and Higher One on Meat, etc. in Families of Higher Income Level.

Again, the percentages which the various groups constitute of the total food consumption tend to vary with the magnitude of the family income. The percentage consumption of cereals and products is declining as income increases and that of meat, fish and eggs tends to rise with a higher level of income. The percentage of beans and vegetables consumed remains quite constant whatever the income may be. A higher level of income, therefore, would often mean an improved diet to the working families with respect both to tastefulness and nutritiousness.

A Comparative Study of Dietaries.

An idea as to how differently people in different localities are fed might help to indicate at least one important phase of their comparative well-being. Owing to the lack of adequate information regarding the food consumption of different localities in this country, the comparison has to be limited to a few places whereof data of budgetary inquiries are available. References shall also be made to the dietary conditions of the working populations in foreign countries in the East as well as in the West.

Peiping

The working people in Shanghai claims a better diet, a more healthily apportioned one, than that of the urban as well as rural laborers in Peiping. According to the investigations of the Social Research Department, the dietary budget of Peiping working class is composed of four-fifths of cereals and products and only one-fifth of all other items.[1] How little varieties of food they are able to obtain besides their daily meals of noodles and wheaten

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[1] Tao, L. K., op. cit., Chapter VI. The total expenditure on food in half a year is distributed among the various groups as follows:

Cereals and products	$39.494	80.0%
Vegetables	4.482	9.1
Meat and fish	1.603	3.2
Condiments	3.315	6.7
Others	.530	1.0
Total	$49.424	100.0%

TABLE XIX. AVERAGE FOOD EXPENDITURE PER FAMILY AND PER EQUIVALENT MALE ADULT BY INCOME GROUPS

Income group	Number of families	Average number per family		Average expenditure per year for											
		Persons (including boarders)	Adult equivalents (including boarders)	Cereals and products		Beans and vegetables		Meat, fish and eggs		Condiments		Other food items		Total	
				Per family	Per adult equivalent	Per family	Per adult equivalent	Per family	Per adult equivalent	Per family	Per adult equivalent	Per family	Per adult equivalent	Per family	Per adult equivalent
£				$	$	$	$	$	$	$	$	$	$	$	$
200—299.99	62	4.13	2.85	107.10	37.58	34.24	12.01	24.99	8.76	21.89	7.68	3.25	1.14	191.47	67.18
300—399.99	95	4.53	3.09	110.53	35.77	37.92	12.27	33.36	10.80	23.44	7.59	4.36	1.41	209.61	67.83
400—499.99	80	5.45	3.61	141.24	39.12	44.73	12.39	40.34	11.18	28.05	7.77	4.29	1.19	258.65	71.65
500—599.99	31	6.13	4.02	151.15	37.60	51.19	12.73	53.50	13.31	27.79	6.91	5.96	1.48	289.59	72.04
600—699.99	25	6.48	4.23	166.88	39.45	50.28	11.89	65.81	15.56	28.80	6.81	9.39	2.22	321.16	75.92
700 and above	12	7.25	4.38	169.80	38.77	59.86	13.67	75.83	17.31	30.18	6.89	13.59	3.10	349.26	79.74
Total or average	305	5.09	3.42	128.97	37.71	42.18	12.33	39.86	11.66	25.48	7.15	5.05	1.48	241.54	70.63

PERCENTAGE

$															
200—299.99	20.3			55.9	55.9	17.9	17.9	13.1	13.1	11.4	11.4	1.7	1.7	100.0	100.0
300—399.99	31.2			52.7	52.7	18.1	18.1	15.9	15.9	11.2	11.2	2.1	2.1	100.0	100.0
400—499.99	26.2			54.6	54.6	17.3	17.3	15.6	15.6	10.8	10.8	1.7	1.7	100.0	100.0
500—599.99	10.2			52.2	52.2	17.7	17.7	18.5	18.5	9.6	9.6	2.0	2.0	100.0	100.0
600—699.99	8.2			52.0	52.0	15.6	15.6	20.5	20.5	9.0	9.0	2.9	2.9	100.0	100.0
700 and above	3.9			48.6	48.6	17.1	17.1	21.7	21.7	8.7	8.7	3.9	3.9	100.0	100.0
Total or average	100.0			53.4	53.4	17.5	17.5	16.5	16.5	10.5	10.5	2.1	2.1	100.0	100.0

cakes! The diet of Kua Chia T'un villagers consists of still higher percentage of cereals and products, which constitute 83.2 per cent of the total food consumption. The budget is completed by 10.2 per cent of vegetables, 5 per cent of condiments and scarcely 1 per cent each of meat and fish and other items.[1]

Bombay and Japan.

While the Shanghai working class diet is evidently not quite on the same level as that of the Northern districts, it shows close resemblance to that of our alien neighbors, India in the south and Japan in the east. According to the investigation conducted by the Bombay Labour Office, of the the total expenditure on food consumed by Bombay working families, food grains account for the major portion of 55.8 per cent, and rice alone of all grains constitutes 31.4 per cent of the total food expenses. Of the percentage expenditure on other food items, 4.4 per cent is on pulses, 5.3 per cent on vegetables, 15.9 per cent on meat food and milk, 7.2 per cent on condiments, and 11.4 per cent on others. As the Mohammedan is a consumer of mutton and beef, pork is regarded as unclean and is not included in the meat food. The expenditure on milk and ghee is negligible in the lowest income classes and increases with the income; it accounts for over 5 per cent of the food expenditure.[2] The working class budget of Japan conducted by the Japanese Bureau of Statistics of the Cabinet in 1926 and 1927 shows likewise a preponderance of expenditure on cereals, especially on rice and barley. Beans and vegetables are next in importance, among which bean curd accounts for the largest portion of expenses. Among the meat foods, more fish than meat is consumed.[3] It is interesting to compare here the distribution of the expenditure on different articles of food in the above places with that in Shanghai:

TABLE XX. A COMPARISON OF THE DIETARIES IN SHANGHAI, BOMBAY AND JAPAN

Classes of food	Shanghai	Bombay	Japan
Cereals and products	53.4	55.8	45.7
Beans and vegetables	17.5	9.7	15.3
Meat, fish and eggs	16.5	15.9	14.6
Condiments	10.5	7.2	9.5
Miscellaneous	2.1	11.4	14.9
Total	100.0	100.0	100.0

A review of the accompanying data shows that there are several things in common with the food consumption of the working people in the three localities, Japan, Bombay and Shanghai. It appears that all of them are maintaining a vegetable diet. The percentage which expenses on

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[1] 李景漢, 北平郊外之鄉村家庭, 1929, p. 63. The annual food expenditure is re-calculated here as follows:

Cereals and products	$87.69	83.2%
Vegetables	10.81	10.2
Meat and fish	.81	.8
Condiments	5.26	5.0
Others	.83	.8
Total	$105.40	100.0%

[2] Shirras, G. Findlay, op. cit., pp. 16-17, 60-63. The percentage expenditure here is computed from the data given in that book.

[3] The Japanese Family Budget Enquiries of 1926-1927, International Labour Review, Vol. XXIII, No. 3, March 1931, p. 394. The original text includes wine and tobacco under the food group. The percentage expenditure is re-computed here with that on the said items excluded in order to secure comparability with the Bombay and Shanghai budgets.

cereals and products, beans and vegetables constitute of the total food expenditure is 70.9 in Shanghai, 65.5 in Bombay, and 61.0 in Japan. Non-vegetarian or meat food, such as meat, fish, egg, milk, etc., is comparatively less significant among the list of food supplies, and it amounts to around 16 per cent of the total expenses on food for the said localities. The expense on other miscellaneous food items shows, however, less consistency, it varies from 2.1 per cent in Shanghai to 14.9 per cent in Japan. The high percentage of that particular group in Japan is due to the inclusion of meals outside the home and bought meals for home consumption, the expenses on these two items amount to 6.6 per cent.

Ireland. Comparing the average diet of Shanghai working class with that of the wage-earning population in Western nations, a keen contrast is seen in that the former is largely a vegetarian one with meat, fish, etc. as appetizing food, while the latter consists chiefly of meat and milk with cereals and products as auxilliaries. Ireland is selected for comparison because it is usually regarded as a poor country. According to the Report on the Cost of Living in Ireland issued by the Irish Ministry of Economic Affairs, the percentage expenditure on food based on 308 budgets of wage-earning households collected from 112 towns in June 1922 is as follows:[1]

Food grains	20.1%
Vegetables	7.9
Tea	6.7
Sugar	7.7
Refreshments	1.2
Others	1.7
Total vegetarian food	45.2%
Beef	9.1%
Mutton	5.2
Fish	1.3
Other meat food	18.2
Milk and ghee (clarified butter)	21.0
Total non-vegetarian food	54.8%

The main lesson from the above data is the high percentage expenditure in Ireland on fats and meat food, which amount in aggregate to 54.8 per cent of the total expenses on food. The expenses on non-meat food amount to 45.2 per cent of the total, including only 20.1 per cent of food-grains and 7.9 per cent of vegetables, which as contrasted with the over 60 per cent of cereals and vegetables consumed in Shanghai, Bombay and Japan, show quite clearly the difference between the dietary habits of the East and the West.

The United States. According to the investigation of 11,900 working families conducted by the United States Bureau of Labor Statistics in 1918-1919, the average quantity of annual food consumption of each family is as follows.[2]

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1 Shirras, G. Findlay, op. cit., p. 17. The percentage figures are re-computed from the original data for the purpose of comparison.

2 Cost of Living in the United States, published by the Bureau of Labor Statistics, U. S. Department of Labor, 1924, pp. 118-119. The different items of food given here have been undergone a re-grouping and re-arrangement.

Meat food	
Beef	209.7 lbs.
Pork	87.4 lbs.
Mutton	17.4 lbs.
Poultry and other meat	78.2 lbs.
Fish and other sea food	47.5 lbs.
Oysters	2.3 qts.
Milk and buttermilk	372.8 galls.
Condensed milk, cream, cheese, etc.	144.4 lbs.
Eggs	61.2 doz.
Lard	84.5 lbs.
Grain products	
Flour (Wheat)	260.1 lbs.
Bread (Wheat)	397.7 lbs.
Rice	32.1 lbs.
Other grain products	291.7 lbs.
Beans and vegetables	
Potatoes	762.7 lbs.
Cabbage	63.1 lbs.
Tomatoes	115.2 lbs.
Onions	65.5 lbs.
Asparagus and celery	9.8 bunches
Lettuce	27.4 heads
Spinach and kala, peas, string beans	8.6 pecks
Other fresh and canned beans and vegetables	158.9 lbs.
Others	
Apples and peaches	19.8 pecks
Bananas, lemons and oranges	20.1 doz.
Berries	12.4 qts.
Cantaloupe and water melon	7.8 pieces
Other fruits	47.5 lbs.
Dried and canned fruits	36.6 lbs.
Sugar	107.5 lbs.
Molasses, syrup, honey, etc.	39.0 lbs.
Candy and chocolate	11.7 lbs.
Peanut butter	3.6 lbs.
Topioca, sago, and gelatin	2.6 lbs.
Canned soup	4.8 lbs.
Coffee, tea, cocoa and other food	52.4 lbs.
Lunches	57.7 times

Based on the data published by the United States Bureau of Labor Statistics and the United States Department of Agriculture, an estimate had been arrived at by Dr. Henry C. Sherman as to the distribution of expenditure for food of the average American family, which runs as follows.[1]

	Percentage
Meat and fish (including poultry and shell-fish)	30-40
Eggs	5-6
Milk	7-10
Butter and other fats	7-12
Bread and other cereal and bakery products	10-20
Sugar and other sweets	3-7
Vegetables	7-10
Fruits	2-8
Cheese and nuts	Less than 2

It is evident from the above estimate that a still higher percentage expenditure for meat, eggs and milk, and a lower one for cereals and products are shown in the American dietaries as compared with the Irish food budget. The above comparison, though provides but a rough reference to the habits of food consumption in a few foreign nations, might suggest the superiority of the American and European dietaries to those of the Eastern nations, which gives evidently too much preponderance on cereals and products. A detailed study on the nutritive value of food is to be entered into in the following chapter.

[1] Sherman, Henry C., Chemistry of Food and Nutrition, 1924, pp. 386-390.

V. NUTRITION AND CALORIFIC VALUE OF FOOD

The phenomena of life, to put in simpler words, are just reactions, adopting to environment, of the internal organs with regard to the changes of external forces. These reactions may be generally divided into two kinds: metabolism of material, and metabolism of energy. To support these two metabolic actions, foodstuffs must be taken to be gradually dissolved into simpler compounds in the body, and to be conveyed to different parts for supplementation. The decomposition of the compounds gives combustion, and by combustion heat and energy are generated, heat to maintain the temperature of the body, and energy to exercise its control. The phenomena of life are actually sustained by heat and energy. Some of these matters combine again to form complex compounds to constitute organs of the body. The useless matters resulted from the decomposition are discharged through skin, urinary, and respiratory and digestive organs. This action of sustaining the phenomena of life by taking in foodstuffs is called nutrition. The matters for nutrition are called nourishments.

Properties and Functions of Nourishments.

Food are ordinarily classified into five groups. They are: (1) proteins, (2) fats, (3) carbohydrates, (4) inorganic salts, also named ash constituents or mineral matters, and (5) water. Only recently various kinds of vitamins are discovered. The properties and functions of the various kinds of nourishments are explained as follows:

(1) PROTEINS. Proteins are very complicated nitrogeneous compounds, non-crystalline and gummy-like. They consist of carbon, hydrogen, oxygen, nitrogen, and sulphur—carbon from 50.0 to 55.0 per cent, hydrogen from 6.5 to 7.3 per cent, oxygen from 19.0 to 23.0 per cent, nitrogen from 15.0 to 17.0 per cent, and sulphur from 0.3 to 2.4 per cent. The special property of proteins is the nitrogen and sulphur contained, while other nourishments do not contain these elements. except phosphorus and iron in some rare cases.

The molecule of proteins is exceedingly complicated; so far no definite theory has been arrived at. Food chemists believe that proteins in the process of digestion are first dissolved into various amino acids, then conveyed to different parts by blood, and finally transformed into cellular proteins such as blood, flesh, skin, hairs and others when absorbed. The living cells are always in need of various kinds of amino acids, and so the decomposition of proteins is necessary, Chemists classify proteins into twenty or more kinds of amino acids, of which only a few can be produced in the human body, while the rest are taken from proteins in food. The parts of the animal body, such as blood, flesh, skin, hairs, scales, horns, and others, are almost wholly constituted of proteins.

(2) FATS. Fats are composed of three elements, carbon, hydrogen, and oxygen. Their compositions vary somehow, consisting mainly of glycerides of oleic acid and other fatty acids Oleic acid and its glyceride are liquids, while other fatty acids and their glycerides are white wax-like solids. Those animal fats containing smaller portion of glycerides of other fatty acids are hard, and those containing larger portion are soft. Ordinarily liquid fats are called fatty oils; those slowly drying in air are drying oils, such as China wood oil and linseed oil; and those not drying in air are non-drying oils, such as tea oil and olive oil. Edible oils are generally non-drying oils.

Fatty oils are lighter than water and almost entirely insoluble in water, but soluble in naphtha, carbon disulfide, ether, benzene and chloroform. Fats (including fatty oils) are poor conductors of heat and therefore tend to conserve the heat of the body, while they show on oxidation a much higher fuel value than any of the other foodstuffs.

In digestion the fat is split into fatty acids and glycerine which, however, upon absorption are recombined into neutral fat. It is believed that this recombination occurs during the passage of these digestion products through the intestinal wall. The fat thus absorbed is taken up by the lymph vessels rather than the capillary blood vessel, and is poured with lymph into the blood. The fat which renders the blood plasma turbid at the height of absorption will usually have passed from the blood into the tissues after a few hours. The fat then leaving the blood may be burnt as fuel, or stored for use as fuel in the future, and a part may be transformed into tissue lipoid or enter into combination with proteins to form some of the chemically more complex substances of cellular protoplasm, cell membranes, or of the central nervous system.[1]

Fats are the source of energy. They are mostly stored in plant seeds and meat, but recently it is proved that carbohydrates can be changed into fats within the body.

(3) CARBOHYDRATES. Natural carbohydrates are mostly contained in plants, such as starch, cellulose, sugars and dextrines, which are the main varieties. Carbohydrates are also composed of the three elements, carbon, hydrogen, and oxygen, but the ratio of the compositions of hydrogen and oxygen they contain is exactly two to one, which is similar to that of water, so they are regarded as compounds of carbon and water, generally the chemical symbol $C_m(H_2O)_n$ being employed to express them.

The carbohydrate of the food, having been converted into monosaccharides in the intestine, is taken up by the capillary blood vessels of the intestinal wall and passes from them into the portal vein. The carbohydrate thus stored in the liver cells is deposited in the form of glycogen ($C_6H_{10}O_5$). Then it is gradually converted into glucose and passed into the blood current for combustion. So in blood the glucose content remains small and nearly constant. This indicates that the glucose of the blood must be quite rapidly used.[2]

Though both carbohydrates and fats are the sources of heat, yet the former is easily combustible while the latter is not. Fats when burnt in air produce smoke, but give a luminous flame if burnt together with carbohydrates. This certainly can prove that another function of carbohydrates is to assist the combustion of fats in the body. Incompletely burnt carbohydrates are sometimes poisonous in the body, possibly developing coma, as those happened during famine or to babies over-eaten of fats; it is also due to the lack of carbohydrates in the combustion of fats.[3]

(4) INORGANIC SALTS. The residue after the complete combustion of foodstuffs is collectively called inorganic salts, also as ash constituents, generally being sulphates, phosphates, chlorides and carbonates of sodium, potassium, magnesium, calcium and iron.

During the decomposition of proteins, sulphuric and phosphoric acids are produced, too much of which being poisonous. So, the ash constituents, capable to neutralize these acids, is also very important physiologically. The ash constituents though do not generate heat, yet the value of ite phosphorus, calcium, iron, iodine and common salt is highly esteemed. Phosphorus constitutes brains, nerves, and also sperms, therefore it bears close relationship with mental thinking and fertilization; calcium constitutes the bones, assisting their development and strengthening the teeth; iron, the most essential part of blood; iodine, the thyroid gland and white corpuscles; and common salt is necessary for stimulation on heart.

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1 Sherman, op. cit., p. 115.

2 Ibid., p. 104.

3 Plimmer, V. G. and Plimmer, R. H. A., Vitiamins and the Choice of Food, 1922, pp. 6-7.

(5) WATER. Two thirds of the body is water, which should be frequently taken in to supplement the losses by perspiration, urination and evaporation (moisture exhaled from lungs). If there is lack of water in the human body, digestion and absorption of foodstuffs will be hampered, blood will be too thick to be mobile, and even the secretion of the wastes might be hindered; so sufficient water is necessary. But the supply of water is abundant in nature, and all ordinary foodstuffs contain water, therefore in nutrition study it is little considered.

(6) VITAMINS. Vitamins are are recently discovered. They are, though small in quantity, yet absolutely necessary for nourishment; if they are absent in foodstuffs, no animal can possibly attain full growth.

Five kinds of vitamins are now recognized, so far their individual properties are not clearly defined because of the present difficulties to isolate pure substances. From the results obtained through researches conducted ever since, a general review is outlined in the following:

Fat-soluble Vitamin-A. This vitamin exists and dissolves in tallow, liver oil and other fats. Until now it is still a question whether in the fats of common animals does this vitamin exist. Tallow contains a large amount of Vitamin-A, but no nitrogen and phosphorus. Consequently, it is known that Vitamin-A does not have such elements. As to its resistance against heat, there is no appreciable injury up to 100°C., but oxidation has considerable effect. It is not produced in animal bodies, but found in the green leaves of plants. All plants which contain chlorophyll, such as weeds, possess this kind of vitamin in abundance. Its functions on animal physiology have not yet been made perfectly clear, but its greatest importance is, without doubt, to stimulate animal growth, and it bears close relationship, together with the presence of Vitamin-B and C, to the metabolism of fats.

Water-soluble Vitamin-B. This vitamin dissolves readily in water and 95 per cent alcohol. Pure Vitamin-B still cannot be isolated at present, but can only be concentrated into thicker products. Under high pressure and heated to 100-120°C., only a small part is affected, so it would not lose its function within ordinary cooking conditions. In the presence of caustic, considerable damage is done; in 10 per cent caustic solution, most of the vitamin would be destroyed when heated to 90°C. While cooking beans and vegetables, the addition of a little soda, though softens and makes them tasty, is very injurious to the vitamins. Husks of cereals are very rich in this vitamin; we are accustomed to consume over-milled rice, and easily have beriberi, being simply a phenomenon of the lack of this vitamin. Though its functions on physiology are not clear, yet by experiment the close relationship of Vitamin-B and the metabolism of carbohydrates in food definitely proves its ability to improve appetite. The greater the amount of carbohydrates in food, the greater the quantity of Vitamin-B is necessary.

Water-soluble Vitamin-C. This vitamin is recently discovered, many of its properties being unknown. They are very difficult to be verified because of the changes due to oxidation, heating, drying and other treatments. Its resistance against caustic, even soda, is very weak. Its most outstanding function is anti-skorbut, and it exists in fresh tomatoes, beets, lettuce, lemons, oranges, and other fruits and vegetables.

Vitamin-D. Its function is to assist the metabolism of calcium and phosphorus, closely related to the development of bones. If this vitamin is absent, and calcium and phosphorus are poor in the contents of food, rickets are developed. It is absent in beans and cereals, but rich in vegetables. It is not constant in composition, varying with the seasons. By experiment, it is found to be in abundance in cabbage and rape.

Vitamin-E. If it is absent in food, ovaries and testes would not attain their maturity, thus decreasing reproduction, so it is also called infantismus vitamin. The foodstuffs rich in this vitamin are wheat oil and vegetables.

In conclusion, though the functions of these six kinds of nourishments are rather complicated, they can be generalized thus: proteins assist growth of the body and supplement its wastes; fats and carbohydrates supply energy to the body and preserve its temperature; inorganic salts constitute the bones and blood; water conducts matters to different parts of the body and helps the chemical reactions; vitamins catalyze full growth of the body to maintain the functions of life.

Calorific Value of Food. A majority of the foodstuffs decomposes in animal bodies into simpler compounds and generates heat, thus supplying the energy they need. Generally it is calculated as calories, the heat required to raise the temperature of one cubic centimeter of distilled water through one degree Centigrade. But the unit used in the following is kilogram-calorie, which is a thousand times the gram-calorie.

The decomposition of foodstuffs in animal bodies by oxidation is a kind of combustion, similar to that in air. From the chemical analysis of the organic substances—proteins, fats, carbohydrates—in foodstuffs, and their respective observed calorific values by complete combustion in calorimeter in the presence of oxygen, the total calorific value of the foodstuffs can be calculated. Fats and carbohydrates are completely burnt in the body, so their calorific values are the same as burnt in oxygen. Proteins are only partly burnt in the body, a loss of 1.3 calories per gram, and partly changed into urea and combined with other organic compounds to be discharged. So the calorific value of proteins in the body is actually less than that observed in the calorimeter,

In view of these conditions, chemists determined the average calorific values as the following:[1]

Proteins	4 calories per gram
Fats	9 calories per gram
Carbohydrates	4 calories per gram

Human beings and animals could be regarded as calorimetric engines. According to many food chemists, the energy expenditure of an average sized man (weighing 70 kilograms or 145 pounds) per hour under different conditions of activity is as follows:[2]

8 hours of sleep	(65 calories per hour)	520 calories
2 hours of light exercise	(170 calories per hour)	340 calories
8 hours of labour	(240 calories per hour)	1,920 calories
6 hours of rest	(100 calories per hour)	600 calories
The total amount of calorific value required per day		3,380 calories

An average Chinese is less than 70 kilograms in weight, so the amount of calorific value required is smaller, in average about 3,000 calories for a grown-up person per day.

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1 Sherman, op. cit., p. 143.

2 Ibid., pp. 185-186.

Food of Shanghai laborers Gives 3,000 Calories of Fuel Value.

All food chemists agree that the lack of nutrition in food is one of the main causes for the degeneration of energy, decrease of efficiency, and growth of death-rate. Often pigeons and rats are used for experiments. Foodstuffs that lack Vitamin-A cause xelophthalmia and rickets, those lacking Vitamin-B neuritis, which appears in the form of beriberi in human body, and those lacking Vitamin-C skorbut. If a Guinea-pig is fed with this kind of food for three weeks, its joints will be found soft and swollen with blood oozing out, its digestive facilities injured, and it dies within thirty days. Foodstuffs lacking any other kind of important nourishment affect life and growth both physically and mentally. In the experiments of Prof. Wu Hsien, Peiping Union Medical College, Peiping, he put rats of the same birth into two separate groups, one of which was fed with Chinese diet and the other American. No definite sign of illness was observed in either groups in the beginning. But the rats of the latter group began to exceed those of the former in weight. Four weeks after, the latter rats weighed 40 to 60 grams, while the former ones weighed only 25 to 40 grams. From this, the importance of the effects of food on body growth is established without doubt.[1]

How much nutritive value is there in the food of Shanghai laborers? Is there anything wanting or necessary to be improved? How does it compare with the food of laborers elsewhere? These are some of the questions that may be raised and an answer may be found in the following pages.

TABLE XXI. NUTRITION AND CALORIFIC VALUE OF THE DAILY FOOD OF AN AVERAGE EQUIVALENT ADULT IN SHANGHAI WORKING FAMILIES

Food items	Proteins grams	Fats grams	Carbohydrates grams	Calorific value calories
Rice and wheat	50.014	2.833	505.588	2,247.905
Beans and bean products	15.139	4.931	27.091	213.299
Vegetables	4.395	.578	17.510	92.822
Meat and fish	8.471	9.443	.331	120.195
Eggs and milk	.711	.555	.026	7.943
Oil, sauce and sugar	2.715	29.384	6.193	300.088
Others	1.029	1.065	3.099	26.097
Total	82.474	48.789	559.838	3,008.349
		PERCENTAGE		
Rice and wheat	60.64	5.81	90.31	74.72
Beans and bean products	18.36	10.11	4.84	7.09
Vegetables	5.33	1.18	3.13	3.09
Meat and fish	10.27	19.35	.06	4.00
Eggs and milk	.86	1.14		.26
Oil, sauce and sugar	3.29	60.23	1.11	9.97
Others	1.25	2.18	.55	.87
Total	100.00	100.00	100.00	100.00

Based on Table XXI, the calorific value in the food of an adult Shanghai laborer amounts to 3,008 calories. For a laborer at light work it is fairly enough.

Sources of Calorific Value.

A recommended distribution of calories for an economical but healthful dietary for families in the United States is as follows:[2]

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1 吳憲, 營養概論, 商務印書館出版, 十八年十二月, pp. 72-73.

2 Buck, J. L., Chinese Farm Economy, p. 365.

	Percentage
Cereal grain	30-40
Milk	20-15
Meat, eggs, cheese, etc.	5-10
Vegetables and fruits	12-15
Fats and oils	10-12
Sugar	10-12

According to the above standard, the sources of calorific value in food of the Shanghai laborers—in fact of all the other principal Chinese cities—are just the opposite of this suggestion, 74.7 per cent from cereals, more than double of that in the standard given above, and less than 0.2 per cent from milk, which is much too low. Our food, composed mostly of cereals, which naturally results in the loss of balance in proportion with other foodstuffs, necessitates proper remedy.

The total calorific value of food is the sum of the calorific values of proteins, fats and carbohydrates. Theoretically, so far as their calorific values meet our demand, their proportions can be changed and interchanged at will. But in fact, proteins in food must be kept above a certain limit, and the proportion of other nourishments should be suitably adjusted too. Many food chemists have tried to determine the least amount of proteins and their proportion in connection with other nourishments; but their theories differ from one another.[1] According to Chittenden, the minimum amount of proteins necessary for an adult of 70 kilograms is 49 grams per day, and so 60 grams is sufficient.[2] But according to Atwater, an adult at hard muscular work needs 150 grams, at moderately active muscular work 125 grams, and at sedentary 100 grams.[3] Though their ideas differ widely, yet there is rational basis for the custom of allowing enough protein to furnish from 10 to 15 per cent of total energy value of the diet.[4] According to this standard, 70 to 110 grams of proteins are needed, if the calorific value necessary for an adult per day is 3,000 calories.

As to how the proteins, fats and carbohydrates in the diet should be adjusted, there are different opinions.[5] But the following scale should be sufficient to supply the calorific value necessary for an adult engaged in light work per day:[6]

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[1] See Carter, Howe, Mason, Nutrition and Clinical Dietetics, p. 81. The minimum requirement of nourishments according to various authors is as follows:

Author and his specifications	Standard dietary			
	Proteins grams	Fats grams	Carbohydrates grams	Fuel value calories
Atwater:				
man at hard muscular work	150			4,150
man at moderately active muscular work	125			3,400
man at sedentary or woman with moderately active work	100			2,700
man without muscular exercise or woman at light to moderate work	90			2,450
Voit:				
common diet	118	56	500	3,053
severe exercise	145	100	450	3,300
Playfair:	119	51	531	3,060
Gautier:	107	65	407	2,630
Chittenden:	60			2,800

[2] Sherman, op. cit., p. 220.

[3] Ibid., p. 363.

[4] Ibid., p. 222.

[5] Carter, Howe, Mason, op. cit., p. 8.

[6] Plimmer and Plimmer, op. cit., p. 9.

Proteins	100 grams= 400 calories
Fats	60 grams= 540 calories
Carbohydrates	550 grams=2,200 calories
	3,140 calories

Let us see how many grams of proteins, fats and carbohydrates are there in the daily food of an adult Shanghai laborer. What percentages do their respective calorific values constitute? And how the constituents of the Shanghai dietary differ from that of other localities?

TABLE XXII. A COMPARISON OF THE NUTRITIVE AND CALORIFIC VALUE OF THE DIETARIES IN SHANGHAI, PEIPING AND THE UNITED STATES

Nourishments	Shanghai			Peiping middle class †			Peiping laborers ‡			United States *		
	Grams	Calories	Percentage	Grams	Calories	Percentage	Grams	Calories	Percentage	Grams	Calories	Percentage
Proteins	82.5	329.9	11.0	91.7	366.8	12.3	75.9	303.6	11.7	106.0	424.0	13.0
Fats	48.8	439.1	14.6	40.0	360.0	12.1	29.6	266.4	10.3			
Carbohydrates	559.8	2,239.4	74.4	562.4	2,249.6	75.6	505.3	2,021.2	78.0			
Total	691.1	3,008.4	100.0	694.1	2,976.4	100.0	610.8	2,591 2	100.0		3,256.0	100.0

† 吳憲: op. cit., p. 75.

‡ Tao, L. K., op. cit., p. 96. The original text gives 2,595.14 calories as the total calorific value; the number is recomputed here.

* 吳憲: op. cit., p. 57.

Fats and Proteins Insufficient in the Shanghai Diet.

From Table XXII, the amount of proteins in the daily food of an adult Shanghai laborer is 82.5 grams; fats, 48.8 grams; and carbohydrates, 559.8 grams. To judge them from the above mentioned standard, fats and proteins are insufficient. The percentage of calorific value from proteins is 11, which is near to the lowest limit and even poorer than that of the Peiping diet. The insufficiency in the amount of fats is undoubtedly true; though it is better than that in Peiping, yet is already slightly below the lowest limit fixed by food chemists. According to Pearl's report, an American consumes 113 grams of fats per day, which is very high as compared with ours.[1] The amount of carbohydrates is not too much, similar to that of the Peiping diet, and represents about three-fourths of the total calorific value. Nevertheless, carbohydrates and fats, both generating heat, are interchangeable. And since carbohydrates can be transformed into fats in the body, it is not necessary to follow the standard exactly and it would not do any harm if the balance is upset. Fats are solvents for Vitamins A, C and E, and the fats in the food of the Americans are butter, rich in vitamins. It must be noticed that the fats in the food of the Chinese are scanty and poor in vitamins, such as lard, soy bean oil and rape seed oil. Though protein is necessary, yet the question of its quality is even more important than that of its quantity. Therefore let us study more closely on proteins.

A Close Study on Proteins.

It has been shown that the body tends to adjust protein metabolism to its protein supply.[2] If fats and carbohydrates are sufficient in the body, the demand of proteins does not necessarily depend upon the expending of energy.[3] When the

1 Pearl, R., Studies in Human Biology, p. 419.

2 Sherman, op. cit., pp. 207-209.

3 Ibid., pp. 210-217.

generation of heat is increased due to exercise, only fats and carbohydrates are supplemented but not proteins. However, proteins are the most important nourishment in the diet, they have special functions in supplying materials for cell construction and its supplementation, and they have close relationship with all parts of the human body. So, the demand of proteins depends upon the amount of the tissue. Children, during their growth, need more proteins than adults. The value of the various proteins is different physiologically. Wholesome proteins can be changed into tissue proteins, a physiological efficiency of 100 per cent. Poorer proteins, without the assistance of other compounds, does not form tissue, a physiological efficiency of naught. Theoretically, the value of medium proteins should be between the two. But actually after the proteins are digested, only a part is changed into tissue in the cells, while the rest is burnt. Therefore the physiological value of proteins varies inversely with their compositions in the diet: the higher the composition the lower the value and the more is burnt, and vice versa. For instance, when the proteins in milk are 10 per cent of the diet, its physiological value is 85; but when they are 5 per cent, its value is 93.

Theoretically, the closer the order of the living beings, the more similar are the properties of their proteins. So, animal proteins are nearer to human proteins in their properties than plant proteins. When plant proteins are consumed by animals and changed into animal proteins, their amino acids must undergo careful selection and are subject to great loss. If ten pounds of cereals are fed to the cow, only one pound of beef or six pounds of milk can be obtained. Thus, the value of animal proteins is higher than that of plant proteins not only physiologically but also economically. According to Mitchell's experiments, the respective physiological values of various proteins, each constituting one-tenth of the diet, are as follows.

Eggs (whole)	94	Tenderloin	69	Corn (whole)	60
Milk	85	Pork	74	Potatoes	67
Albumen	83	Veal	62	Soy bean	64
Ox liver	77	Oats	65	Horse bean	38
Ox kidney	77	Wheat (whole)	67	Cocoa	37
Ox heart	74	Flour	52		

Proteins also have a kind of co-öperative function. The proteins in foodstuffs are mainly of the medium or poorer classes; the reason why they can comply to our nutrition wants is because the proteins in our diet are of more than one variety and they develop co-öperative functions among them. Supposing that there are two kinds of proteins: Protein A has much X amino acid, but no Y amino acid; protein B has much Y amino acid, but no X amino acid. A or B alone in the diet has low physiological value. But when they are mixed in the right proportion, they do not differ at all from perfect proteins. This is because the lacking of Y in A is supplemented by that in B, and the lacking of X in B is supplemented by that in A. For instance, when flour is the only food in the diet that contains proteins, its physiological value is 55, and the physiological value of beef is 69 under similar conditions. If one part of beef protein is mixed with two parts of flour protein, their velue will be 73. Again, neither wheat protein nor soy bean protein, when representing 10 per cent of the diet, is able to make rats grow normally. But if three parts of wheat are mixed with one part of soy bean, the result is excellent. Generally proteins in foodstuffs of the same class have little co-öperative function, because when their class is the same, the class and proportions of the amino acids consisted in the proteins would be the same. Among cereals this co-öperative function is lacking, which can be made up with milk, meat, or vegetables.[1]

[1] 吳憲, op. cit., pp. 10-16.

The calorific value from proteins in the food of Shanghai laborers is in average less than 11 per cent, as already stated. If the sources of these proteins are superior and well mixed, there would be no deficiency. A study of the sources and quality of the proteins consumed by Shanghai laborers might be interesting.

TABLE XXIII. AMOUNT OF PROTEINS AND CALORIFIC VALUE OF THE DAILY DIET PER PERSON IN SHANGHAI, PEIPING AND THE UNITED STATES

Food items	Shanghai		Peiping†		United States‡	
	Protein	Calorific value	Protein	Calorific value	Protein	Calorific value
Rice and other cereals	60.6%	74.7%	73.9%	82.0%	37.3%	38.2%
Beans and vegetables	23.7	10.2	14.6*	6.3*	10.4*	12.1*
Meat and fish	10.3	4.0	9.7	6.1	35.3	19.0
Eggs and milk	.9	.2	.9**	.3**	16.3	9.9
Oil, sauce and sugar	3.3	10.0		4.3	.4	20.4
Others	1.2	.9	.9	1.0	.3	.4

† 吳燕: op. cit., p. 58.
‡ Sherman: op. cit., p. 555.
* Including fruits.
** Eggs only, milk lacking.

From Table XXII, the proteins in the daily food of Shanghai laborers amount to 82.5 grams, only 11.2 per cent of which comes from animals—meat, fish, eggs, and milk, and the rest comes from plants, particularly from cereals—rice and flour, 60.6 per cent. Though the amount of proteins consumed is sufficient, yet their quality is definitely very poor, since proteins from plants are inferior to those from animals. Due to the improper adjustment of the sources and their co-öperative function, their value is greatly reduced physiologically.

Not only in the food of Shanghai laborers but in the dietary all over China, the protein contents are poor. The food of Peiping middle class are even poorer than those of Shanghai laborers. Though the amount of the proteins is comparatively more, yet 73.9 per cent of them comes from cereals, 14.6 per cent from beans and vegetables, and 9.7 per cent from meat and fish which is the same as that of Shanghai. Thus, nine-tenths of the proteins in the food of the Chinese come from plants, and the other one-tenth comes from animals. This inferiority in quality and maladjustment of sources are physiologically unwholesome both to the mature and the young.

Main Differences Between Chinese and American Dietaries.

From Table XXIII, if the diet of the Chinese is compared with that of the Americans, there are at least three main differences: on the basis of heat generated, cereals constitute about seven-tenths of the food of the Chinese, but only about four-tenths of that of the Americans; proteins from animals constitute only 10 per cent in the food of the Chinese and 52 per cent in that of the Americans. Again, the Americans use much milk and its products as food, while the Chinese do not.

According to Sherman's investigation, an American, whose average weight is 70 kilograms, consumes 106 grams of proteins per day, being 1.52 grams per kilogram of his bodily weight; and a Shanghai laborer, whose average weight is 60 kilograms, consumes 82.5 grams of proteins per day, being 1.38 per kilogram. Food of the Chinese as compared with that of the Americans is much inferior. And again, proteins in the diet of the Americans come mostly from animal food

like milk, eggs and meat, and their digestibility is high; those of the Chinese come almost entirely from cereals and beans, so their digestibility is low. The so-called digestibility is the ratio of the quantity digested and that consumed, e.g., out of the 100 grams of bread protein 15 per cent is undigested and turned into wastes and the other 85 per cent is digested, thus the coefficient of digestibility is 85. But the coefficients of digestibility of all foodstuffs are not constant. It depends not only on its quantity, but also on the properties and quantities of other foodstuffs. When any foodstuff is taken in alone its digestibility is low, but when taken in together with other foodstuffs its digestibility is higher; and the larger the amount consumed, the lower the digestibility. According to McKay, a person, who eats 560 grams of rice, has 64 for his coefficient of digestibility of proteins; 680 grams of rice, 55 his digestibility; and 850 gams of rice, 46. The digestibility of the proteins in other cereals is no better than that of rice, and that of beans would be still worse.

Inorganic Salts in Food. Food chemists of yesterday generally neglected the mineral matters in food. Such inorganic salts as potassium, sodium, magnesium, chlorine and iodine are far more than sufficient in food. Proteins contain sulphur, so a sufficient amount of proteins will give enough sulphur. Calcium, phosphorus, and iron are however lacking. According to Sherman, 0.68 gram of calcium, 1.44 grams of phosphorus, and 0.015 gram of iron are the minimum requirement for equilibrium per day. During the growth of a child the above quantities should be doubled.[1] The quantity of inorganic salts in foodstuffs is not so constant as the quantity of carbohydrates, proteins and fats. Experiments are necessary to determine accurately the quantity of inorganic salts when we study the diet. In the present volume, in regard to inorganic salts in the various foodstuffs of the diet of Shanghai laborers, only those fairly large in quantity are mentioned in Appendix I, and the determination and identification of their quantities are left to chemists to verify. Since the Chinese food consists mainly of cereals, and its nutrition values are rather constant, the diets at different localities do not differ much from each other. The numerals concerning the inorganic salts in the food of Peiping residents collected by Prof. Wu Hsien are tabulated in Table XXIV.[2]

TABLE XXIV. CALCIUM, PHOSPHORUS AND IRON CONTENTS PER DAY PER PERSON IN PEIPING AND AMERICAN DIETARIES

	Peiping	United States*
Calcium	.3370 gram	.7400 gram
Phosphorus	1.1780 gram	1.6300 gram
Iron	.0187 gram	.0179 gram

* Quoted from H. C. Sherman's investigation.

From the above, iron consumed by both nationals per day is sufficient. Calcium and phosphorus in the daily food of the Americans already exceed Sherman's standard, but those in the diet of Peiping residents are deficient, particularly calcium being only half of that of Americans. According to Sherman's investigation, the quantity of calcium in the diet of Americans depends upon the quantity of milk, and so it explains the lack of calcium among the Chinese who take almost no milk at all.

Vitamins in Food. Until now we still can not isolate pure vitamins, and their presence and quantity are indirectly verified by experimental methods. Therefore, we can not definitely state whether the vitamins in the diet of Shanghai laborers are sufficient or

1 Sherman, op. cit., p. 383.

2 吳憲, op. cit., pp. 56, 66-67.

not. In Appendix 1, the varieties and quantities of the vitamins in the various foodstuffs for Shanghai laborers are recorded in detail. In Appendix 2, those foodstuffs rich in vitamins are tabulated.[1]

Vitamin-A. Eggs, milk and their products are the sources of Vitamin-A in the diet of the Westerners. In the diet of Shanghai laborers, or the Chinese in general, there is no milk, only small amount of eggs. Our Vitamin-A comes mostly from vegetables. If we want to attain the equivalent quantity of Vitamin-A as that of the Westerners, we have to increase our consumption of vegetables. Among the vegetables, spinach, cabbage and lactuca sativa are rich in Vitamin-A, but in cucumbers, egg plants and turnips, there is only trace of it if not entirely absent. It is present in meat, but is not rich. So, in the diet of Shanghai laborers, Vitamin-A is likely to be deficient.

Vitamin-B. Rice and flour, the main part of our food, contain little Vitamin-B. The chief sources of our Vitamin-B are beans, such as soy bean, red bean, bean curd, bean sprout, horse bean and bean oils, which are rich in Vitamin-B, but the quantities consumed are still not enough. Egg yolk, most rich in Vitamin-B, is no longer a common food for the laboring class, because of exportation and high cost. Thus, in the diet of laborers there is also a deficiency of Vitamin-B.

Vitamin-C. Lemons and oranges are richest in Vitamin-C, but their prices are much too dear; vegetables like cabbages (half cooked) potatoes (half cooked) and bean sprouts are rich in this vitamin also, so the diet of laborers contains sufficient Vitamin-C.

Vitamin-D. It is absent in all cereals and beans. According to Prof. Wu Hsien, out of the twenty or more kinds of vegetables in North China those rich in Vitamin-D are just rape, cabbage, and a few other kinds. These vegetables are not so good in winter as they are in summer. Sunlight has the function of synthesizing Vitamin-D. Even if it is lacking in the diet, therefore, people working under sunlight would have no difficulty with it. City-dwellers have lesser chance to receive sunlight. It might be sufficient in summer, but in winter it is likely to be deficient.

In conclusion, though the total calorific value generated is sufficient, yet the proportion between proteins, fats and carbohydrates does not seem to be properly adjusted. Nine-tenths of the proteins come from plants, and the other one-tenth from animals; they are not good in quality nor are physiologically wholesome. Iron among inorganic salts is enough, but calcium and phosphorus are deficient. Both Vitamin-A and D are lacking.

Some Suggestions for Improvement of Diet.

The diet of the people in various localities depends on their respective natural products and their economic conditions. And the latter is more important. Because of the convenience of modern transportation, the diet of the people does not have to be limited by local supply, but their economic conditions inevitably play an important rôle in the selection of their food. China produces a great amount of eggs each year, but the farmers find it more profitable to export them at a good price than to sell them at native markets; while the Americans use a large part of them to make biscuits with. To get well balanced diet for the the poverty-stricken people is a hard problem. Prof. Wu Hsien has made a few suggestions on this point which are worth noting.[2]

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1 Vide, Appendix in Chinese.

2 吳憲, op. cit., p. 73-76.

(1) Milk products are rich in nourishments, and especially good for children. Milk in China is sold at a price that is beyond the reach of the average people, not to speak of the laborers. But the nutrition value of goat's milk is not inferior to that of cow milk, and goats are easier to raise. It would be worthwhile for families which have a piece of lawn to raise a few goats and to add to their daily food a few glasses of goat's milk. This is of course not possible for laborers in the city.

(2) Besides milk products, egg is also rich in nourishment. So, the consumption of eggs should be encouraged to make up our deficiency in milk. A middle class family should keep a few chickens. This is also not feasible for laborers in the city.

(3) The husks of cereals are rich in Vitamin-B and and inorganic salts. The practice to take rice and flour and to use their husks to feed cattle is indeed regrettable. It is more advisable to eat whole rice and whole wheat, or to take coarse rice (husks not removed) and brown flour. The American whole wheat bread is highly valued by hygienists, and even wheat bran is used to make cakes for breakfast recently. Many a Chinese consider native flour as cheap food, and prefer imported flour, but the nutrition value is not so good. Coarse rice, not milled, is better than ordinary rice, so it should be used more. Recently the use of coarse rice or rice and wheat together is much promoted. This is both economical and hygienic. But wheat produced in the South is not sufficient even if the demand is not increased. As in Shanghai, the decrease of consumption of the first-rate rice would be an advantage from the view point of health and economy. The Bureau, therefore, has tested and analyzed 15 different kinds of rice. The result shows that rice contains less proteins and fats than coarse rice, and Changshu rice (the best quality) contains the least.[1] So the coarser the rice the richer the nourishment. The reason is that the bran which has much proteins and fats is lost with the husk when hulled. Besides, the bran also contains a large amount of iron, phosphorates, and Vitamins-A and B. All of these are effective cures for beriberi and are important nourishments for the human body. Again, the value of rice is decided by its calorific value, and experiments show that the first-grade rice ranks the lowest. But Shanghai people like it because it tastes better, and then the farmers around Shanghai, in order to meet this demand, hull their rice until they are snowy. According to reports of the rice merchants, one picul of coarse rice produces about 8.2 pecks of rice, and only about 7.2 of the first-grade rice. Statistically, no less than 500,000 piculs of rice are wasted annually due to hulling. To squander such an essence of food on pigs, while many others do not have enough to live on, is a serious problem to be considered. Moreover, a shortage of rice due to such squanderings would tend to raise the price of all other kinds of rice, which is again disadvantageous to the poor.

(4) Soy bean and its products contain proteins of good quality. Bean curd and bean milk are especially good for children. In the diet of Chinese, the amount of cereals should be reduced, and a part of which substituted with bean products, for beans surpass cereals both in the amount of the vitamins and inorganic salts.

(5) Green vegetables are rich in vitamins and inorganic salts. The diet of laborers, lacking milk, should all the more include a great amount of vegetables. The consumption of tomatoes, a rare vegetable containing all the Vitamins A, B and C, should be promoted. The green leaves contain most and the best of the nourishment in vegetables. The practice to throw away the leaves and save only the stems should be avoided.

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[1] See "The Shun Pao," Shanghai, April 25, 1930.

(6) A few improvements could be made in our cooking methods. There are three reasons why food should be cooked: to make it more digestible; to make it tasty; and to disinfect it. But over-cooking is injurious. Vitamins decompose when heated, especially Vitamins A and B. So the time of cooking should not be too long. For ordinary vegetables, ten minutes would be enough. Some foreign vegetables which are clean could be taken without being cooked. Vegetables in China, fertilized with manure, ought not to be taken raw.

Most of the vitamins and inorganic salts in vegetables dissolve readily in water. The practice of first boiling the vegetables in hot water and decanting away the first cooking, deprives them of all their nourishing value. Vegetables ought to be washed in cold water, and to be taken together with the their soup after cooking. And in the way the Southerners cook their rice, first boiling the rice in water and decanting out the solution which is set aside for starching clothes, not only the vitamins and inorganic salts are lost, but also much of the proteins and carbohydrates. The Chinese in cooking sometimes add caustic to soften the food. This practice is not hygienic. Caustic not only destroys the gastric juice, but also the vitamins, which easily decompose when heated with caustic, such as Vitamins A and B. Amino acids in the proteins decompose also in caustic solution.

VI. HOUSING

Sanitary Aspect of the Question of Housing.

The question of housing and its bearings upon the living condition of laborers might entertain a thorough-going discussion from different points of view —sanitary, moral, and more particularly economic. The sanitary aspect of the question has direct bearing upon the physical efficiency of the working population. The legislative efforts manifested in the enactment of factory laws, the regulations governing the age of workers and hours of work, the requirement of sanitary provisions in factories, the insurance against industrial accidents and diseases, and similar achievements are evidences of the public attention toward the welfare of the laboring class. A sound bodily constitution, however, depends more upon a hygienic living quarter than anything else. Evidences are not lacking in many an investigation conducted in various countries, showing how closely related is the problem of housing accommodation to the healthiness of the dwellers. Dr. A. K. Chalmers, Medical Officer of Health of Glasgow, in a pamphlet on "The House as a Contributory Factor in the Death Rate" gives the relation between number of rooms or apartments per family and the death of persons living in such, basing on his study during the period from 1909 to 1912. His data reveal that the death rate is 25.9 to a thousand in houses of one apartment, 16.5 in houses of 2 apartments, 11.5 in houses of 3 apartments and 10.8 in houses of 4 apartments.[1] That the size of the home has a telling effecting upon stature was demonstrated during a previous inquiry carried on by Dr. W. L. Mackenzie and Captain Foster of the Scotish Education Department and covering the school year of 1905-06. The examination of 72,857 school children between five and eighteen years of age gave the following results.[2]

Size of home	Boys		Girls	
	Av. weight	Av. height	Av. weight	Av. height
One-roomed homes	52.6 lbs.	46.6 ins.	51.3 ins.	46.3 lbs.
Two-roomed homes	56.1	48.1	54.8	47.8
Three-roomed homes	60.0	50.0	59.4	49.6
Four-roomed homes	64.3	51.3	65.5	51.6

The most interesting investigation showing the probable relation between health and housing was made by the United States Children's Bureau in Johnstown, Pennsylvania. Taking infant mortality as the basis of investigation, it was found that the mortality rate of babies of at least one month old sleeping in well-ventilated rooms was 28.1 per thousand, and that of sleeping in poorly ventilated rooms was 169.1; that in dry houses the infant death rate was 122.5 as against 156.7 in houses that were considered damp; that in homes with indoor water closets an infant death rate of 108.3 was shown as againt 159.3 in homes that used yard privies; and that in homes where water was piped into the house the infant mortality rate was 117.8 as compared with a rate of 197.9 in homes where water had to be carried into the house from outdoors.[3] C. B. Purdom in his book "The Garden City" tells the following: There were 872,767 children born in England and Wales in 1912 and of these 82,939 died in their first year. That gives a rate under normal conditions of 95 for every 1,000 births, which is the lowest infantile mortality rate on record. In the garden city the rate was 50.6. If the rate throughout the country had been as low as the garden city, nearly half the children who died last year would have survived.[4]

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1 Aronovici, Carol, Housing and the Housing Problem, National Social Science Series, 1921, pp. 10-11

2 Ibid., p. 12.

3 Ibid., pp. 8-9.

4 Ibid., p. 10.

By the facts above cited, it has been forcefully borne out the significance of housing conditions to the wholesomeness of the people. Dr. Arthur Newsholme in his monumental work, "Vital Statistics," expresses his opinion that "infant mortality is the most sensitive index we possess of the sanitary conditions of the home," and has come to the conclusion that from the point of view of longevity there is a "gain from being born in a healthy district."[1]

Moral Aspect.

The housing condition of an individual bears not only important effect upon his physical built, but also significant influence on his mental qualifications. Think of the housing condition under which most of our working people are living. Five or six families have to squeeze in a single house. One small dirty room is to be shared by several members, if not all the members, of a family. What can such a home, if it must be so called, give to the dwellers, naturally no comfort, hardly any pleasure, and not a whit of privacy. Under such circumstances, it is not to be expected that the individuals shall be bred up to a quality of moral observance, mental discernment and moderate disposition. Again, the practice of taking relatives or friends to live with the family tends to give rise to further inconveniences and oftentimes to difference in opinions. The result is to add to the already ill-conditioned home life another unfavorable effect of so-called "lodger evils." The working people, so bred up and so accommodated, are apt to cherish a curse on their life and a detestation on their houses. Most of them become care-free about their behavior and oftentimes seek to make up their unpleasant home life by indecent indulgences. Behind all the social factors that lead to public sins, therefore, lies the often overlooked yet quite serious problem of housing.[2]

Economic Aspect.

The fundamental cause of all such insanitary and indecent living which almost infallibly accompanies the wretched housing condition of the laborers is essentially an economical one, a question of rent. As a result of the industrial developments and the drift of rural population toward the city, there has been an ever increasing demand for urban houses. Accordingly, urban rents are quickly rising to a higher level than before. The laborers, who find their earnings not being able to keep pace with or, in fact, lagged far behind the rising standard of rentals, are forced to take up cheap houses and are given no choice for a decent neighborhood or even a minimum state of repair, cleanliness and sanitation. Hence, it has given rise in any of the industrialized cities to certain quarters wherein are flocked homes of laboring families of low means and which gives very little trace of modern standard of comfort and decency. It might be well to conclude the discussion on the economic aspect of housing by quoting here some of the main principles which determine cost and rent of houses.[3]

1. An increase in the population without a corresponding increase in the housing accomdations of a community determines an increase in rental rates.
2. Rents increase with the increase in the height of buildings.
3. Land values increase with the intensity of land use and the intensity of land use increases with the increase in the height of buildings.
4. Rentals per cubic foot of air space increase with the decrease in the size of apartment and the size of apartment decreases with the increase in height of buildings.
5. The taxation of improvements on land and the failure to tax potential land values curtail building enterprise, thereby reducing the supply of homes which results in a rise in rental rates.

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1 Ibid., pp. 8-9.

2 Ibid., pp. 20-21.

6. The strict regulation of new construction without a corresponding increase in the control of old buildings tends to promote the maintenance of old rather than the building of new homes and thereby affects the rentals without a corresponding increase in the quality of accommodations.
7. Accessibility by means of transit facilities or actual proximity to place of employment, amusement, and cultural centers, etc., when furnished only to a portion of the population of the community tends to increase rentals in direct proportion to accessibility.

Three Types of Houses. The houses occupied by the working families in Shanghai might be classified according to the form of structure into three types:

(a) Houses of comparatively better type—Houses of this type are usually two-storied buildings which consist either of a wooden door with stone frame at the main entrance opening into a courtyard of from 100 to 200 square feet or of a wooden door with no stone frame opening directly into the sitting room. The interior of both forms of houses is of similar structure, only the latter are usually smaller in area than the former. The sitting room on the ground floor is sometimes divided into two. The first floor consists likewise of two rooms, the back room usually occupies less space than the front and is not provided with any window. At the rear of the main building are a kitchen on the ground floor and a small room upstairs, at the top of which is the varanda mainly for the purpose of sunning clothes. No toilet facilities are provided in the house. For the economy of rentals, it is not infrequently found that wooden shelves are put up a few feet above the floor as a loft for the accommodation of more persons. It is hardly possible for the occupants of such lofts to set their bodies upright.

These houses are arranged in rows separated by narrow lanes. These lanes are lighted by electric lights or in certain cases by oil lamps. Systems of sewers are equipped to convey off water and filth. Walls are built of bricks and roofs of tiles. Most of the houses have wooden floors, and a few of them cement floors. The average houses are from 400 to 600 square feet in area and from 4,000 to 6,000 cubic feet in volume. The room above the kitchen occupies a space of around one hundred square feet. Tap water for the use of individual houses is very rarely equipped, and one tap is usually to be shared by a whole row of houses. In certain quarters where even such facilities are not provided, water supply for the people comes from the wells. The rentals charged for this type of houses vary according to the area and structure from six to over twenty dollars per month. Houses with courtyard are usually charged a higher rental owing to the larger space occupied. Expenses for light are not included in the rentals. House rates are to be borne equally by the landlords and the tenants. It is beyond the financial ability of the average working family to rent a house for its exclusive use. Not infrequently four or five families are forced to squeeze in a single house, and the space occupied by each of them usually amounts to less than one hundred square feet.

(b) Houses of inferior structure—Houses of this type are mostly time-worn bungalows. Though of similar structure as the two-storied houses of the first type, brick walls and tiled roofs, they are decidedly inferior in construction. Very little window space is provided in each house. The roofs are often leaky and the walls can hardly stand upright. Most of the houses have mud floors instead of wooden ones. One room is often divided into two small ones separated from each other by wooden partitions. The rooms are sometimes further divided crosswise by lofts several feet from the ground. Each of the rooms is to accommodate one family or sometimes two families. The houses are generally arranged in U-shape with a courtyard in the middle.

Electric lights and tap water are very rarely found in such quarters. The immediate environment surrounding the houses tends but to add to the undesirability of such dwellings. There lie about piles of refuse, which contribute both to the insanitation and unpleasantness of the surroundings. This type of houses is very common in Pootung. Its attractiveness lies in the cheapness of rentals. The average rent for a house varies from two to four dollars a month.

(c) Straw huts—Out in the suburbs of Shanghai or along the western bank of the Soochow Creek, there assembles in clusters here and there or in endless rows, a great number of huts built of straw and mattings or of small old boats propped up on stilts or lying beside the Creek, the hulks of such make many a home. This type of dwellings forms the living quarters of the very poor, a genuine picture of wretchedness. Most of the dwellers are people from the north of the Yangtze River, a country of scanty produce. During the recent decades, these people have drifted, in greater number than ever, to this city too seek opportunities for a living. They are absolutely destitute of means and they cannot afford to rent even the worst dwelling places available in this city. So they rent or perhaps just squat on a tiny piece of land in certain solitary districts to erect huts as their homes. Usually the owners of such land do not care much for the amount of rentals, as they gain by the fact that the real estate they own would become more attractive and grow in value by being inhabited. These huts are extremely simple in structure. It takes about two or three days to complete a hut which costs variously from ten to twenty dollars, even such amount being raised largely from borrowings. These huts are usually built of mud floors, bamboo or mud walls with no window, and roofs covered with straw. Even in day time, the interior of the hut is in pitch darkness when the door is closed. Each hut occupies in average a space of about ten by twenty feet, which is sometimes separated by mattings or old boards into smaller rooms to be used as kitchen and bedrooms. Yard drainage is usually lacking and houses and yards both become literally puddles in the rainy season. For such defective dwellings, indeed, the society pays heavily in the form of plagues and conflagrations, high infant mortality rates, antagonistic feeling of the wretched people toward the more well-to-do class, and various other unhappy consequences, which affect not only those who suffer directly from the unwholesome living conditions but the community as a whole.

Dormitories and Apartments.

The above classification is made with reference to the type of construction which distinguishes one kind of houses from another. There are two other types of workers' residences which are also common in this city and which differ from the aforesaid not so much in the structure of the buildings but in the relationship between landlords and dwellers—one is a form of dormitories provided by factory owners and the other cheap apartments for single workers. Dormitories are usually provided for in large-scale establishments, especially cotton mills, for the accommodation of workers under their employ. Such dormitories are numerous in the factory zones of the western district and Yangtze-poo. They consist usually of two-storied houses, or in some cases, of one-story bungalows. A relatively lower rate of rentals are charged for such houses amounting to from four to six dollars for each two-storied house and from two to four dollars for each bungalow, not including rates or duties. Tap water is equipped in every lane to be shared by all the tenants gratis. Electric lights are not commonly used due to the expense involved. Low as the rents for such dormitories are, the same story is true that three or four families are often found crowding in one house. The tenants of such houses are often able to make some money by subletting spare rooms, no specific rules being set up by the factory owners to regulate the over-crowding of the houses. Apartments are often established by private proprietors who rent a house or set apart a portion of their dwelling places for this

purpose. Such apartments are intended solely to meet the demand of those workers who maintain a single life. For each bed, the amount charged varies from thirty to seventy cents per month. In these two types of houses, therefore, each is to accommodate from about ten to as many as over twenty persons, and they are no exceptions to the over-crowded and insanitary conditions of living that the working people in this city are destined.

A Census of Workers' Homes. The next question that naturally arises in a discussion of housing problems is what is the total number of workers' residences in Shanghai and the average number of dwellers in each. In spring 1930, a census of workers' homes was attempted and agents were sent to investigate into the number of houses occupied by the working families, covering every district and every road that forms a centre of workers' living quarters with the exception of Lung Hwa, Kiang Wan and Woosung, and to inquire into the average number of dwellers in each by picking up a number of sampling houses at random. The result is shown in Table XXV.

TABLE XXV. NUMBER OF WORKERS' RESIDENCES AND AVERAGE NUMBER OF PERSONS PER HOUSE IN DIFFERENT DISTRICTS IN SHANGHAI, May, 1930

Type of houses	No. of workers' residences						Average number of persons per house			
	Eastern District	Southern District	Western District	Northern District	Pootung	Total	Males	Females	Children	Total
Two storied houses with courtyard	4,355	515	627	4,554	261	10,312	6.08	4.98	4.02	15.08
Two storied houses with no courtyard	7,705	888	3,857	4,594	936	17,980	4.92	4.60	3.43	12.95
One story houses	8,089	3,275	5,094	3,705	7,563	27,726	3.58	2.90	2.32	8.80
Straw huts	3,210	1,378	3,619	8,287	3,706	20,200	2.37	2.07	1.73	6.17

It must be admitted that a census of workers' homes is not easily accomplished. It is not possible to ascertain accurately which of an entire terrace of houses are occupied by working families and which by non-working families, unless every door is knocked and the occupation of every dweller is inquired, which under the circumstances is hardly practicable. Moreover, the distinction between the so-called workers' zone and non-workers' zone is by no means exclusive; working families are not infrequently found settling down in territories which are quite apart from the vicinity of factory areas, and non-working families are also to be found in centres of workers' homes. These two groups of families, however, would tend in the long run to offset each other. The census conducted by the Bureau, therefore, though confined to the worker's zones and some territories in which working families constitute the major portion of residents, should be well considered a fairly accurate representation of facts. It should be noted of course that the figures here presented are the result of an inquiry conducted before the Undeclared War of Shanghai which broke out on January 28, 1932. Consequent upon the war, a great number of houses occupied by working families, which are especially numerous in Chapei, were ravaged to ground, and most of the workers were driven homeless. The war has deprived a number of workers of their insanitary and over-crowded living places they used to keep for their homes, and the problem of housing should demand even more serious attention now than ever.

In finding out the average number of dwellers in each house, the method of random sampling is employed. The samples covered in the inquiry amount approximately to one out of every twenty houses, and a fairly good standard of representativeness is believed to have attained. According to the result of the inquiry, it is found that in each two-storied house with courtyard,

the average number of dwellers is 15; in two-storied house without courtyard, 13; in one-story house, less than 9; and in straw hut, little more than 6.

Housing Condition of Families Covered by the Inquiry: (A) Size of Houses and Number of Family Members.

In our discussion of the size of families, a common consumption unit is adopted to secure comparability among householders of different ages and sexes. Here, in the discussion of the size of houses, a common unit of space is also required to render comparable rooms of different sizes. The unit adopted is a standard *chien* or room. As a result of physiological experiments, the minimum space necessary for human living is determinable. It is calculated that a man inhales from 16 to 18 cubic feet of air in an hour, and at the same time he exhales from 0.5 to 0.7 cubic feet of carbonic acid gas. Air which contains more than six ten-thousandths of carbonic acid gas is injurious to health. Based upon these figures, the minimum space which is physiologically necessary for one man has been estimated at 600 cubic feet for an ordinary living room, 1,000 cubic feet for dormitories or other buildings for group life, and 1,300 cubic feet for hospitals or other buildings where fresh air is especially needed.[1] Judging from the over-crowded living condition among the working class in this city, where one room has usually to accommodate several persons, 1,000 cubic feet should be considered the minimum space that is physiologically needed for each male adult.

Then, what is the actual size of the rooms occupied by working families, and how much air space does each of the rooms contain in average? Owing to the high land value and high rental charges that prevail in this city, a two-storied house has usually to be partitioned into five or six rooms. There are the sitting room on the ground floor and the living room upstairs, which occupy a relatively larger space of over 10 feet each in the three dimensions. There are the back rooms both on the ground and first floor, which are comparatively smaller in area. There is the little room above the kitchen which is the smallest in size and is only about 6 or 7 feet in height. Taking the average size of these three types of rooms, therefore, the space occupied by each room is approximately 1,200 cubic feet.

Based upon the above facts, a common unit for the measurement of the size of houses is fixed in the form of a standard *chien*, or a room with a space of 32 cubic *kung ch'ih* or cubic metre, which is equivalent approximately to 1,200 cubic feet. A standard *chien* is, thus, roughly a room 3½ *kung ch'ih* in length and width and 3 *kung ch'ih* in height. The size of houses, therefore, shall be referred to in our further discussion not only in terms of the actual number of rooms but of the number of equivalent standard *chien* contained in each.

According to Table XXVI, it is shown that among the 305 working families under investigation those occupying one room amount to 145 families or 47.6 per cent of the total; two rooms, 130 families or 42.6 per cent; three rooms and over, 30 families or 9.8 per cent. The number of rooms occupied by an average family is computed at 1.65. As the average size of a family has been fixed at 4.62 persons or 3.28 equivalent adults, it follows that each room is to accommodate 2.8 persons or 2.0 equivalent adults.

When the number of rooms occupied by each family is converted to terms of standard *chien*, families occupying less than one standard *chien* amount to 93 or 30.5 per cent of the total; from 1 to 1.99 *chien*, 157 or 51.5 per cent; from 2 to 2.99 *chien*, 47 or 15.4 per cent, 3 *chien* or above, only 8 families or 2.6 per cent. Each family occupies in average 1.41 standard *chien*, and each *chien* is to accommodate 3.2 persons.

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[1] Kokichi Morimoto, The Standard of Living in Japan, Johns Hopkins University Studies in Historical and Political Science, 1918, pp. 122-123.

TABLE XXVI. NUMBER OF ROOMS OCCUPIED BY FAMILIES OF DIFFERENT INCOME GROUPS

Income group	Number of families	Families occupying (in rooms)					Average number of rooms per family
		1	2	3	4	5	
$200 — $299.99	62	47	14	1			1.26
300 — 399.99	95	49	42	4			1.53
400 — 499.99	80	32	41	6	1		1.70
500 — 599.99	31	12	15	2	2		1.81
600 — 699.99	25	4	12	7	2		2.28
700 and above	12	1	6	3	1	1	2.58
Total or average	305	145	130	23	6	1	1.65
Percentage	100.0	47.6	42.6	7.5	2.0	.3	

Close correlation is shown between the number of rooms or standard *chien* occupied by the families and the amount of income they receive. Families with a yearly income of $200 to $299.99 occupy in average 1.26 rooms or 1.02 equivalent standard *chien* each; from $300 to $399.99, 1.53 rooms or 1.26 standard *chien;* and over $700, 2.58 rooms or 2.61 standard *chien.*

TABLE XXVII. NUMBER OF STANDARD "CHIEN" OCCUPIED BY FAMILIES OF DIFFERENT INCOME GROUPS

Income group	Number of families	Average number of rooms per family	Families occupying (in standard *chien*)					Average number of standard *chien* per family
			—0.99	1—1.99	2—2.99	3—3.99	4—4.99	
$200 — $299.99	62	1.26	29	30	3			1.02
300 — 399.99	95	1.53	34	48	11	2		1.26
400 — 499.99	80	1.70	23	46	11			1.40
500 — 599.99	31	1.81	4	15	10	1	1	1.84
600 — 699.99	25	2.28	3	13	7	1	1	1.88
700 and above	12	2.58		5	5	1	1	2.61
Total or average	305	1.65	93	157	47	5	3	1.41
Percentage	100.0		30.5	51.5	15.4	1.6	1.0	

When the families are classified according to the average number of equivalent adults that each standard *chien* accommodates, the following result is obtained. Families with less than one equivalent adult dwelling in each standard *chien* are 6 in number which constitute 2.0 per cent of the total; those with 1 to 1.99 adults to each standard *chien,* 92 in number constituting 30.2 per cent; with 2 to 2.99 adults, 98 in number constituting 32.1 per cent; with 3 to 3.99 adults, 53 in number constituting 17.4 per cent; and with over 4 adults, 56 in number constituting 18.3 per cent. On an average of all the families, each standard *chien* is to accommodate 2.33 equivalent adults. In a few of the families, as many as 9 adults are found packed up in the little space of 32 cubic feet. Under such extraordinary state of overcrowding, it is hardly possible for the dwellers to enjoy in their sweet little homes the least bit of privacy and comfort. As has been proved above, the average size of families is greater in those with a higher level of income. A contrary tendency is, however, shown that the number of adults living in a standard *chien* is fewer in families of higher incomes. For instance, in families with a yearly income of $200 to $299.99, each standard *chien* is occupied by an average of 2.75 equivalent adults; in those with $300 to $399.99, 2.33 adults; and in those with $700 or above, the number of occupants in a

standard *chien* is only 1.55 adults. The extent of overcrowding, therefore, varies inversely with the amount of income received by the families.

TABLE XXVIII. NUMBER OF EQUIVALENT MALE ADULTS LIVING IN A STANDARD "CHIEN" IN FAMILIES OF DIFFERENT INCOME GROUPS*

Income group	Number of families	Families in which each standard *chien* accommodates (in equivalent adults)										Average of equivalent adults in each standard *chien*
		— 0.99	1— 1.99	2— 2.99	3— 3.99	4— 4.99	5— 5.99	6— 6.99	7— 7.99	8— 8.99	9—	
$200 —$299.99	62		12	20	10	7	8	3	1	1		2.75
300 — 399.99	95	3	27	27	22	6	3	4	2	1		2.33
400 — 499.99	80		25	29	11	7	1	1	2	2	2	2.50
500 — 599.99	31	2	12	9	5	2					1	2.04
600 — 699.99	25		11	7	5	2						2.18
700 and above	12	1	5	6								1.55
Total or average	305	6	92	98	53	24	12	8	5	4	3	2.33
Percentage	100.0	2.0	30.2	32.1	17.4	7.9	3.9	2.6	1.6	1.3	1.0	

* Not including boarders.

While the housing condition of working class in Shanghai is compared with that in other countries, evidently living quarters in this city are highly overcrowded. In the United States, a family of 5 persons or of from 3 to 3.5 equivalent adults usually occupies four or five rooms, the ratio being less than one adult per room.[1] In France and Belgium, two rooms are customary, in Germany three, and in England and Wales four or five.[2] In Japan, the average number of rooms in a house is 8 in large cities and 7.2 in small ones, the average sized room being 92 square feet in the former case and 112 in the latter.[3]

While compared with the working class houses in Peiping, even the deplorable condition in this city would seem very much better off. According to the investigation conducted by the Social Research Department, Peiping, a working family of four or five persons usually occupies only one room of hardly 20 cubic *kung ch'ih*. What makes the condition worse is that in most of the families brick beds are kept, which are built on the floor with stoves underneath and which usually occupy half the area of a room. So, still less space is left in the house for the dwellers to move about, and women and children of the families often have to do their house-keeping and to play around on their beds. It was figured out that each working family in Peiping occupied in average 1.04 rooms and each room was to accommodate 4.16 persons or 3.04 equivalent adults.[4] To those families, therefore, the overcrowded living quarters in this city would appear admirably comfortable.

(B) Sanitary Conditions. Fresh air and sunlight are the two elements that are indispensable in sanitary living conditions. The amount of air and light that is accessible to the rooms cannot be measured in tangible terms, but it can be shown from the window area provided in them. Among the 305 families, 66 or 21.6 per cent of the total live in houses with no window at all; 144 or 47.2 per cent with one window, averaging 0.1289 square *kung ch'ih* of window area each family; 72 or 23.6 per cent with two windows, averaging 0.224 square *kung ch'ih* each family; 10 or 3.3 per cent with three windows, averaging 0.3288 square *kung ch'ih* each

1 Cost of Living in the United States, published by the U. S. Bureau of Labor Statistics, 1924.

2 Shirras, G.F, op. cit., ϕ. 24.

3 Kokichi Morimoto, op. cit., pp. 116-117.

4 Tao, L. K., op. cit., pp. 106-107.

family; and 4 or 1.3 per cent with five windows and above, averaging 0.9963 square *kung ch'ih* each family. On an average of all the families, each family is provided with 1.24 windows, which occupy an area of 0.1555 square *kung ch'ih* or roughly 16 inches in length and width. Taking 1.65 as the average number of rooms occupied by each family, each room is provided with only three-fourths of a window and leaves a space of less than 0.1 square *kung ch'ih*, through which air and light can be penetrated. Such rooms are bound to be dark and not well ventilated. When the families are further classified according to the type of houses they occupy, those living in two-storied houses have in average 1.4 windows of an area of 0.2 square *kung ch'ih;* those in one-story house, 1.1 windows of 0.09 square *kung ch'ih;* and those in straw huts have practically no window at all. Of the 17 families which are representative of dwellers in the last named type of houses, 14 live in huts with no window, and 3 with only one window each. Those huts are, therefore, literally hells, to which fresh air and sunlight are almost eternally denied.

TABLE XXIX. WINDOW AREAS OF THE FAMILIES

Number of windows	Two story house		One story house		Straw huts		Total	
	Nmber of families	Average window area (in sq. *kung ch'ih*)	Number of families	Average window area (in sq. *kung ch'ih*)	Number of families	Average window area (in sq. *kung ch'ih*)	Number of families	Average window area (in sq. *kung ch'ih*)
0	26		26		14		66	
1	98	.1557	43	.0738	3	.0409	144	.1289
2	44	.2637	28	.1616			72	.2240
3	6	.3678	4	.2703			10	.3288
4	7	.6681	2	.4062			9	.6099
5 and above	4	.9963					4	.9963
Total or average	185	.2038	103	.0931	17	.0072	305	.1555

Dampness of floor is another element that has important bearings upon the sanitation of housing. Among the 305 families, wooden floor is used in 190 families of 62.3 per cent of the total, cement floor in 41 or 13.4 per cent, and mud floor in 74 or 24.3 per cent. Of the three types of floors, wooden floor is the least accessible to moisture and dampness, and is mostly equipped in two-storied houses. Cement floor is comparatively less desirable, and is often found in the rooms upstairs of the kitchen in the two-storied houses. Mud floor is wet and unwholesome, however, a majority of the old type one-story houses and all the straw huts have nothing but mud ground for their floors.

TABLE XXX. FLOORS OF THE FAMILIES

Type of houses	Wooden board	Cement	Mud	No. of families
2 storied houses	162	23		185
1 story houses	28	18	57	103
Straw huts			17	17
No. of families	190	41	74	305
Percentage	62.3	13.4	24.3	100.0

The sources of water supply for the families investigated should deserve a brief discussion. Water for cooking and drinking purposes are mostly bought from hot water shops at about one-sixth of a cent each ladle. Water for washing and cleaning purposes comes generally from three sources, tap-water, wells, and near-by creeks. Among the families, tap-water is used in 207 which is 67.9 per cent of the total, water from wells in 43 or 14.1 per cent, and water from creeks in 55 or 18.0 per cent.

TABLE XXXI. WATER SUPPLY OF THE FAMILIES

Type of houses	Tap water	Wells	Creeks	No. of families
2 storied houses	157	24	4	185
1 story houses	50	18	35	103
Straw huts		1	16	17
No. of families	207	43	55	305
Percentage	67.9	14.1	18.0	100.0

In Table XXXI, it is shown that tap water is mostly used by occupants of two-storied houses and is entirely inaccessible to hut dwellers. Even in the former type of houses the occupants are not privileged with the exclusive use of a private tap. In most cases, each tap is to be shared by an entire lane or terrace of dwellers. Water fees are included in the rent of the houses and are to be borne by the landlords. Among the dwellers in one-story houses, only about half of them could have enjoyed the more sanitary supply of tap water, and to the rest water from wells and creeks are their chief sources of supply.

Lastly, the equipment of lavatory and kitchen in a house must also be touched upon. Public lavatories are not widely provided for in this city. In the families of workers and even in most of the middle-class families, place of convenience has to share a space in the bed room, and modern sanitary equipments can only be afforded by the well-to-do class. A kitchen is usually provided in each of the two-storied houses, and is to be used by all the families that live in the same house. While in one-story houses and huts, a separate kitchen is often not kept, and the dwellers have to do their cooking in their bed rooms and elsewhere. Of all the families included in the budget inquiry, 178 or 58.4 per cent have kitchens in their houses, and 127 or 41.6 per cent have to cook their meals wherever they find convenient.

TABLE XXXII. KITCHENS OF THE FAMILIES

Type of houses	With kitchen	With no kitchen	No. of families
2 storied houses	157	28	185
1 story houses	20	83	103
Straw huts	1	16	17
No. of families	178	127	305
Percentage	58.4	41.6	100.0

Rent. Such over-crowded and unwholesome conditions the working class families are living under, yet they pay dearly for all that. It has been figured out that each family is burdened in average with a rent of $37.83 per year or $3.15 per month. Classifying the families according to the amount of rent they pay each year, 28 families or 9.2 per cent of the total belong to the rental group of below $20, 71 or 23.3 per cent from $20 to $29.99, 103 or 33.8 per cent from $30 to $39.99, 49 or 16.1 per cent from $40 to $49.99, 15 or 4.9 per cent from $50 to $59.99, 39 or 12.7 per cent from $60 to $110. Again, the amount of rent paid by the families increases as their income becomes greater. Families of the income group of from $200 to $299.99, pay in average $28.16 per year; those of from $300 to $399.99, $34.23; those of from $400 to $499.99, $36.59; and those of $700 and over, $59.43, which is more than two times the amount borne by families of the lowest income group.

In Table XXXIV, the amount of rental charges paid by families of different income groups is converted to the basis of the share assigned to each room or each standard *chien* and of the sum borne by each individual or each equivalent adult. The average rent for each room is calculated

TABLE XXXIII. AMOUNT OF RENT PAID BY FAMILIES OF DIFFERENT INCOME GROUPS

Income groups	Number of families	Families paying rentals from — $20	20— 29.99	30— 39.99	40— 49.99	50— 59.99	60— 69.99	70— 79.99	80— 89.99	90— 99.99	100— 110	Average rent per family
$200 —$299.99	62	12	22	23	5							$28.16
300 — 399.99	95	9	24	37	16	6	1	2				34.23
400 — 499.99	80	7	19	26	18	1	7	2				36.59
500 — 599.99	31		3	10	5	2	5	3	2	1		49.29
600 — 699.99	25		3	4	4	4	5	2	1		2	54.83
700 and above	12			3	1	2	2	2	1		1	59.43
Total or average	305	28	71	103	49	15	20	11	4	1	3	$37.83
		PERCENTAGE										
$200 —$299.99	100.0	19.3	35.5	37.1	8.1							
300 — 399.99	100.0	9.5	25.3	39.0	16.8	1.0	2.1	6.3				
400 — 499.99	100.0	8.7	23.7	32.5	22.5	1.3	8.8	2.5				
500 — 599.99	100.0		9.7	32.2	16.1	6.5	16.1	9.7	6.5	3.2		
600 — 699.99	100.0		12.0	16.0	16.0	16.0	20.0	8.0	4.0		8.0	
700 and above	100.0			25.0	8.3	16.7	16.7	16.7	8.3		8.3	
Total or average	100.0	9.2	23.3	33.8	16.1	4.9	6.5	3.6	1.3	.3	1.0	

at $22.93 per year or $1.91 per month; and that for each standard *chien*, $26.27 per year or $2.19 per month. The amount to be borne by each individual is figured at $8.19 per year or $0.68 per month; and that by each equivalent adult, $11.06 per year or $0.92 per month. Taking the families of different rental groups separately, the amount of rent for each room or each standard *chien* shows no marked changes as the family income varies, while that for each individual or each equivalent adult tends to increase as the amount of income increases. In families of the income group of from $200 to $299.99, the average rent for each individual is $7.13 per year and that for each equivalent adult $9.88; in those of $300 to $399.99, $8.21 and $11.08 respectively; and in those of $700 and above, $10.23 and $13.41 respectively. This tends to show that in families of higher income, larger space for each of their members is possible. Higher income would, therefore, spell a better housing for the working families.

TABLE XXXIV. AVERAGE RENT PER PERSON AND PER EQUIVALENT MALE ADULT IN FAMILIES OF DIFFERENT INCOME GROUPS

Income group	Number of families	Average per family		Space occupied per family		Average rent per year				
		Persons	Adult equivalent	Rooms	Standard *chien*	Per family	Per *chien*	Per standard *chien*	Per person	Per adult equivalent
$200 —$299.99	62	3.95	2.81	1.26	1.02	$28.16	$22.35	$26.07	$7.13	$ 9.88
300 — 399.99	95	4.17	2.94	1.53	1.26	34.23	22.37	24.28	8.21	11.08
400 — 499.99	80	4.89	3.50	1.70	1.40	36.59	21.52	27.10	7.48	10.14
500 — 599.99	31	5.19	3.75	1.81	1.84	49.29	27.23	26.50	9.50	12.26
600 — 699.99	25	5.92	4.10	2.28	1.88	54.83	24.05	29.48	9.26	12.96
700 and above	12	5.75	3.85	2.58	2.61	59.43	23.03	25.24	10.23	13.41
Total or average	305	4.62	3.28	1.65	1.41	37.83	22.93	26.27	8.19	11.06

Some Suggestions to Remedy the Housing Conditions in Shanghai.

With all the transportation conveniences, industrial and commercial developments, dense population, and high land value in this city, rentals in Shanghai has grown rapidly to a very high level during the past decade. According to an investigation of the Bureau, the rate of rentals was 34.5 per cent higher in 1931

than in 1926, an increase of over one-third in five years.[1] The increase is the natural outcome of an unbalanced demand and supply. The speculation of real estate dealers and landlords, though contributing much to over-estimate the value of land, should, however, not be considered the sole factor that explains the unduly high rentals in this city. A mere attempt to regulate the rate of rentals is, therefore, by no means a sure remedy to the problem of housing in this city, but instead would perhaps lead to undesirable effects. In Russia consequent upon the effect of the World War, construction activities were for a time in a stagnant state. The lack of new buildings to meet growing demands had put the rentals at a very high level. On August 25, 1915, a proclamation was issued by the former Moscow Headquarters of Police to the effect that owners of buildings were prohibited to increase rents without permission from the authorities. The landlords, however, sought to make up their losses by cutting down the necessary expenses for the up-keep of the buildings, such as the negligence to remove filth and snow from the yards in front of the buildings, the reduction of fuel supply to the tenants—in Russia especially in the northern part, fuels were as a rule supplied by the landlords—or the dismissal of a part of their staff who took charge of the management and repairs of the buildings. Consequently, though an increase of rentals was restricted, the housing conditions were from bad to worse.[2] Later on, in the period from 1917 to 1921, under the Soviet Government, municipal ownership of urban land and houses and municipal control of the right of construction were enforced, and the system of compulsory removal and that of special privileges for the working class were put into practice. These systems when first experimented proved to be unsatisfactory. Instead of striving for a better living condition for the urban population, various difficulties arose and undesirable outcomes ensued. As a result of compulsory removal, the tenants began to be careless about the houses they rented. As construction activities were to be handled by the municipal government, private enterprises of building works practically ceased and the government was at that time financially incapable to devote to the construction of houses due to its reduced revenues from taxes and duties. In consequence, the attempt of the Soveit Government to attain a higher standard of housing was again in vain.[3] So much for what had been done in Russia toward a solution of the problem of housing conditions, the need is perhaps even more urgent in this city that a remedy must be sought to the deplorable condition of living and the high level of rental among the working class.

(I) Immediate Measures. If an immediate solution toward the regulation of rentals were to be effected, the following suggestions may be adopted. In the first place, a committee for the adjustment of rental charges shall be formed by representatives from the municipal government, those from citizen bodies, and also specialists along that field. Its functions shall be, first to decree whether the rate of rentals charged is fair or not, basing its judgment on the value of land, the cost of construction, the market rate of interest, and other factors; and second to arbitrate in disputes between landlords and tenants arising out of the problem of rentals. In the second place, measures shall be taken to check the unduly high rate of rentals charged by the so-called secondary landlords who are in fact tenants themselves but sublet some of the spare rooms to others. Most of the working people and the low-salaried class in this city are unable to rent a house for themselves and are usually victims to the harsh rentals exacted by the secondary landlords. The practice to sublet spare rooms, therefore, has been a

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1 Bureau of Social Affairs: The Cost of Living Index Numbers of Laborers, Greater Shanghai, January 1926 to December 1931, Chung Hwa Book Company, 1932.

2 蘇俄住宅問題概觀, 勞工問題叢書, 上海調查貨價處編, 民國十六年, 第 617 頁.

3 Ibid., p. 2.

profitable occupation, and some even went so far as to live entirely on the profit derived therefrom. This class of unscrupulous tenants should be strictly checked so that a majority of the population in this city would be able to obtain direct approach to the landlords, and thereby exempted from the unnecessary exactions.

(II) Fundamental Remedies. According to the census made by the Shanghai Municipal Council, the total number of residents both in the International Settlement and the French Concession amounted to 846,226 persons in 1925 and to 1,007,868 in 1929. In five years, the population had increased by one-fifth, but the increase in the supply of tenant houses lagged far behind. A rapid rise of rentals, therefore, was only to be expected. For a fundamental remedy of the housing problem, the unbalanced supply and demand of houses must be adjusted. To attain this end, the following measures are proposed:

(a) Tax on Idle Land. Real estate dealers in this city usually speculate on land. They buy land not necessarily for the purpose of erecting buildings on it but of holding it for appreciation in value. Many a piece of building site is, therefore, laying idle. With the growth of population and the shortage of residences, rentals have been forced up considerably, and a rapid increase in land value ensued. It is at the sacrifice of a great portion of the residents in this city who bear the entire burden of rising rentals that the speculative land dealers reap their gains. If equilibrium were to be maintained between the supply of and the demand for tenant houses, such speculative dealings in real estates should be checked. Building sites laying idle should be taxed upon at a yearly progressive rate, thus making the holding of idle land a non-profitable transaction. Investments in building construction shall take the place of speculation in land increments. An increase in the volume of new buildings shall afford an effective means to check upon the rise of rentals.

(b) Encouragement of Construction Works. With the restriction of speculative transactions in land properties, construction enterprises should at the same time be encouraged. Investments in land with the motive of erecting buildings shall be exempted from land taxes, and new buildings shall be free from duties for a certain period following their completion. Technical advices and transportation conveniences shall be afforded to those engaged in construction works. Thus, investors are attracted to the field of building enterprises, and a solution of the problem of rentals might be worked out.

(c) Establishment of Housing Coöperatives The most direct approach toward a solution of the housing problem lies in the establishment of housing coöperatives. Coöperatives of this nature are of two types: (1) to rent on coöperative basis a number of houses from the landlords and sublet them among their members, thus avoiding the unduly exactions of the secondary landlords; (2) to buy or rent a piece of land and erect houses to let at fair rentals to the members. These two types of coöperatives though slightly different in nature aim at a common goal, namely, cheaper and better houses for the working class.

VII. CLOTHING, FUEL, LIGHT, AND MISCELLANEOUS EXPENSES

Clothing.

The average expenditure on clothing for each of the working families covered in the budget inquiry amounts to $34.01 per year, and for each equivalent adult $10.37. Of this amount, 54.00 per cent are expenses for piece goods, 11.40 per cent for ready-made clothes, 2.02 per cent for beddings, and 32.58 per cent for hats, socks, shoes and other wearing apparels. What constitutes the total clothing expenditure of an average workman in a year's time is hardly sufficient for a decent pair of boots. The materials that are most popular with the working class are largely cheap cotton piece goods. Ready-made clothes are sometimes preferred in order to save tailoring expenses. Silk or woollen goods are rare luxuries to them. Hardly in one-third of the families had such items appeared in their account books. The average expenditures on various clothing items are shown in Table XXXV.

(1) Piece Goods.

In the accompanying table, the various items of clothing are classified into four groups, namely, piece goods, ready-made clothes, beddings, and others. Among piece goods, items of the heaviest expenses are sheetings, shirtings, striped cotton shirtings, drills and jeans, printed T-cloth, white irishes, imitation twills and venetians, cotton flannel, artificial silk and cotton piece goods, and a few other varieties. Of these items, the total quantity purchased by an average family in a year consists of 5.86 *ch'ih* of sheetings at $0.11 per *ch'ih*, 18.42 of shiritings at $0.13, 19.42 of striped cotton shirtings at $0.12, 3.04 of drills and jeans at $0.14, 8.59 of printed T-cloth at $0.13, 4.83 of white irishes at $0.16, 10.30 of imitation twills and venetians at $0.24, 4.77 of cotton flannel at $0.16, and 2.56 of artificial silk piece goods at $0.50. Among these varieties, artificial silk goods are the most expensive articles that the average working families could afford to have and are often used as materials for their suits worn on occassions. Materials for their daily wear are mostly cotton cloths less than twenty cents per *ch'ih*. Silk or woollen piece goods which cost about one dollar per *ch'ih* are accessible only to very few of the families. When the total quantity of such articles is averaged for all the families, the share attributable to each amounts hardly to three or four inches. To the average worker, therefore, smart and luxurious clothings are not ordinarily obtainable. What they can best afford is just enough to keep themselves warm and to make themselves presentable.

(2) Ready-made Clothes

The ready-made clothes purchased by the families consist mostly of shirts, trousers, heavy and light underwears, and baby suits. Of these items, the average quantity purchased by each family in a year amounts to 0.275 of a shirt, 0.279 of a pair of trousers, 0.184 of a suit of heavy underwear and 0.266 of a light one, and 0.111 of a baby suit. In seven of the families, furs and fur gowns were purchased, and in six, woollen overcoats appeared in their budgets. These few families must be among the blessed ones of all that are covered in the inquiry.

(3) Beddings

Among beddings, the most commonly purchased are mats, bed sheets, and cotton waddings for bed quilts. Of the 305 families, mats appear in the account books of 53, bed sheets in 17, cotton waddings in 10. Other articles as pillows, nets, and cotton blankets appear in the budget of less than 10 families. The average expenditure for beddings in each family amounts only $0.69 in the whole year.

(4) Others

Among other clothing expenses, the greatest portion is spent for hats, shoes, socks and stockings, towels, and raw cotton. Of the varieties of hats, caps are most commonly purchased, and felt hats and children's caps next; of shoes, those for man constitute the largest portion, and leather boots and rubbers next; and of socks and stockings, the former appear more frequently than the latter. In about 5 per cent of the families or in 15

TABLE XXXV. AVERAGE QUANTITY OF AND EXPENDITURE ON CLOTHING ARTICLES

PER FAMILY AND PER EQUIVALENT ADULT

Clothing articles	Unit	305 Families				Families purchasing			
		Average quantity		Average expenditure		Number of families	Percentage to total number of families	Average per family	
		Per family	Per equivalent adult	Per family	Per equivalent adult			Quantity	Expenditure
Total clothing expenditure				**$34.010**	**$10.369**	**305**	**100.00**		**$34.010**
Piece goods				**18.356**	**5.599**				
White sheetings	*ch'ih*	2.885	.880	.292	.089	46	15.08	19.131	1.932
Blue sheetings	*ch'ih*	2.977	.908	.367	.112	67	21.97	13.553	1.665
White shirtings	*ch'ih*	1.261	.384	.179	.055	25	8.20	15.385	2.169
Blue shirtings	*ch'ih*	1.859	.567	.279	.085	26	8.52	21.812	3.258
Fine shirtings	*ch'ih*	15.295	4.663	2.084	.635	190	62.30	24.553	3.346
Striped cotton shirtings	*ch'ih*	7.012	2.138	.915	.279	115	37.71	18.598	2.424
Chinese cotton cloth	*ch'ih*	9.557	2.914	1.008	.307	116	38.03	25.129	2.647
Imitation cotton twills	*ch'ih*	2.849	.869	.370	.113	61	20.00	14.243	1.852
Drills and jeans	*ch'ih*	3.038	.926	.439	.134	70	22.95	13.238	1.909
Printed T-cloth	*ch'ih*	8.586	2.618	1.148	.350	137	44.92	19.115	2.554
White irishes	*ch'ih*	3.267	.996	.518	.158	72	23.61	13.841	2.185
Blue irishes	*ch'ih*	1.565	.477	.261	.080	36	11.80	13.262	2.196
Cotton plain prints	*ch'ih*	.895	.273	.117	.036	16	5.25	17.069	2.219
Indigo cloth	*ch'ih*	.210	.064	.037	.011	5	1.64	12.798	2.216
Cotton cloth not otherwise recorded	*ch'ih*	1.463	.446	.184	.056	44	14.43	10.141	1.270
Liberty cloth	*ch'ih*	.603	.184	.115	.035	18	5.90	10.222	1.941
Nga-kuo cloth	*ch'ih*	.066	.020	.011	.003	2	.66	10.000	1.660
Native cotton cloth	*ch'ih*	3.465	1.056	.280	.085	53	17.38	19.939	1.611
Grass cloth	*ch'ih*	.364	.111	.080	.024	6	1.97	18.500	4.092
Herringbone twills	*ch'ih*	.152	.046	.028	.009	11	3.61	4.227	.779
Pongees	*ch'ih*	1.288	.393	.464	.141	37	12.13	10.616	3.823
Limbrics	*ch'ih*	.189	.058	.038	.012	7	2.30	8.228	1.677
Beatrice twills	*ch'ih*	.154	.047	.038	.012	4	1.31	11.750	2.900
Cotton cloth in pieces	*ch'ih*			.028	.009	40	13.11		.210
Cotton flannel	*ch'ih*	4.772	1.455	.774	.236	108	35.41	13.477	2.186
Camel wool	*ch'ih*	.349	.106	.230	.070	11	3.61	9.682	6.383
Watered gauze	*ch'ih*	.666	.203	.837	.255	23	7.54	8.835	11.105
Cambrics	*ch'ih*	.831	.253	.215	.066	22	7.21	11.525	2.979
Lawn	*ch'ih*	3.703	1.129	.519	.158	81	26.56	13.944	1.955
Camlets	*ch'ih*	.274	.084	.104	.032	11	3.61	7.591	2.871
Silk piece goods	*ch'ih*	.097	.030	.074	.023	7	2.30	4.213	3.237
Artificial silk piece goods	*ch'ih*	.838	.255	.356	.109	24	7.87	10.646	4.522
Artificial silk and wool piece goods	*ch'ih*	.067	.020	.077	.023	3	.98	6.833	7.833
Artificial silk and cotton piece goods	*ch'ih*	1.862	.568	.905	.276	51	16.72	11.135	5.412
T'i (a kind of artificial and cotton piece goods)	*ch'ih*	.698	.213	.385	.117	19	6.23	11.203	6.177
Hsien ch'un (a kind of silk piece goods	*ch'ih*	.487	.148	.431	.131	11	3.61	13.500	11.939
Silk crapes	*ch'ih*	.118	.036	.112	.034	3	.98	12.000	11.400
Silks	*ch'ih*	.433	.132	.255	.078	12	3.93	11.017	6.493
Cotton twills	*ch'ih*	3.776	1.151	.843	.257	83	27.21	13.875	3.100
Imitation serges	*ch'ih*	2.048	.624	.489	.149	50	16.39	12.492	2.982
Imitation venetians	*ch'ih*	4.478	1.365	1.119	.341	117	38.36	11.673	2.918
Serges	*ch'ih*	.517	.158	.452	.138	17	5.57	9.268	8.109
Satinet	*ch'ih*	.702	.214	.205	.063	40	13.11	5.351	1.565
Satin	*ch'ih*	.308	.094	.338	.103	10	3.28	9.400	10.309
Cotton cloth for upper part of trousers	piece	.141	.043	.013	.004	27	8.85	1.593	.145
Piece goods not otherwise recorded	*ch'ih*	1.516	.462	.353	.108	41	13.44	11.280	2.624

TABLE XXXV. AVERAGE QUANTITY OF AND EXPENDITURE ON CLOTHING ARTICLES PER FAMILY AND PER EQUIVALENT ADULT—*Continued*

Clothing articles	Unit	305 Families				Families purchasing			
		Average quantity		Average expenditure		Number of families	Percentage to total number of families	Average per family	
		Per family	Per equivalent adult	Per family	Per equivalent adult			Quantity	Expenditure
Ready-made clothes				$3.877	$1.181				$
Furs	piece	.020	.006	.360	.110	5	1.64	1.200	22.300
Raincoats	piece	.007	.002	.023	.007	2	.66	1.000	3.669
Fur gowns	piece	.007	.002	.160	.049	2	.66	1.000	24.500
Ladies' fur coats	piece	.007	.002	.065	.020	2	.66	1.000	10.100
Shirts	piece	.275	.084	.307	.094	54	17.70	1.556	1.732
Trousers	pair	.279	.085	.320	.098	53	17.38	1.604	1.857
Gowns	piece	.043	.013	.190	.058	12	3.93	1.083	4.897
Double coats	piece	.039	.012	.100	.030	12	3.93	1.000	2.633
Double trousers	pair	.049	.015	.107	.033	14	4.59	1.071	2.325
Double gowns	piece	.030	.009	.150	.046	9	2.95	1.000	5.222
Double coats with cotton lining	piece	.030	.009	.057	.017	9	2.95	1.000	1.921
Double trousers with cotton lining	pair	.039	.012	.070	.021	9	2.95	1.333	2.430
Double gowns with cotton lining	piece	.036	.011	.137	.042	10	3.28	1.100	4.170
Woollen overcoats	piece	.020	.006	.298	.091	6	1.97	1.000	15.167
Students' costumes	suit	.023	.007	.070	.021	6	1.97	1.167	3.587
Woollen sweaters	piece	.092	.028	.280	.085	19	6.23	1.474	4.545
Cotton heavy underwears	suit	.184	.056	.220	.067	44	14.43	1.273	1.529
Singlets and drawers	piece	.266	.081	.140	.043	52	17.05	1.558	.819
Ladies' shirts	piece	.066	.020	.080	.024	17	5.57	1.176	1.457
Ladies' trousers	pair	.030	.009	.060	.018	8	2.62	1.125	2.294
Ladies' double coats	piece	.020	.006	.070	.020	5	1.64	1.200	4.394
Ladies' double trousers	pair	.013	.004	.058	.018	3	.98	1.333	5.923
Ladies' double coats with cotton lining	piece	.023	.007	.089	.027	5	1.64	1.400	5.430
Ladies' double trousers with cotton lining	pair	.010	.003	.047	.014	2	.66	1.500	7.100
Ladies' gowns	piece	.010	.003	.019	.006	3	.98	1.000	1.933
Ladies' double gowns	piece	.007	.002	.026	.008	2	.66	1.000	4.000
Ladies' double gowns with cotton lining	piece	.010	.003	.040	.012	3	.98	1.000	4.133
Ladies' wearing apparels not otherwise recorded	piece	.007	.002	.010	.003	2	.66	1.000	1.500
Children's shirts and trousers	piece	.111	.034	.077	.023	26	8.53	1.308	.899
Children's double coats and trousers	piece	.007	.002	.007	.002	1	.33	2.000	2.000
Children's double coats and trousers with cotton lining	piece	.016	.005	.018	.005	2	.66	2.500	1.082
Children's gowns	piece	.003	.001	.003	.001	1	.33	1.000	1.000
Children's suits not otherwise recorded				.215	.066	40	13.11		1.641
Beddings				.686	.209				
Cotton waddings	sheet	.036	.011	.131	.040	10	3.28	1.100	4.010
Bed quilts	sheet	.039	.012	.147	.045	8	2.62	1.500	5.586
Covers of bed quilts	sheet	.059	.018	.097	.030	17	5.57	1.059	1.736
Bed sheets	sheet	.010	.003	.019	.006	3	.98	1.000	1.900
Nets	piece	.026	.008	.102	.031	7	2.30	1.143	4.429
Pillows	piece	.052	.016	.023	.007	9	2.95	1.778	.784
Mats	sheet	.243	.074	.123	.038	53	17.38	1.396	.706
Cotton blankets	sheet	.020	.006	.044	.013	5	1.64	1.200	2.710

TABLE XXXV. AVERAGE QUANTITY OF AND EXPENDITURE ON CLOTHING ARTICLES PER FAMILY AND PER EQUIVALENT ADULT—*Concluded*

Clothing articles	Unit	305 Families				Families purchasing			
		Average quantity		Average expenditure		Number of families	Percentage to total number of families	Average per family	
		Per family	Per equivalent adult	Per family	Per equivalent adult			Quantity	Expenditure
Others				**11.082**	**3.379**				
Felt hats	piece	.098	.030	.283	.086	27	8.85	1.111	3.182
Caps	piece	.348	.106	.346	.105	79	25.90	1.342	3.182
Straw hats	piece	.174	.053	.224	.068	48	15.74	1.104	1.406
Bonnets	piece	.085	.026	.090	.027	26	8.52	1.000	1.034
Children's caps	piece	.338	.103	.224	.068	71	23.28	1.451	.962
Russian style caps	piece	.046	.014	.046	.014	10	3.28	1.400	1.342
Fur hats or caps	piece	.003	.001	.008	.002	1	.33	1.000	2.000
Men's shoes	pair	1.118	.341	1.669	.509	157	51.48	2.172	3.242
Ladies' shoes	pair	.272	.083	.336	.102	57	18.69	1.456	1.793
Children's shoes	pair	.230	.070	.131	.040	43	14.10	1.628	.919
Rubbers	pair	.466	.142	.517	.158	96	31.48	1.479	1.639
Leather shoes	pair	.167	.051	.577	.176	43	14.10	1.186	4.092
Straw shoes	pair	2.295	.700	.084	.026	24	7.87	29.167	1.049
Canvas shoes	pair	.010	.003	.012	.004	3	.98	1.000	1.100
Socks	pair	3.948	1.204	.936	.285	252	82.62	4.778	1.133
Stockings	pair	.931	.284	.229	.070	115	37.71	2.470	.607
Children's socks	pair	.823	.251	.092	.028	102	33.44	2.461	.275
Silk socks or stockings	pair	.089	.027	.083	.025	15	4.92	1.800	1.688
Woollen socks or stockings	pair	.013	.004	.003	.001	2	.66	2.000	.402
Garters	pair	.161	.049	.016	.005	40	13.12	1.225	.126
Slippers	pair	.016	.005	.023	.007	5	1.64	1.000	1.375
Wooden slippers	pair	.052	.016	.007	.002	13	4.26	1.231	.156
Uppers of shoes				1.276	.389	252	82.62		1.544
Soling				.201	.061	143	46.89		.426
Repair of shoes				.056	.017	73	23.93		.234
Cotton bowing				.025	.008	14	4.59		.551
Dyeing and cleaning				.140	.043	66	21.64		.648
Raw cotton	*chin*	1.261	.384	.637	.194	164	53.77	2.345	1.184
Cotton thread				.054	.016	139	45.57		.119
Cotton thread rolls	roll	.866	.264	.110	.034	113	37.05	2.336	.297
Woollen thread				.656	.200	92	30.16		2.173
Silk thread				.072	.022	143	46.89		.153
Towels	piece	2.338	.713	.317	.097	249	81.64	2.863	.388
Handkerchieves	piece	.151	.046	.021	.006	36	11.80	1.278	.178
Scarfs	piece	.039	.012	.072	.022	10	3.28	1.200	2.184
Gloves	pair	.092	.028	.055	.017	24	7.87	1.167	.693
Buttons				.035	.011	75	24.59		.144
Lace				.049	.015	60	19.67		.244
Tailoring				1.315	.401	143	46.89		2.804
Others				.055	.017	37	12.13		.452

families, silk stockings were purchased which cost about a dollar per pair. Most of the wearing apparels used by the working families are made by tailors, and with the exception of certain good shoes and leather shoes, shoes for daily wear are also home-made. Under "other clothing expenses", therefore, appear raw cotton, woollen threads, cloth for shoes, soling, tailoring expenses and such similar items.

An Inventory of Clothing Articles in 24 Families

The above analysis gives an idea as to how little clothings the working families could afford to have during the period of inquiry. In the course of investigation, 24 families of at least four persons, that is, families with a husband, a wife, a son and a daughter, were picked out for an inventory of the entire stock of their

TABLE XXXVI. CLOTHING ARTICLES IN POSSESSION OF 24 WORKING FAMILIES

Items	Quantity	Unit	Families purchasing	Percentage of the 24 families	Average per family	Estimated value per unit: Original	Estimated value per unit: Present	Average value per family
Clothing articles Grand total								**$116.644**
Beddings								**19.435**
Cotton blankets	6	sheet	4	16.67	.250	$ 2.750	$ 1.167	.292
Bed sheets	15	sheet	8	33.33	.625	2.047	1.187	.742
Mats	8	sheet	5	20.83	.333	.775	.438	.146
Nets	29	piece	17	70.83	1.208	5.800	3.466	4.187
Pillows	22	piece	8	33.33	.917	.850	.429	.393
Cotton quilts	96	sheet	24	100.00	4.000	5.850	3.419	13.675
Clothes								**35.822**
Cloaks	1	piece	1	4.17	.042	1.400	1.200	.050
Fur jackets	1	piece	1	4.17	.042	15.000	10.000	.417
Overcoats	2	piece	2	8.33	.083	13.000	6.000	.498
Men's fur coats	1	piece	1	4.17	.042	8.000	2.000	.083
Ladies' fur coats	9	piece	6	25.00	.375	18.722	10.833	4.062
Fur gowns	7	piece	6	25.00	.292	35.500	24.643	7.187
Woollen sweaters	21	piece	10	41.67	.875	4.924	3.548	3.104
Ladies' waist coats	2	piece	2	8.33	.083	1.750	.750	.062
Waist coats	5	piece	4	16.67	.208	1.060	.680	.141
Cotton underwears	4	piece	3	12.50	.167	2.025	1.275	.212
Ladies' gowns	28	piece	10	41.67	1.167	5.050	3.425	3.996
Singlets and drawers	12	piece	5	20.83	.500	.758	.475	.237
Jackets	2	piece	2	8.33	.083	2.000	1.200	.100
Double gowns with cotton lining	43	piece	20	83.33	1.792	7.184	4.981	8.925
Double coats with cotton lining	49	piece	21	87.50	2.042	2.541	1.388	2.833
Double trousers with cotton lining	45	pair	20	83.33	1.875	2.287	1.267	2.375
Double gowns	19	piece	10	41.67	.792	7.932	5.132	4.062
Double coats	48	piece	23	95.83	2.000	2.429	1.746	3.492
Double trousers	45	pair	20	83.33	1.875	2.313	1.638	3.071
Gowns	35	piece	16	66.67	1.458	4.186	2.724	3.972
Shirts	195	piece	24	100.00	8.127	1.209	.695	5.648
Trousers	188	pair	24	100.00	7.833	1.225	.734	5.748
Heavy underwears	9	piece	7	29.17	.375	1.622	.867	.325
Ladies' double coats with cotton lining	55	piece	22	91.67	2.292	2.785	1.403	3.215
Ladies' double trousers with cotton lining	47	pair	21	87.50	1.958	2.036	1.135	2.223
Ladies' double coats	52	piece	21	87.50	2.167	2.890	1.750	3.792
Ladies' double trousers	44	pair	18	75.00	1.833	2.139	1.300	2.383
Ladies' shirts	180	piece	22	91.67	7.500	1.503	.926	6.944
Ladies' trousers	170	pair	22	91.67	7.083	1.398	.894	6.331
Skirts	2	piece	2	8.33	.083	5.000	4.000	.333
Others								**11.387**
Gloves	4	pair	3	12.50	.167	1.075	.513	.085
Scarfs	7	piece	3	12.50	.292	1.071	.643	.187
Cotton belts	1	piece	1	4.17	.042	1.000	.600	.025
Garters	1	pair	1	4.17	.042	.100	.080	.003
Straw hats	7	piece	6	25.00	.292	1.786	1.357	.396
Caps	19	piece	12	50.00	.792	.908	.534	.423
Felt hats	22	piece	13	54.17	.917	3.014	1.709	1.567
Leather shoes	35	pair	15	62.50	1.458	2.871	1.566	2.283
Nailed boots	9	pair	6	25.00	.375	2.011	1.067	.400
Men's shoes	98	pair	24	100.00	4.083	.996	.609	2.487
Ladies' shoes	78	pair	23	95.83	3.250	.519	.317	1.031
Socks	96	pair	24	100.00	4.000	.252	.147	.587
Stockings	87	pair	22	91.67	3.625	.212	.125	.454
Rubbers	33	pair	18	75.00	1.375	1.182	.694	.954

TABLE XXXVI. CLOTHING ARTICLES IN POSSESSION OF 24 WORKING FAMILIES—*Continued*

Items	Quantity	Unit	Families purchasing	Percentage of the 24 families	Average per family	Estimated value per unit		Average value per family
						Original	Present	
Bonnets	11	piece	8	33.33	.458	1.000	.582	.267
Silk socks or stockings	2	pair	1	4.17	.083	1.300	1.000	.083
Towels	45	piece	16	66.67	1.875	.133	.083	.155

clothing articles. On an average of these 24 families, the total value of clothing articles in possession of each family is estimated at $116.64, of which beddings constitute 16.7 per cent, clothes 73.6 per cent, and others 9.7 per cent. The inventory shows that among the varieties of beddings, nets are found in 17 of the families, each family in average being equipped with only one and two-tenths of a net; and pillows are found in 8 families, each family with less than one pillow. Under the group of clothes, each family is supplied among other articles with 1.8 double gowns of cotton lining, 2 double coats of cotton lining, 1.9 trousers of cotton lining, 0.8 double gown, 2 double coats, 1.9 double trousers, 1.5 gowns, 8.1 shirts, and 7.8 trousers. Table XXXVI is an inventory of the average amount of articles of clothing possessed by each family.

When the whole stock of clothing articles possessed by each family is distributed among its members, those to be shared by all the members of the family amounts to $19.59 or 16.8 per cent of the total; those of the husband, $40.60 or 34.8 per cent; of the wife, $25.03 or 21.5 per cent, of the son, $16.75 or 14.4 per cent, of the daughter, $11.95 or 10.2 per cent, and of other members, $2.72 or 2.3 per cent.

TABLE XXXVII. CLOTHING ARTICLES CLASSIFIED ACCORDING TO THEIR OWNERS*

	For all members	For husbands	For wives	For sons	For daughters	For other members	Total
Estimated value	$19.59	40.60	25.03	16.75	11.95	2.72	116.64
Percentage	16.8	34.8	21.5	14.4	10.2	2.3	100.0

* Average of 24 families.

Expenditure on Clothing Varies with Family Income

The amount of expenditure for clothing tends to vary with the amount of income. While distributing the families according to income groups as shown in Table XXXVIII, those with an income of $200 to $299.99 spend in average $20.80 a year for clothing; those with $300 to $399.99, $24.69; and those with $700 and above, $83.38 which is more than four times the amount spent by families of the lowest income group. A similar tendency is shown in the clothing expenses of each equivalent adult. In families of the income group of $200 to $299.99, each adult spends $7.40 for clothing; in those of $300 to $399.99, $8.40; and in those of $700 and above, $21.66, which is about three times the amount spent by an adult of families of the lowest income group. Workers with higher income, therefore, can always afford to have more decent clothing. The proportion among expenses for different groups of clothing articles—beddings, ready-made clothes, piece goods, and others—remains more or less the same in families of different income groups.

Fuel and Light

Owing to the small space that a worker's home usually occupies, kerosene, firewood and useless timber, which are less bulky than straw or cotton stalks, are preferred for fuel materials. Kerosene is used not only for cooking but also for lighting purposes. Of the 305 families covered in the inquiry, kerosene lamps are used in 274, which form 89.8 per cent of the total, and electric lights are used only in 38. The consumption of kerosene, therefore, ranks first among all fuel and light expenses. The yearly consumption of

TABLE XXXVIII. CLOTHING EXPENDITURE PER FAMILY AND PER EQUIVALENT ADULT IN FAMILIES OF DIFFERENT INCOME GROUPS

Income group	Number of families	Number of family members		Average expenditure for clothings per family									
				Total		Bedclothes		Clothings		Piece goods		Unclassified	
		Persons	Adult equivalents	Per family	Per adult equivalent	Per family	Per adult equivalent	Per family	Per adult equivalent	Per family	Per adult equivalent	Per family	Per adult equivalent
$200—299.99	62	3.95	2.81	20.80	7.40	.38	.13	1.92	0.68	11.32	4.03	7.18	2.56
300—399.99	95	4.17	2.94	24.69	8.40	.59	.20	2.62	0.89	12.84	4.37	8.64	2.94
400—499.99	80	4.89	3.50	34.65	9.90	.44	.13	4.73	1.35	18.83	5.38	10.65	3.04
500—599.99	31	5.19	3.75	47.96	12.80	.66	.18	4.91	1.31	27.63	7.37	14.76	3.94
600—699.99	25	5.92	4.10	59.18	14.43	.49	.12	5.36	1.31	31.91	7.78	21.42	5.22
700 and above	12	5.75	3.85	83.38	21.66	5.12	1.33	12.35	3.21	43.38	11.27	22.53	5.85
Total or average	305	4.62	3.28	34.01	10.37	.69	.21	3.87	1.18	18.37	5.60	11.08	3.38
				PERCENTAGE									
$200—299.99	20.3			100.00	100.00	1.83	1.83	9.23	9.23	54.42	54.42	34.52	34.52
300—399.99	31.2			100.00	100.00	2.39	2.39	10.61	10.61	52.01	52.01	34.99	34.99
400—499.99	26.2			100.00	100.00	1.27	1.27	13.65	13.65	54.34	54.34	30.74	30.74
500—599.99	10.2			100.00	100.00	1.38	1.38	10.24	10.24	57.61	57.61	30.77	30.77
600—699.99	8.2			100.00	100.00	.83	.83	9.06	9.06	53.92	53.92	36.19	36.19
700 and above	3.9			100.00	100.00	6.14	6.14	14.81	14.81	52.03	52.03	27.02	27.02
Total or average	100.0			100.00	100.00	2.03	2.03	11.38	11.38	54.01	54.01	32.58	32.58

the various fuel items by each family consists of 88.57 *chin* or catties of kerosene at $0.08 per *chin*, 117.9 bundles (2.5 *chin* to the bundle) of firewood at $0.056 per bundle, 421.04 *chin* of useless timber at $1.36 per hundred *chin*, 189.09 pounds of coal at $1.35 per hundred pounds, 158.10 *chin* of cotton stalks at $1.07 per hundred *chin*, 175.08 *chin* of raw straw at $0.66 per hundred *chin*, and a few other insignificant items. In most of the families kerosene stoves are equipped, which cost about five dollars each and consume about half a *chin* or four cents worth of kerosene a day. Electric lights cost about a dollar per month and kerosene lamps only sixty cents; economically therefore, the latter are preferred to the former for lighting purposes. When firewood and cotton stalks are used, earth or wooden stoves form a necessary equipment. Firewood is mostly from pines produced among mountains in Chekiang which is renowned for its combustibility. The coal used by working families is usually of very inferior quality. Coal stoves are sometimes used to boil water and cook meals. They consume about eight cents worth of coal a day and serve the purpose of a fireplace in winter time.

The total consumption of fuel and light of an average family amounts to $29.00 a year or $2.42 a month. Of this amount, the consumption of kerosene constitutes the largest portion of $7.10 a year, that of firewood the next, with $6.62, and useless timber still next with $5.72. The three items alone constitute two-thirds of the total fuel and light expenses. As to the other items, each family consumes in average $2.56 of coal, $1.69 of cotton stalks, $1.16 of raw straw, $0.60 of matches, and a small amount of of reeds, bean stalks, charcoal, coal balls, electricity and other kinds of fuels.

TABLE XXXIX. AVERAGE QUANTITY OF AND EXPENDITURE ON FUEL ITEMS PER FAMILY AND PER EQUIVALENT ADULT

Fuel Items	Unit	305 families				Families purchasing			
		Average quantity		Average expenditure		Number of families	Percentage of total number of families	Average consumption per family	
		Per family	Per equivalent adult	Per family	Per equivalent adult			Quantity	Expenditure
Fuel				**$29.00**	**$8.482**	**305**	**100.0**		**$29.00**
Kerosene	*chin*	88.57	25.90	7.10	2.075	302	99.0	89.45	7.17
Matches	box	90.05	26.33	.60	.176	305	100.0	90.05	.60
Firewood	bundle	117.90	34.47	6.62	1.935	223	73.1	161.25	9.05
Useless timber	*chin*	421.04	123.11	5.72	1.673	244	80.0	526.29	7.16
Cotton stalks	*chin*	158.10	46.23	1.69	.493	115	37.7	419.31	4.48
Raw straw	*chin*	175.08	51.19	1.16	.339	88	28.9	606.81	4.02
Reeds	*chin*	59.05	17.27	.61	.178	28	9.2	643.27	6.63
Bean stalks	*chin*	13.58	3.97	.15	.045	41	13.4	101.15	1.15
Coal	pound	189.09	55.28	2.56	.749	146	47.9	394.94	5.34
Charcoal	basket	.68	.20	.64	.187	160	52.5	1.30	1.22
Coal briquette	basket	.65	.19	.37	.109	85	27.9	2.32	1.34
Electric light				.86	.254	38	12.5		7.18
Others				.92	.269	213	69.8		1.32

The amount of fuel and light consumed by the families tends likewise to vary with their level of income as shown by the figures in Table XL. The proportion that each single item constitutes of the total fuel and light expenses remains approximately the same in families of different income groups. Exceptions must, however, be made of coal and electricity, which are more abundantly consumed in families of higher income than in those of lower one.

Miscellaneous Expenses. Under the miscellaneous group are included all expenditures incurred by the families that do not fall within the four main groups of expenses treated in the foregoing sections. Such expenses are further classified into 17 items, namely, communication,

TABLE XL. AVERAGE FUEL EXPENDITURE PER FAMILY BY INCOME GROUPS

Income group	Number of families	Average expenditure per family													
		Kerosene	Matches	Firewood	Useless timber	Cotton stalks	Raw straw	Reeds	Bean stalks	Coal	Charcoal	Coal briquette	Other fuels	Electric lights	Total
$200—299.99	62	6.00	.50	7.27	5.90	1.29	.59	.95	.08	1.86	.30	.32	.96	.30	26.32
300—399.99	95	6.71	.57	5.63	4.63	1.90	1.22	1.00	.19	1.73	.80	.13	.96	.57	26.04
400—499.99	80	7.23	.65	5.28	6.97	1.96	1.59	.15	.27	3.08	.55	.47	.89	.69	29.78
500—599.99	31	7.75	.65	6.95	6.08	2.66	1.07	.62	.07	2.45	.74	.78	1.02	1.33	32.17
600—699.99	25	9.51	.69	11.99	4.28	.57	.54			4.27	1.08	.53	.77	1.48	35.71
700 and above	12	8.21	.71	7.99	7.22	.13	2.27			5.91	.51	.57	.67	4.75	38.94
Total or average	305	7.10	.60	6.62	5.72	1.69	1.16	.61	.15	2.56	.64	.37	.92	.86	29.00
		PERCENTAGE													
$200—299.99	20.3	22.8	1.9	27.6	22.4	4.9	2.3	3.6	.3	7.1	1.1	1.2	3.7	1.1	100.0
300—399.99	31.2	25.8	2.2	21.6	17.8	7.3	4.7	3.8	.7	6.6	3.1	.5	3.7	2.2	100.0
400—499.99	26.2	24.3	2.2	17.7	23.4	6.6	5.3	.5	.9	10.3	1.9	1.6	3.0	2.3	100.0
500—599.99	10.2	24.1	2.0	21.6	18.9	8.3	3.3	1.9	.2	7.6	2.3	2.4	3.2	4.2	100.0
600—699.99	8.2	26.6	1.9	33.6	12.0	1.6	1.5			12.0	3.0	1.5	2.2	4.1	100.0
700 and above	3.9	21.1	1.8	20.5	18.6	.3	5.8			15.2	1.3	1.5	1.7	12.2	100.0
Total or average	100.0	24.5	2.1	22.8	19.7	5.8	4.0	2.1	.5	8.8	2.2	1.3	3.2	3.0	100.0

TABLE XLI. AVERAGE QUANTITY OF AND EXPENDITURE ON MISCELLANEOUS ITEMS PER FAMILY AND PER EQUIVALENT ADULT

Miscellaneous items	Unit	305 Families				Families purchasing			
		Average quantity		Average expenditure		Number of families	Percentage to total number of families	Average per family	
		Per family	Per equivalent adult	Per family	Per equivalent adult			Quantity	Expenditure
Total miscellaneous expenses				$112.000	$34.146	305	100.0		
Communication				5.366	1.636				$ 13.062
Travelling expenses				2.794	.852	84	27.5		10.146
Others				2.572	.784	269	88.2		2.916
Education				1.454	.443				6.243
Tuition				1.272	.388	68	22.3		5.705
Books and stationeries				.182	.055	103	33.8		.538
Sanitary expenses				7.868	2.399				7.938
Tooth powder, etc.				.501	.153	299	98.0		.511
Hair-dressing				2.427	.740	304	99.7		2.435
Bath				1.260	.384	293	96.1		1.312
Soap	piece	50.827	15.496	2.592	.790	305	100.0	50.827	2.592
Toilet paper	100 sheets	15.242	4.648	1.088	.332	305	100.0	15.244	1.088
Wine, cigarettes, etc.				19.098	5.823				53.216
Cigarettes	10 pieces	231.869	70.692	10.284	3.135	282	92.5	250.780	11.123
Shaoshing	*chin*	38.020	11.592	3.927	1.197	270	88.5	42.948	4.436
Kaoliang	*chin*	21.432	6.534	3.160	.963	282	92.5	23.180	3.417
Tea	*chin*	2.429	.741	.915	.279	295	96.7	2.511	.946
Native tobacco				.392	.120	10	3.3		11.961
Others				.420	.128	6	2.0		21.333
Water				7.660	2.335				9.576
Boiled water	ladle	4,436.469	1,352.582	7.582	2.312	305	100.0	4,436.469	7.582
Tap water				.078	.024	12	3.9		1.994
Furniture and utensils				4.545	1.386				
Kitchen utensils				1.450	.442				
Furniture				1.389	.423				
Others				1.706	.520				
Ornaments				.830	.253				
Repairs				1.094	.334	135	44.3		2.481
Social expenses				10.538	3.213				30.850
Gifts and presents				9.605	2.928	273	89.5		10.731
Social intercourse				.933	.284	69	22.6		4.125
Amusements				2.402	.732				18.334
Theatricals, etc.				1.242	.379	168	55.1		2.256
Gambling				1.160	.354	22	7.2		16.078
Rates and contributions				.719	.219	103	33.8		2.129
Interest on debt				5.733	1.748	166	54.4		10.534
Religious worship				5.315	1.620				6.000
Offerings				3.867	1.179	296	97.0		3.984
Tin-foils				1.448	.441	219	71.8		2.016
Savings				.176	.054				10.843
Savings				.164	.050	7	2.3		7.143
Life insurance				.012	.004	1	.3		3.700
Medical expenses				6.052	1.845				7.958
Doctor's fees				3.169	.966	217	71.8		4.455
Medicine				2.883	.879	251	82.3		3.503

TABLE XLI. AVERAGE QUANTITY OF AND EXPENDITURE ON MISCELLANEOUS ITEMS PER FAMILY AND PER EQUIVALENT ADULT—*Continued*

Miscellaneous items	Unit	305 Families				Families purchasing			
		Average quantity		Average expenditure		Number of families	Percentage to total number of families	Average per family	
		Per family	Per equivalent adult	Per family	Per equivalent adult			Quantity	Expenditure
Occassional expenses				**$22.644**	**$6.904**				**$280.794**
Remittance to relatives				3.375	1.029	51	16.7		20.181
Fees for taking care of children				.746	.227	15	4.9		15.167
Wedding and birthday celebrations				9.181	2.799	50	16.4		56.005
Funerals				7.848	2.393	63	20.7		37.995
Farm taxes				.049	.015	3	1.0		5.000
Purchase of properties				.870	.265	12	3.9		22.125
Childbirths				.175	.053	23	7.5		2.321
Coffins and shroud				.393	.120	1	.3		120.000
Rent for coffin rooms				.007	.002	1	.3		2.000
Sundry expenses				**10.505**	**3.203**				**104.554**
Children's expenses				5.463	1.666	263	86.2		6.336
Household expenses				2.597	.792	305	100.0		2.597
Wages for substitute workers				.236	.072	17	5.6		4.226
Depreciation				.381	.116	45	13.1		2.903
Gardening and live stocks				.220	.067	76	24.9		.882
Paper				.026	.008	35	11.5		.228
Boarding expenses	100 sheets	.254	.077	.428	.130	8	2.6	2.213	16.300
Installing electric lights				.195	.059	3	1.0		19.867
Photographs				.104	.032	25	8.2		1.266
Law suits				.280	.085	2	.7		42.740
Repair of clocks				.003	.001	1	.3		1.000
Scrolls				.002	.001	1	.3		.500
Toys				.011	.003	3	1.0		1.158
Picture frames				.013	.004	1	.3		4.000
Face cream, etc.				.546	.166	302	99.0		.551

education, sanitary expenses, wine and cigarettes, water, furniture and utensils, ornaments, repairs, social expenses, amusements, rates and contributions, interest on debt, religious worship, savings, medical expenses, occassional expenses, and sundry expenses. The average expenditure per family and per equivalent adult for these items are shown in Table XLI.

(1) Communication. The average expenditure for various kinds of traffic and communication amounts to $5.37 a year for each family and $1.64 for each equivalent adult, constituting 4.8 per cent of the total miscellaneous expenses. Under this heading, travelling expenses between Shanghai and native towns amount to $2.80 each family, and tram, ricksha and ferry boat fares, and postal expenses taking together amount only to $2.57. In view of such little amount being spent for traffic fares, the workers must have a daily walk to and back from their working places. Families in which travelling expenses are incurred are 84 in number, constituting 27.5 per cent of the total; and those having expenses for other kinds of traffic, 269 in number, constituting 88.2 per cent,

(2) Education. The average educational expenses for all the families are $1.45 a year for each family or $0.44 for each adult, which is only 1.3 per cent of the total expenses under the miscellaneous group. The average tuition fees incurred by each family is $1.27, and expenses for books, newspapers and stationeries only $0.18. Expenses for the former are found in 68 families or 22.3 per cent of the total, and for the latter in 103 families or 33.8 per

cent. Only in one of the 305 families is found a boy who is studying in a near-by college. His father being a native of Shanghai owns a few one-story houses and has quite a handsome amount of monthly income, which enables him to afford $80 a year for his son's education. Among the rest of the families, the best that their children can have is no more than elementary school education. Expenses for newspaper are found in 16 of the families, none of them, has regular subscription to the papers. The educational qualification of the heads of the 305 families is tabulated as follows.

Period of schooling	Number of family heads	Per cent of the total
—	183	60.0
1 year	2	.7
2 years	20	6.6
3 years	36	11.8
4 years	25	8.2
5 years	19	6.2
6 years	12	3.9
7 years	2	.7
8 years	5	1.6
9 years	1	.3
	305	100.0

(3) Sanitary Expenses. The average sanitary expenses for each family amounts to $7.87 a year, among which, tooth powder, tooth paste, etc., cost about $0.50, hair-dressing $2.43, bathing $1.26, soap $2.59, and toilet paper $1.09. Expenses for tooth powder, etc. are found in 299 families or 98.0 per cent of the total, those for hair-dressing 304 families—in one family hair-dressing being done by its own members—or 99.7 per cent, those for bathing in 293 families or 96.1 per cent, and those for soap and toilet paper in every one of the families.

(4) Wine, Cigarettes, etc. Wine and cigarettes are the two favorite pursuits among the working class. Under this heading, cigarettes figure prominently with an average yearly consumption of 231.9 boxes of 10 cigarettes each for each family, which cost about $0.044 each box and amount to a total of $10.28. The average consumption of *shaoshing* (a kind of brewed liquor) amounts to 38.0 *chin* per family at $0.11 per *chin*, making a total of $3.93; that of *kaoliang* (a kind of strong liquor), 21.4 *chin* at $0.148, making a total of $3.16; that for tea, 2.43 *chin* at $0.40, making a total of $0.92; and that for native tobacco and other items amount to a total of $0.81. On the average, the annual expenditure under this heading amounts to $19.10 per family and constitutes 17.1 per cent of the total miscellaneous expenses. The number of families having spent their income on the above items are as follows: cigarettes, 282 families or 92.5 per cent of the total; *shaoshing*, 270 or 88.5 per cent; *kaoliang*, 282 or 92.5 per cent; tea, 295 or 96.7 per cent; native tobacco, 10 or 3.3 per cent; and others 6 or 2.0 per cent.

(5) Water. The supply of hot water in the working families is mostly obtained from hot water shops, which can be found in almost every street in Shanghai. Boiled water is sold at 2 or 3 ladles (each containing about 25 Chinese ounces) a copper, and hot water, not boiled, at 3 or 4 ladles. It is, therefore, both convenient and economical for the working families to buy hot water rather than to boil their own. Hot water expenses are found in every one of the families under investigation, and the average expenditure for this item amounts to $7.58 a year or $0.63 a month for each family. Tap water is mostly supplied by the landlords, its expenses being included either in the local rates or in the rental. There are, however, 12 families in which tap water is not provided for and which have to pay in average about $1.99 a year for their supply of cold water. Taking hot and cold water together, each of the 305 families spends $7.66 a year which is 6.8 per cent of the total miscellaneous expenses.

(6) Furniture and Utensils. The average expenditure per family for furniture and utensils in a year is $4.55 or 4.1 per cent of the total miscellaneous expenses, among which that for furniture such as tables, chairs, etc., amounting to $1.39, and that for kitchen utensils such as bowels, chopsticks, stoves, etc., to $1.45. Of the varieties of furniture, tables, stools, and beds figure predominently. Expenses for stools are found in 22 families or 7.2 per cent of the total, averaging two stools each family valued at $1.05; tables in 20 families or 6.6 per cent, averaging 1.1 tables each valued at $4.17; and beds in 12 families or 3.9 per cent, averaging 1.1 beds each valued at $11.28. In a detailed inquiry into 24 of the families, an inventory of the total household furniture and utensils has been worked out and their value estimated. The inventory shows that the total value of the whole stock of household goods in each family is estimated in average at $47.18; among which furniture such as beds, tables, chairs, trunks, etc., being worth about $26.80 or 56.8 per cent of the total; kitchen utensils such as cooking pans, stoves, bowels, chopsticks, etc., $9.71 or 20.6 per cent; sanitary equipments such as wash basins, tooth brushes, etc., $3.70 or 7.8 per cent; toilet articles such as combs, mirrors, etc., $3.60 or 7.6 per cent; and other household goods, $3.37 or 7.1 per cent.

(7) Ornaments. The average expenditure per family for ornaments in a year amounts to $0.83 or 0.7 per cent of the total miscellaneous expenses. Under this heading are included among others, ear rings, bracelets, hairpins, babies' ornaments, rings, and watches. Ear rings are purchased by 29 families averaging 1.24 pairs each family valued at $2.31; bracelets by 13 families averaging 1 pair each valued at $2.38; hairpins by 10 families averaging 2 pieces each valued at $0.16; ornaments for babies by 9 families averaging 1 piece each valued at $2.76; rings by 6 families averaging 1.17 pieces each valued at $7.51; and watches by 10 families averaging 1.1 pieces each valued at $2.69.

(8) Repairs. The average expenditure per family for repairing of houses or furniture amounts to $1.09 a year. The number of families incurring expenses of this nature is 135, which is 44.3 per cent of the total.

(9) Social Expenses. By social expenses is meant those for social intercourse in the form of giving presents and dinners on occassions or on festival days. Expenses for the former are incurred in 273 families or nearly nine-tenths of the total, amounting to $9.61 each; and those for the latter in 69 or 22.6 per cent, amounting to $0.93 each. The average social expenses per family amount to $10.54 which constitutes 9.41 per cent of the total expenditure under the miscellaneous group.

(10) Amusements. The expenditure for amusements is very low as compared with most other items, being only $2.40 per family in the year which constitutes 2.1 per cent of the total miscellaneous expenses. Amusements may be proper or improper; the former includes theatricals and movies, and typical of the latter is gambling. The number of families having spent their income for theatricals or movies amounts to 168 constituting 55.1 per cent of the total, with each family spending about $2.26, or on an average of all the 305 families, $1.24 each. The average amount lost in gambling is $1.16 per family. This amount must have been understated, as most of the family members under investigation were not inclined to reveal too much about their bad luck at cards.

(11) Rates and Contributions. In 103 families or 33.8 per cent of the total, expenses for rates or contributions are found, averaging $2.13 a year for each family. On an average of all the 305 families, the share borne by each is only $0.72.

(12) Interest on Debt. It is found that a total of 166 families which amount to 54.4 per cent of the aggregate number of families had run into debt and paid in average an annual interest of $10.53 per family. On an average of all the families, each is burdened with $5.73 per year for interest on debt, which constitutes 5.1 per cent of the total miscellaneous expenses. It must also be noted that the sum stated above is just the interest recorded in the account books, which should by no means be considered complete. There are in many cases interests over due but not paid up, and in others payments of debts with the amount of interest and that of principal not separable from each other. The actual amount of interest charges borne by the average working families, therefore, should be well over the sum stated above.

(13) Religious Worship. The average expenditure for religious worship, which includes offerings to ancestors and deities and burning of tin-foils, amounts to $5.32 a year for each family, constituting 4.8 per cent of the total miscellaneous expenses. Families having expenses for offerings are 296 in number amounting to 97.0 per cent of the total, each family spending about $3.98; and those purchasing tin-foils for the purpose of worship, 219 in number amounting to 71.8 per cent, each spending $2.02.

(14) Savings. Under this heading is included also premium for life insurance. Only 7 of the families had in the period of inquiry reported to put aside some money for savings, which amounted in average to $7.14 each family. Life insurance contract was found only in one family, which paid an annual premium of $3.70. On an average of all the families, the annual amount of savings including life insurance premium for each family is as low as $0.18.

(15) Medical Expenses. The average expenditure for doctor's fees and medicine amounts to $6.05 per family, constituting 5.4 per cent of the total miscellaneous expenses. This sum is made up of $3.17 for doctor's fees and $2.88 for medicine. Of the 305 families, 217 or 71.8 per cent of the total had applied for doctor's services and 251 or 82.3 per cent had expenses for medicaments.

(16) Occasional Expenses. Under this heading are included remittance to relatives, farm taxes, purchase of properties, childbirths, weddings and birthday celebrations, funerals, coffins and shroud, and rent for coffin rooms. For these items, each family spent in average $22.64 a year, which is 20.2 per cent of the total miscellaneous expenses. Among all occassional expenses, those for weddings and birthday celebrations, funerals, childbirths, and remittance to relatives figured prominently. During the period of inquiry, 50 of the families had incurred expenses for weddings and birthday celebrations, which amounted in average to $56.01 each family; 63 had incurred funeral expenses, costing $38.00 each; 51 had remmitted sums of money to relatives living in their native homes, amounting to $20.18 each; and 23 had incurred expenses for childbirths, amounting to $2.32 each.

(17) Sundry Expenses. All expenses that are not included in the sixteen miscellaneous items come under this heading. Such expenses amount to $10.51 per family, constituting 9.4 per cent of the total under the miscellaneous group. The two items that figure predominantly under this heading are toys and candies for children and sundry household expenses; the former are found in 263 families or 86.2 per cent of the total averaging $6.34 each family, and the latter in all families, averaging $2.60 each.

What constitute the miscellaneous group are those that aim at a more decent livelihood and lead to the satisfaction of a higher level of wants than to maintain mere physical sufficiency. Education and sanitation, amusements and ornaments, these and similar items are the the landmark of a higher rank of social standing. It is found that families of higher income usually

TABLE XLII. AVERAGE MISCELLANEOUS EXPENDITURE PER FAMILY BY INCOME GROUPS

Income group	Number of families	Average expenditure per family: Communication	Educational expenses	Sanitary expenses	Wine, cigarettes, etc.	Water	Furniture and utensils	Repairs	Ornaments	Social intercourse	Amusements	Rates and contributions	Interest on debt	Religious worship	Savings	Medical expenses	Occassional expenses	Sundries	Total
$200—299.99	62	3.41	.36	6.05	12.53	7.04	2.63	.08	.31	5.95	.63	.37	3.44	3.48		3.59	15.53	5.05	70.45
300—399.99	95	4.33	.65	6.94	19.34	7.22	3.72	.57	.64	8.33	2.72	.42	6.22	4.03		4.50	12.12	8.86	90.61
400—499.99	80	5.15	2.21	8.47	21.04	7.36	3.95	.97	.45	8.93	1.03	.92	6.24	5.45	.03	6.86	17.52	9.89	106.47
500—599.99	31	7.46	1.92	8.85	17.21	8.78	7.35	1.12	1.88	16.45	5.16	.91	4.08	7.16	.39	6.75	38.53	12.93	146.93
600—699.99	25	7.77	1.88	10.75	28.10	8.71	7.00	6.12	1.38	24.06	5.12	1.43	8.51	10.34	1.51	11.99	36.83	25.93	197.43
700 and above	12	14.72	6.34	12.00	24.30	11.28	12.58	.90	3.59	18.94	5.34	1.64	8.81	8.85	.17	11.56	106.32	17.43	264.77
Total or average	305	5.37	1.45	7.87	19.10	7.66	4.55	1.09	.83	10.54	2.40	.72	5.73	5.32	.18	6.05	22.64	10.50	112.00

PERCENTAGE

$200—299.99	20.3	4.84	.51	8.58	17.78	9.90	3.73	.12	.44	8.45	.89	.53	4.88	4.94		5.10	22.04	7.17	100.00
300—399.99	31.2	4.78	.72	7.66	21.34	7.97	4.10	.63	.71	9.20	3.01	.46	6.86	4.45		4.96	13.37	9.78	100.00
400—499.99	26.2	4.83	2.08	7.96	19.77	6.91	3.71	.91	.42	8.39	.97	.86	5.87	5.11	.02	6.44	16.46	9.29	100.00
500—599.99	10.2	5.08	1.31	6.03	11.71	5.98	5.00	.76	1.28	11.20	3.51	.62	2.78	4.87	.26	4.59	26.22	8.80	100.00
600—699.99	8.2	3.93	.95	5.45	14.23	4.41	3.54	3.10	.70	12.19	2.60	.72	4.31	5.24	.76	6.07	18.66	13.14	100.00
700 and above	3.9	5.56	2.39	4.53	9.18	4.26	4.75	.34	1.36	7.15	2.02	.62	3.33	3.34	.06	4.37	40.16	6.58	100.00
Total or average	100.0	4.79	1.30	7.02	17.05	6.84	4.07	.97	.74	9.41	2.14	.64	5.12	4.75	.16	5.40	20.22	9.38	100.00

spend a greater percentage of their total expenditure on these items. The percentage that the miscellaneous expenses constitute of the total cost of living is, therefore, often regarded as a scale to measure the well-being of the families. On an average of the working families under investigation, each family spends $112.00 a year for items under the miscellaneous group which is approximately one-fourth of the total expenditure. The percentage is considerably higher than what the working families in other cities can afford to spend and well-nigh approaches the standard maintained in Japan, the United States and European countries.[1] It is likely for one to infer from the above facts that the working class in Shanghai are able to maintain a fairly high standard of life. How far is this true is, however, highly skeptical. A careful scrutiny of the actual status of living would defeat the optimistic view following such an abrupt conclusion.

In the first place, of all the family heads under investigation, as many as 60 per cent have attended school for less than a year, and 33.5 per cent for not more than five years. Again the average educational expenses for each family amounts only to $1.45 a year, constituting 1.3 per cent of the total miscellaneous expenditures. Illiteracy must be a universal phenomenon among the working class, and with the scanty amount spent for education, most of the children of the families must have been deprived of their chance to attend schools. Education in this country is an expensive undertaking, a forbidden fruit for the privileged class, and it is far beyond what the working people can afford with their meagre income. It is indeed true that free schools for workers and workers' children have gradually been established both by private and public institutions, it however helps but little to a solution of the problem of illiteracy.

In the second place, while the working families spent so little an amount on education, they squandered more than thirteen times as much on wine and cigarettes which amount to $19.10 a year or 17.1 per cent of the total miscellaneous expenses, and about four times as much on religious worship which amount to $5.32 or 4.8 per cent. Due to the lack of education and of proper amusement, most of the workers have sought to spend their spare time in the evil indulgences of smoking and drinking or in superstitious worship and offerings to god. It was shown in a previous chapter that the average working families had to meet a yearly deficit of $37.87, of this amount at least two-thirds could be avoided if these unnecessary expenses which amounted to a total of $24.42 were dispensed with. This would not only reduce the amount of debts incurred by the working families, but also alleviate their burden of interest charges.

[1] See Tables XIII and XIV.

VIII. SUMMARY

Size of the Families. The budgetary inquiry conducted by the Bureau covers a period of twelve months from April 1929 to March 1930. Complete data are obtained from a total of 305 working families. A great majority of the families, 85.90 per cent of the total, are families of from 3 to 6 persons, and the average size is 4.62 persons per family or 5.09 persons including boarders. There are in the 305 families a total of 140 boarders, 8 of them being at the same time lodgers in their respective boarding families. According to the various inquiries conducted in this country, the average size of a rural family is well above five persons and that of an urban family a little less than five. In the United States and in India, an urban family consists in average of from 4.2 to 5.3 persons. These figures agree quite closely with the result of the present inquiry. A definite tendency toward a simple constitution is shown among the Shanghai working families, 81.42 per cent of which are composed of a husband, a wife, and one or two children.

The amount of consumption tends to vary with ages and differ between sexes. According to Atwater scale, a male adult of 17 years of age is taken as a unit of consumption, and children and women are converted to terms of the unit in proportion of their relative consuming ability. According to this scale, an average working family in Shanghai is found to consist of 3.28 equivalent male adults or 3.42 including boarders. A majority of 73.4 per cent of the families are those of from 2 to less than 4 equivalent male adults. The number of equivalent adults in these families is found to be in direct proportion to their amount of income.

Age and Sex. Of the 1,410 persons in the 305 families, 707 are males and 703 females, the average age of the former being 23.10 years and that of the latter 25.24. The members of the families are distributed among the different age groups as follows: from less than 1 to 14 years of age, 34.5 per cent of total; from 15 to 49, 56.2 per cent; and 50 or over, 9.3 per cent. The percentage distribution among the different groups likewise agrees quite closely with the results of inquiries conducted elsewhere in this country. According to the theory of Sundbärg, a population with 40 per cent below 15 years of age and 10 per cent over 50 is considered as growing, one with 33 per cent of the former and 17 per cent of the latter as stable, and one with 20 per cent of the former and 30 per cent of the latter, as diminishing. Judging from this criterion and disregarding all other factors which contribute to the increasing or diminishing size of the labor population, there are possibilities for the Shanghai working class to grow in size.

Occupational Distribution. Of the 1,410 persons, 44.61 per cent are gainfully occupied and 55.39 per cent are not. During the period of inquiry, 55 persons or 8.74 per cent of the total lost their jobs. In each of the families, an average of 2.06 persons are gainfully employed, approximately one out of every two members. Efforts have been made to include in the inquiry workers of all occupations, though preponderance being laid upon factory workers. Most of the male members are employed in cotton spinning, cotton weaving and machinery industries, and the bulk of the female members in cotton spinning, cotton weaving, and silk reeling. As textile is the leading industry in this city, textile workers form 60.26 per cent of the total gainfully occupied.

Income. On an average of the 305 families, the total annual income amounts to $416.51 each family, of this sum 87.3 per cent come from wages and the rest consist of earnings from subletting spare rooms, boarders' pay, gifts, financial support from relatives or friends, earnings from peddlery, etc. When compared with the finanical condition of workers in other localities of the country, the income of the Shanghai working class is composed of a

relatively smaller percentage of wages and of a greater amount of rentals of sublet rooms and boarders' pay. As a rule, the greater the amount of income a family earns the smaller is the percentage constituted by wages, and vice versa. The Shanghai working families in general, therefore, are provided with comparatively more sources of income and show less dependence on wages as the sole means of living.

Expenditure. The Shanghai working families pay in average $454.38 for their annual expenditure, of which 53.2 per cent are expenses on food, 8.3 per cent on rent, 7.5 per cent on clothing, 6.4 per cent on fuel and light, and 24.6 per cent on miscellaneous items. The percentage distribution of the expenses on food, rent and miscellaneous items in families of different income groups shows close conformity to the Engel's laws of consumption. The average working families in Shanghai are able to maintain a comparatively better standard of life than that in other localities of the country, but are of course not so well-afforded as those of foreign countries. A better standard of life is usually indicated by a low percentage spent for food and a high one for miscellaneous expenses. The Shanghai budget, though shows a very high percentage for miscellaneous expenditure, is by no means a convincing proof to the fact that workers in this city are very well provided for. If the average annual expenditure for each equivalent male adult, that is $135.16, is taken as the minimum living expenses for each adult, every supporting adult is to take care of, aside from his own living, 1.16 dependent adults and 0.44 semi-dependent adult.

The Amount of Deficit. With the total receipt of $416.51 to defray the aggregate expenses of $454.38, the working families are facing a yearly deficit of $37.87. Two-thirds of the families are found in shortage of from $70 to $120 per year. If wages were considered their sole source of income, scarcely one or two out of every ten families are able to meet their living expenses.

Besides the items of income and expenditure treated in the foregoing section, there are other nominal receipts and payments, the former include borrowings, receipts from pawned articles, *hui* funds, purchase on credit and loans returned, amounting to a total of $148.02, and the latter include payment of money borrowed, redemption of pawned articles, *hui* subscriptions, payment of bills due, and lending, amounting to $99.12. Taking the balance between the nominal receipts and payments, an average surplus of $48.90 is shown for each family. It is with this amount of surplus that the average families manage to tide over their annual deficit of $37.87 and are able to keep a little cash amounting to $11.03 on hand.

The total nominal receipts constitute 26.2 per cent of the aggregate income; the working families have to depend for over one-fourth of their income on various forms of borrowings. Of the total amount of expenditures, 17.6 per cent are of nominal nature. It is found that of the amount borrowed less than half is paid up, and of the articles pawned scarcely half is redeemed.

Receipts from borrowings are found in 88.2 per cent of the families, those from pawned articles in 78.0 per cent, *hui* funds in 69.5 per cent, and purchase on credit in 48.5 per cent. A majority of the families, therefore, have to resort to exorbitant usurers and ruthless pawn brokers. The rate of interest charged by the pawn brokers is usually around 20 per cent per annum, and that charged for the so-called "stamp money," which represents an extreme form of usury, is sometimes as high as over 100 per cent.

Food Items Classified The variety of food items consumed by Shanghai working families are classified under five main groups, namely, cereals and products, beans and vegetables, meat, fish and egg, condiments and others. (1) Of the total food consumption, the

group of cereals and products constitutes over one half of the amount, and of the total consumption under that group, over four-fifths are that of rice. Unglutinous rice is consumed in 90 per cent of the families, *sien* rice in 68 per cent, and a combination of both unglutinous and *sien* rice in 58 per cent. A rice diet is, therefore, regularly kept by the working people in this city with wheat and wheat products as supplementary food-stuffs.

(2) A great variety of beans and vegetables might be mentioned, but what constitutes the favorite items of consumption among the working families are confined but to a few. Among beans and bean products, the items that are most popularly consumed consist of bean curd, fresh, dried, sheet, and fried, peeled broad bean, fresh mung bean starch in strips, etc.; and among vegetables, they are *chin tsai*, salted *hsien-li-hung*, turnips, spinach, allium odorium, celery, egg plants, etc. Of all the varieties, bean curd and *chin tsai* are the two favorite dishes which are served at the dinning table of almost every one of the working families.

(3) The expenditure for meat, fish and eggs is almost equivalent to that for beans and vegetables. Of the variety of meat, fresh pork, fresh beef and salted pork are most abundantly consumed, and of all the items fresh pork is the most important one which constitutes over one-third of the total expenditure under that group. Among aquatic products, mullets, cutlass fish, silver carp, and fresh and salted white fish are most popular. Duck's eggs are always preferred to hen's. Milk and milk food are very rarely consumed in the working families.

(4) Soy bean oil, soy bean sauce, and salt are found in all the families. Lard and peanut oil are almost equally indispensable. Sesamum oil, soy bean paste and vineger are likewise consumed in most of the families, though in comparatively smaller quantity. Condiments of high value are but occassionally consumed.

(5) Fruits are ordinarily not affordable by the working families. Comparatively speaking, water melons are most widely consumed, and sugar canes and water chestnuts next. Among dried nuts, melon seeds and peanuts constitute the principal items of consumption, most of which are consumed during the new year or on festival days.

Average Food Expenditure Classified. The average food expenditure of a family amounts to $241.54 per year, of which cereals and products constitute 53.4 per cent, beans and vegetables 17.5 per cent, meat, fish and egg 16.5 per cent, condiments 10.5 per cent, and others 2.1 per cent. Food expenditure, too, tends to increase as family income increases. It does not follow, however, that the percentage which the various groups constitute of the total food expenses tends to vary in proportion to the amount of family income.

Comparative Study of Dietary in Shanghai With That in Other Localities. The result of the present investigation with respect to food consumption agrees quite closely with that of a budgetary inquiry into families of cotton mill workers in Shanghai conducted by the National Tariff Commission. Comparing with the rural and urban laborers in Peiping, the working people in Shanghai claims a better diet that is more healthily apportioned. The dietary of Peiping working class is composed of over 80 per cent of cereals and products and only a minute amount of other items. While the Shanghai diet is evidently not quite the same as that of the northern provinces, it shows close resemblance to that of our alien neighbors, India and Japan. A vegetable diet is maintained in Bombay, in Japan, as well as in Shanghai. Cereals, beans, and vegetables constitute over 60 per cent of the total food consumption, and meat, fish, eggs and milk about 16 per cent. Comparing the diet of Shanghai working class with that of the wage earning population in western countries, Ireland and the United States being chosen for comparison, a keen contrast is shown in that the former is largely a vegetarian one with meat, fish, etc. as appetizing food, while the latter consists chiefly of

meat and milk food with cereals and products as auxilliaries. In both of these countries, though the Irish dietary is of course inferior to the American, meat, eggs, milk and milk food constitute at least from 50 to 70 per cent of the total food consumption and cereals and products only from 10 to 20 per cent.

Nutrition and Calorific Value of Food. The average food consumption of an equivalent male adult among Shanghai working families consists of 82.5 grams of proteins, 48.8 grams of fats, and 559.8 grams of carbohydrates, which give a total fuel value of 3,008 calories. This amount is fairly enough for a laborer at light work. The nourishments contained in the Shanghai diet, however, are not well adjusted; the amount of proteins barely meets the minimum requirement, that of fats is insufficient, while that of carbohydrates is over supplied. Nine-tenths of the proteins come from plant food and only one-tenth from animals. Physiologically speaking, therefore, their quality is definitely very poor. Over 70 per cent of the calorific value in food come from cereals, which is the natural result of the vegetarian diet kept in this city. Iron in the inorganic salts is sufficient, while calcium and phosphorus are lacking. Both Vitamin-A and D are lacking.

Types of Houses. The houses occupied by the working families in Shanghai might be classified according to their forms of structure into three types: (a) houses of comparatively better structure which are usually two-storied buildings consisting either of a wooden door with stone frame at the main entrance opening into a courtyard, or of a wooden door with no stone frame opening directly into the sitting room; (b) houses of inferior structure, which are mostly time-worn bungalows; and (c) straw huts.

Housing Condition of the Families. Of the families covered in the inquiry, 60 per cent live in two-storied houses, 34 per cent in one-story ones, and 6 per cent in straw huts. 47.6 per cent of the families occupy only one room, 42.6 per cent two rooms, and 9.8 per cent three rooms or over. On an average of all the families, each occupied 1.65 rooms, and taking 4.62 persons or 3.28 equivalent adults as the average number of persons in a family, each room is to accommodate 2.8 persons or 2 equivalent adults. Basing on the result of physiological experiments on the minimum space necessary for human living, with special reference to the housing condition in this city, a room of 32 cubic *kung ch'ih* is set as a common unit of space, a standard *chien*. It is calculated that each family occupies in average 1.41 standard *chien* and each *chien* accommodates 3.2 persons or 2.3 equivalent adults. Close correlation is shown between the number of persons living in a room and the income of the families; the greater the family income, the more space each individual is able to occupy. While the housing condition of laborers in Shanghai is compared with that in Peiping, even the deplorable living quarters in this city would seem very much better off. While compared with that in the United States and European countries evidently houses in this city are highly over-crowded.

Each of the 305 families is provided, in average, with only 1.24 windows with an area of not more than 0.15 square *kung ch'ih*. Taking 1.65 as the average number of rooms occupied by each family, each room is provided with a window area of less than one-tenth of a square *kung ch'ih*. Most of the huts have practically no window at all. Wooden floor is equipped in 62.3 per cent of the families, cement in 13.4 per cent, and mud in 24.3 per cent. As to the sources of water supply, tap water is used in 68 per cent of the families, water from wells in 14 per cent, and water from creeks in 18 per cent. Water for cooking and drinking purposes is mostly bought from hot water shops. Kitchens are provided in 58 per cent of the families while the other 42 per cent have to do cooking in their bed rooms.

Rent. It has been figured out that each family is burdened with a rent of $37.83 per year or $3.15 per month, averaging $1.91 per room per month or $2.19 per *chien*, Each individual is responsible for a share of $8.19 per year or $0.68 per month; and each equivalent adult, $11.06 per year or $0.92 per month. The amount of rent to be ascribed to each person or each adult tends to increase as the family income is greater.

Clothing. The average expenditure on clothing for each of the working families amounts to $34.01 per year, of which 54.0 per cent are expenses for piece goods, 11.4 per cent for ready-made clothes, 2.0 per cent for beddings, and 32.6 per cent for hats, socks, shoes and other wearing apparels. Among piece goods, the items that are most popularly used are sheetings, shirtings, striped cotton shirtings, drills and jeans, printed T-cloth, white irishes, imitation twills and venetains, cotton flannel, artificial silk and cotton piece goods and a few other varieties. Silk and woollen goods of high value are rarely purchased. An inventory of the entire stock of clothing articles in 24 of the families under investigation has been worked out. The total value of these articles is estimated at $116.64 per family, of which beddings constitute 16.7 per cent, clothes 73.6 per cent, and others 9.7 per cent.

Fuel and Light. The total fuel expenses of a family amount to $29.00 per year. Of all the fuel items, kerosene, firewood and useless timber are most commonly used. Each family consumes in average 88.6 *chin* of kerosene, 118 bundles of firewood, and 421 *chin* of useless timber; these three items taking together constitute two-thirds of the total fuel expense.

Miscellaneous Expenses. Under the miscellaneous group are included all expenses other than those fall within the four main groups of food, housing, clothing and fuel and light. The total miscellaneous expenses amount to $112.00 a year for each family. The variety of items classified under this group are in order of the amount spent: occassional expenses which include remittance to relatives, farm taxes, purchase of properties, childbirths, weddings and birthday celebrations, funerals, coffins and shroud, and rent for coffin rooms, amounting to $22.64 per year; wine, cigarettes, etc., $19.10; social expenses, $10.54; sundry expenses which include toys and candies for children and other household expenses, $10.51; sanitary expenses, $7.87; water, $7.66; medical expenses, $6.05; interest on debt, $5.73; communication, $5.37; religious worship, $5.32; furniture and utensils, $4.55; amusements, $2.40; education, $1.45; repairs, $1.09; ornaments, $0.83; rates and contributions, $0.72; and savings, $0.18. It is shown that expenses for education, books and newspapers are far less than those for religious worship and form hardly one-tenth of those for wine and cigarettes.

Some Suggestions for an Improved Standard of Living. The foregoing analysis gives well-nigh a complete picture of the condition under which working families in this city are living. It has been shown that a working family earns in average an annual income of $416, but is burdened with an expenditure of $454, resulting in a deficit of $38 a year. To make up this amount of deficiency, the families have to be more careful about certain items of unnecessary expenses. The average working families spend over two-fourths of their income on food, one-fourth on miscellaneous expenses and the rest on the other items. It has been found that the foodstuffs consumed by them are deficient in nutrition value, and their houses and clothing are deplorable. It is hardly possible to cut down any of these expenses. The amount spent for miscellaneous items is, however, relatively high, but not suitably adjusted. The percentage expenses on sanitation, education, savings, etc. should by all means be raised, while those on wedding and birthday celebrations, on wine and cigarettes, on gambling, and on religious worship might be cut down considerably or even entirely dispensed with. The miscellaneous group, if properly readjusted,

might constitute a smaller percentage of the aggregate expenditure, but it would undoubtedly save much of the wasteful squanderings, and put the working families at an even higher standard of living. The dietary maintained among the working class might also be improved without at the same time resulting in an increase of expenses. The following measures might be easily accomplished. (1) As the husks of cereals are rich in Vitamin-B and also in proteins and fats, coarse rice should be used in preference to the fine one. (2) Beans contain proteins of good quality and surpass cereals both in the amount of vitamins and inorganic salts. The amount of cereals kept in the Chinese diet should be reduced and be substituted in part by soy bean and its products. (3) The consumption of vegetables especially tomatoes should be promoted. Green vegetables are rich in vitamins and inorganic salts, while tomatoes contain all the Vitamins A, B and C. (4) A few improvements should be made in the cooking methods. Vegetables should not be overcooked, for most of the vitamins and inorganic salts decompose readily when heated. The practice of first boiling rice in water and decanting away the water deprives it not only of the vitamins but also much of the proteins and carbohydrates. Again, the practice to soften food with caustic is not hygienic. Caustic not only destroys the gastric juice but also Vitamins A and B. For a remedy of the housing condition among the Shanghai working class, immediate measures are to be found, first in the formation of a committee for the adjustment of rental charges which is to decree the fairness of rentals charged and to arbitrate in disputes between landlords and tenants; and second, in the restraint of the unduly high rate of rent exacted by the so called secondary landlords. As a fundamental solution of the housing problem, three things are suggested: (1) tax on idle land, (2) encouragement of construction works, and (3) establishment of housing coöperatives.

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附　錄

一　平均每等成年男子每日食物的數量及其所得之營養素和發熱量

食品	數量	營養素 蛋白質	脂肪	碳水化物	燃料價值	無機鹽類	維生素
	克蘭姆	克蘭姆	克蘭姆	克蘭姆	卡羅里		
米麵類							
粳米	307·946	24·636	·924	243·277	1,079·868	硫磺	甲十乙十丙o
粳米粉	207·037	16·563	·621	163·559	726·077	同上	同上
麵粉	7·268	·577	·022	5·694	25·282	同上	同上
麵包	19·973	1·278	·240	15·559	69·508	鉀燐	同上
麵餅	15·265	·977	·183	11·891	53·119	同上	同上
麵條	27·993	1·792	·336	21·807	97·420	同上	同上
麵頭	8·099	·518	·097	6·309	28·181	同上	同上
飯	9·256	·592	·111	7·210	32·207	同上	同上
糕	9·097	·582	·109	7·087	31·657	同上	
糕	4·847	·388	·015	3·829	17·003	硫磺	甲十乙十丙o
糕糰	4·002	·320	·012	3·162	14·036	同上	
年糕	3·181	·254	·010	2·513	11·158	同上	
湯餛飩	1·043	·091	·003	·903	4·003	同上	
麵	·412	·026	·0005	·321	1·392	鉀燐	
包子	·505	·049	·005	·251	1·245	鉀鈉鐵燐硫磺	甲十乙十丙o
粥	·348	·028	·001	·275	1·221	硫磺	
糕餅	·423	·034	·001	·334	1·481	同上	
奶餅	1·218	·097	·004	·962	4·272	同上	
月餅	·652	·042	·001	·508	2·209	鉀燐	
皮	·057	·006	·0002	·059	·262	硫磺	
釀油條	·005	·0004		·004	·014	同上	甲十乙十丙o
其他	13·176	1·164	·138	10·074	46·194		
豆及蔬菜類							
腐皮	51·721	5·172	1·898	1·396	43·354		
豆干	4·252	·862	·313	·170	6·945		
豆腐	8·325	2·081	1·049	·333	19·097		
豆腐乾	19·924	1·136	·159	·996	9·959		
豆粉	1·658	·076	·836	·496	9·812		
豆芽	6·039	1·545	·170	3·563	21·962		
豆芽	9·113	·059	·018	8·040	32·558		
豆皮	9·076	2·323	·255	5·355	33·007		甲o乙十丙十
豆	3·461	·096	·012	·104	·908		
豆	1·762	·011	·001	1·436	5·797		
豆類	1·491	·334	·027	·889	5·135	鈣鎂鉀燐磺	甲十乙十丙o
他	2·237	·503	·040	1·333	7·704	同上	甲o乙十丙o
豆	1·802	·495	·032	1·028	6·020		
菜	103·614	1·450	·207	4·973	27·555		甲十乙十丙十
菜	15·101	·211	·030	·725	4·014		
菜	1·854	·026	·004	·089	·496		
菜	1·266	·018	·003	·061	·343		
菜	26·892	·339	·038	·350	3·098		
菊菜	20·915	·272	·021	1·610	7·717	鉀	甲十乙十丙十
菜	8·867	·199	·035	·300	2·311		
芽菜	6·857	·144	·021	·219	1·641	鉀鈉	甲十乙十丙十
菜	·415	·009	·002	·014	·110		
豆	9·062	·682	·009	·234	1·345	鉀氯	乙十丙十
菜	8·962	·146	·051	·475	3·943		
頭	6·751	·155	·014	·176	1·450		
白芽菜	7·366	·133	·007	1·083	4·927	鉀	甲十乙十丙十
芽豆	5·017	·171	·010	·492	2·742		
芽菜	3·363	·047	·020	·730	3·288	鉀	
筍	1·575	·011	·002	·031	·186		
筍	1·728	·012	·002	·035	·306		
豆	9·231	·150	·053	·489	3·033		甲o乙十丙十
菁菜	4·066	·057	·008	·080	·620		
蕊	2·918	·015		·032	·188		
菜	2·116	·047	·002	·053	·418		
蒜乾	2·833	·040	·008	2·521	10·316		乙十丙十
蘿蔔	1·253	·016	·001	·096	·457	鉀	

一　平均每等成年男子每日食物的數量及其所得之營養素和發熱量

食品	數量	營養素 蛋白質	營養素 脂肪	營養素 碳水化物	燃料價值	無機鹽類	維生素
	克蘭姆	克蘭姆	克蘭姆	克蘭姆	卡羅里		
茄子	4·578	·055	·014	·333	1·278	鉀	
東瓜	6·332	·032	·006	·165	·042	鉀	
黃瓜	2·332	·016	·005	·061	·353	鉀	
菜心	6·115	·241		·241	1·928		
椒	2·462	·027	·002	·113	·578		
豆筍	1·551	·031	·005	·079	·485		甲十乙十丙十
羊蹄菜	4·689	·066	·028	1·027	4·624	鉀	
菜	·980	·042	·002	·192	·954		
菜	1·398	·017	·001	·027	·185		
菜	·522	·015	·001	·017	·137		
菜	·974	·022	·001	·072	·385		乙十丙o
莢筍	·990	·036	·002	·097	·550	鉀硫	甲十乙十丙十
苣瓜	2·205	·020	·004	·055	·336	鉀	甲十乙十丙十
瓜菜	1·879	·009	·002	·049	·250	鉀	
乾菜	12·752	·179	·026	·612	3·398	鉀	
菜	·480	·007	·001	·023	·129	鉀	
菜	1·170	·019	·002	·047	·282		
菜							
花菜							
頭豆菜	·479	·006	·001	·010	·073		
菜	·229	·011	·001	·029	·169	鉀硫	
菜	22·589	·316	·045	1·084	6·005		
筋							
筋							
耳菜							
尖							
南針菜							
結干貨	·860	·012	·002	·041	·230		
粉	·392	·002	·0002	·320	1·290		
日肉							
肉	19·252	2·580	4·659		52·251	鎂鉀鈉燐氯磺	甲十乙十丙十
肉	4·800	·689	·447		6·779	同　上	甲十乙十丙十
肉	2·772	·053	2·389		21·713	同　上	丙o
腿	·214	·030	·079		·031	同　上	甲十乙十丙十
	·056	·007	·015		·163		丙o
	1·181	·151	·017		·757	鎂鉀鈉燐氯磺	
	·527	·118	·012		·580		
臟	·114	·019	·057		·409		
肉	1·862	·149	·912		8·804		甲十乙十丙十
肉	·538	·049	·298		2·878		甲十乙十丙十
魚	7·043	1·317	·056	·085	6·112		甲o乙o丙o
魚	3·243	·344	·097		2·249	鉀燐疏羨氣鈣鈉	甲o乙o丙o
魚	1·666	·298	·013	·018	1·341		甲o乙o丙o
魚							
魚	·720	·135	·068	·009	1·188		甲o乙o丙o
魚							

一　平均每等成年男子每日食物的數量及其所得之營養素和發熱量 續

食品	數量	營養 蛋白質	營養 脂肪	營養素 碳水化物	燃料價值	無機鹽類	維生素
	克蘭姆	克蘭姆	克蘭姆	克蘭姆	卡羅里		
魚類							
鯉魚							
鱈魚							
麵魚							
長鮮魚							
其他鮮魚	5·893	1.061	.118	.071	5·590		甲○乙○丙○
鹹白魚	3·973	.421	.119		2·755		
淡鹹魚							
乾魚							
帶魚							
川魚							
黃魚							
鯊魚							
其他鹹魚	2·396	.254	.072	.024	1.760		
鮮蝦	.567	.144	.006	.001	.634	鐵	
鰣	1.854	.121	.007	.078	.359	鈣鉀鈉硫氯	
鮮蟹							
鹹蟹							
鹹蝦							
蚶毛	1.062	.069	.004	.045	.492	鈣鉀鈉硫氯	
其他介殼	1.821	.462	.018		2.010		
蝦米							
海蜇皮							
海參							
海鰣							
其他海味							
野味							
菜蛋							
鮮鴨蛋	4·247	.505	.397		5·593		甲卄乙卄丙○
鹹鴨蛋	.576	.076	.062		.862		
鮮雞蛋	.307	.036	.029		.405		甲卄乙卄丙○
皮蛋	.213	.028	.023		.319		
牛乳	.212	.006	.008	.010	.7 6		甲卄乙十丙十
奶粉	.130	.060	.036	.016	.628		甲十乙十丙十
調味品目							
豆油	27·367		27·367		246·303		
醬油	29·153	2.711		.991	14.868		
食鹽	15·051						
白糖	4·128			4·128	16·512		
豬油	1·057		1·057		9·513		甲卄
蔴油	·537		·537		4·833		
酒料	1·014						
赤糖	1·281			1·061	4·244		
生油	·423		·423		3·807		
醬							
醋							
味精							
菱粉							
其他調味	1·360	·004		·013	·068		
其他日							
西瓜	14·577	·029	·014	·394	1 818		
菁	·934	·049	·042	·231	1.878		
橘子	·326	·002	·0003	·038	·103		甲十乙十丙十十十
甘蔗	·643			·105	·420		
花生	1·795	·350	·522	·332	7·426	鉀燐硫鎂	甲十乙卄丙○
棗子	·710	·013	·018	·501	2·218	鉀氯	乙○
其他水果	11·731	·586	·469	1·408	12·197		

計算營養素成分說明

(1) 表中各種食品營養素的計算法，是根據 Sherman, H. C., Chemistry of Food and Nutrition, 1925, Appendix B, Table I and II, 及 Plimmer, V. G., and Plimmer, R. H. A., Vitamins and the Choice of Food, p. 144, Appendix, 1922. 二書。市上出售的食品，有全部可吃的如麵粉白糖豆油等，也有只吃一部份的，例如魚鱗肉骨香蕉皮等，都是不可以吃的。因此在計算營養素的時候，可以按可吃部份來計算，也可以按全部來計算。譬如有香蕉一隻，重 120 公分，其皮重 40 公分，那末可食部份不過 80 公分，照百分率來講，廢物佔百分之 33.3，可食部份佔百分之 66.7。此可食部份，經化學的分析，水佔 75.3，蛋白質佔 1.3，脂肪佔 0.6，碳水化物佔 22.0，灰份佔 0.8，共計 100.0。所以上述各營養素的成分，都應該乘 0.667，得結果如下：水 50.2，蛋白質 0.9 脂肪 0.4，碳水化物 14.7，灰分 0.5，共計 66.7。香蕉皮雖未始沒有營養的價值，不過既棄而不食，就可視爲廢物了。計算食物營養的成分，既有如上述可吃部份和全部的分別，而各種食物的市價，都不除去不可吃的部分，所以我們是依據全部分成份的分析來計算各種食品的營養成份。

(2) 我們所根據的計算食品營養成份的資料，有時感覺不敷應用，所以又引用兩個補充方法：(一)按相似食品的營養成分來計算，例如鴨蛋是按鷄蛋的成分來計算的；(二)集合同目中許多不重要的食物，按其對該目總費用的比例來推算他們的營養成份，例如米麵目中其他點心一項的營養成分，就是照此法計算。這兩種辦法，都是約略的估計，不免有牽强錯誤的地方，所幸在實際上用這種方法來推算的物品是很少，差誤的影響，亦就無足輕重了。

(3) 市上所用的權度單位，殊不一致，例如秤有天平會館磅秤之分，尺有裁尺部尺碼尺之別，斗有漕斛海斛之分。即以斤的單位而論，各業所用的斤，也是大小不一，例如切麵多用會館秤，蔬菜等又按天平秤計算，所以在計算營養成分的時候，一律先化成公分。據本局度量衡檢定所的調查，天平秤 1 斤=586.5 公分，會館 1 斤=527.9 公分，磅秤 1 磅(當衡)=453.6 公分。例如米店以足 200 磅爲 1 石，故米 1 斤，其重量若化爲公分時，當爲 907.2 公分($\frac{1}{100}\times200\times453.6=907.2$ 公分)。又如青菜 1.5 斤(天平)，其重量化爲公分時，當爲 879.75 公分 ($1.5\times586.5=879.75$ 公分)。

(4) 嚴格說起來，計算膳食的營養成分，應該按所吃的實在分量來計算，但是記賬家庭全年所購的食物量，是否等於他們所吃的實在分量？依據事實來講，這兩種分量是差不多的。因爲在記賬終了的那一天，工人所買的食物，不會完全消費了，在記賬開始的那天，他們也未始沒有一些食品留下來的，因此可以互相抵消，所以我們簡直就把所購的食物量，作爲所吃的量，況且在大量的平均中，求每等成年每天的食物量，其影響可說是微乎其微了。

(5) 食品中有不是單純一種質料所製成的，如餛飩潽粥月餅等。又餛飩有猪肉的蝦仁的，剖解分析，不勝其煩，所以遇到這種混合的食品，只能照他的主要成分歸類，去分析它的營養成分。這類的食品並不多，數目也不大，當不致有重大的影響。

二　含有維生素的幾種普通食品*

含有各種維生素的普通食物

食物	甲種維生素	乙種維生素	丙種維生素
白菜（生）	++	+	+++
白菜（熟）	+	+	++
馬鈴薯	+ 弱	+	+
嫩豆類	+	++	++
嫩穀類	+	++	++
牛乳	++	++	+
牛乳	++	+	+ 弱
肉	+	+	+
葡萄	+	+	+
番茄	+ 弱	+	+++
橘子	+ 弱	+	+++

富於甲種維生素的食物

牛乳油	+++	肝	++
魚肝油	++++	心	++
乳酪	++	青魚	++
卵黃	++	白菜（生）	++
小麥幼芽	++	蔴葉	++
牛羊脂肪	+	菠菜	++
魚油	++	粗粉麵包	+
		紅蘿蔔	+

富於乙種維生素的食物

卵黃	+++	魚肉	++
小麥幼芽	+++	亞麻子黍	++
酵母（乾）	+++	乾豆類	++
酵母	++++	乾果（如胡桃栗子等）	++
肝腦髓胰	+++		

富於丙種維生素的食物

白菜（生）	+++	豆芽	++
檸檬汁	+++	蔴	++
橘子汁	+++	生菜（如葱蒜等）	++
番茄	+++	白菜（煮半小時）	++
瑞典蘿蔔汁	+++	馬鈴薯	+
豆芽	++	大黃	+或+强

* 參閱 Plimmer V. G. and Plimmer, R. H. A., Vitamins and the Choice of Food, p. 144, Appendix B, 1922。

表中＋符號的多少，是表示維生素含量的豐富與否。

三　記賬家庭平均每家和每等成年全年購買用具量值的分析

用具類品目	單位	三〇家平均消費數量 每家	三〇家平均消費數量 每等成年	五家平均消費出 每家	五家平均消費出 每等成年	購買家數	對三〇五家的百分數	家庭平均每家消費數量	家庭平均每家消費支出
用具				$4.545	$1.385				
傢具				1.389	.423				
櫈子	隻	.072	.022	.273	.083	20	6.6	1.100	$4.174
橙椅子	隻	.148	.045	.076	.023	22	7.2	2.045	1.048
茶几	隻	.072	.022	.076	.023	14	4.6	1.571	1.638
鐘	隻	.013	.004	.030	.009	2	.7	2.000	4.500
檯燈	隻	.010	.003	.057	.017	3	1.0	1.000	5.767
燭台	副	.023	.007	.027	.008	7	2.3	1.000	1.155
香爐架	隻	.046	.014	.083	.025	14	4.6	1.000	1.829
照架	個	.043	.013	.020	.006	13	4.3	1.000	.459
衣架	隻	.020	.006	.013	.004	5	1.6	1.200	.766
花盆	隻	.007	.002	.001		2	.7	1.000	.107
花瓶	隻	.013	.004	.001		1	.3	4.000	.218
檯圖	條	.003	.001			1	.3	1.000	.071
玻璃桃子	隻	.003	.001	.010	.003	1	.3	1.000	3.200
床	張	.013	.004	.001		1	.3	4.000	.165
舖板	副	.043	.013	.445	.136	12	3.9	1.100	11.275
竹馬	副	.043	.013	.057	.017	11	3.6	1.182	1.386
便桶	隻	.007	.002	.002	.001	2	.7	1.000	.286
便壺	隻	.062	.019	.074	.023	19	6.2	1.000	1.194
衣箱	隻	.016	.005	.002	.001	5	1.6	1.000	.150
粧檯	隻	.036	.011	.097	.030	11	3.6	1.000	2.690
帳櫈	隻	.007	.002	.029	.009	2	.7	1.000	4.400
食具	套	.003	.001	.014	.004	1	.3	1.000	4.400
用具	件	.016	.005	.001		3	1.0	1.667	.067
伙用				1.450	.442				
菜籃	隻	.351	.107	.075	.023	74	24.3	1.446	.309
飯籃	隻	.174	.053	.048	.015	48	15.7	1.104	.307
淘籃子	隻	.154	.047	.041	.013	38	12.5	1.237	.332
米	把	.938	.286	.116	.035	238	78.0	1.200	.148
筷	隻	3.823	1.166	.374	.114	206	67.5	5.660	.557
碗	隻	.279	.085	.217	.066	68	22.3	1.250	.771
碟	把	.102	.031	.014	.004	33	9.2	1.143	.158
鍋蓋	個	.049	.015	.017	.005	12	3.9	1.250	.423
鍋刷	把	.026	.008	.003	.001	8	2.6	1.000	.123
火鉗	把	.030	.009	.009	.003	8	2.6	1.125	.328
切菜刀	個	.016	.005			5	1.6	1.000	.026
筷籠	隻	.393	.120	.008	.002	9	3.0	6.316	.123
是架	個	.030	.009	.002	.001	9	3.0	1.000	.054
碗帚	隻	.207	.063	.016	.005	16	5.2	3.938	.300
碟鍋	個	.089	.027	.003	.001	24	7.9	1.125	.035
洗鍋	把	.007	.002	.018	.005	2	.7	1.000	2.700
銅蓋	個	.016	.005	.029	.009	5	1.6	1.000	1.760
勺籠	把	.033	.010	.006	.002	10	3.3	1.000	.176
碗櫥	頂	.033	.010	.061	.019	10	3.3	1.000	1.863
盆架	隻	.030	.009	.002	.001	2	.7	4.500	.272
飯格	個	.049	.015	.047	.014	14	4.6	1.071	1.030
煤鍋	隻	.013	.004	.025	.008	4	1.3	1.000	1.913
菜板	塊	.010	.003	.003	.001	3	1.0	1.000	.275
行灶	隻	.023	.007	.009	.003	7	2.3	1.000	.404
火爐	座	.030	.009	.137	.042	9	3.0	1.000	4.636
灶頭	隻	.003	.001	.028	.009	1	.3	1.000	8.600
風爐	把	.089	.027	.018	.005	23	7.5	1.174	.233
水壺	把	.023	.007	.006	.002	7	2.3	1.000	.244
油壺	把	.010	.003	.002	.001	2	.7	1.500	.285
醬油瓶	個	.003	.001	.040		1	.3	1.000	.054
汽爐	隻	.010	.003	.040	.012	3	1.0	1.000	4.033
火柴爐	隻	.013	.004	.014	.004	4	1.3	1.000	1.077
鈴刀	把	.003	.001	.002	.001	1	.3	1.000	.653
風箱	隻	.013	.004	.004	.001	4	1.3	1.000	1.181
	隻	.003	.001	.005	.002	1	.3	1.000	1.400

三　記賬家庭平均每家和每等成年全年購買用具量值的分析（續）

用具類品目	單位	三〇家平均消費數量 每家	三〇家平均消費數量 每等成年	五家平均消費支出 每家	五家平均消費支出 每等成年	購買家數	對三〇五家的百分數	家庭每家平均消費數量	家庭每家平均消費支出
其用具	他			1.706	.520				.306
煤鑪	個	.007	.002	.001		2	.7	1.000	.217
鑪罩	隻	.020	.006	.002	.001	5	1.6	1.200	.118
鍋	隻	.016	.005			4	1.3	1.250	.019
桶	個	.010	.003	.001		2	.7	1.500	.105
刷	隻	.016	.005			2	.7	2.500	.026
針	隻	.003	.001	.001		1	.3	1.000	.176
球	個	.007	.002			1	.3	2.000	.036
針盒	根	.039	.012			1	.3	12.000	.007
撲繩	個	.033	.010	.001		9	3.0	1.111	.040
套梳篦子	隻	.157	.048	.017	.005	39	12.8	1.231	.129
缸	隻	.023	.007	.002	.001	6	2.0	1.167	.089
罩	面	.069	.021	.042	.013	20	6.6	1.050	.640
燈	隻	.007	.002			2	.7	1.000	.067
針	隻	1.613	.492	.065	.020	176	57.7	2.795	.113
傘	隻	.223	.068	.056	.017	58	19.0	1.172	.296
傘	把	1.200	.366	.006	.002	88	28.9	4.159	.021
傘	把	.200	.061	.264	.080	52	17.0	1.173	1.541
杯	把	.049	.015	.021	.006	14	4.6	1.071	.457
壺	隻	.003	.001	.014	.004	1	.3	1.000	4.333
杯	隻	.413	.126	.028	.009	37	12.1	3.405	.221
瓶	隻	.111	.034	.096	.029	33	10.8	1.030	.888
胆	隻	.111	.034	.003	.001	5	1.6	6.800	.173
項	隻	.118	.036	.132	.040	33	10.8	1.091	1.218
芯	個	.026	.008	.011	.003	6	2.0	1.333	.577
燈		.023	.007	.003	.001	7	2.3	1.000	.133
泡				.004	.001	14	4.6		.082
桶	隻	.026	.008	.006	.002	8	2.6	1.000	.215
瓶	隻	.030	.009	.009	.003	4	1.3	2.750	.679
嘴	隻	.013	.004	.001		4	1.3	1.000	.088
板	隻	.075	.023	.020	.006	19	6.2	1.211	.325
架	塊	.013	.004	.001		4	1.3	1.000	.102
車	個	.007	.002			2	.7	1.000	.031
腳	輛	.003	.001			1	.3	1.000	.067
車	輛	.003	.001	.020	.006	1	.3	1.000	5.000
杯	隻	.003	.001	.007	.002	1	.3	1.000	2.000
線袋				.001		1	.3	1.000	.300
瓶						1	.3		.037
腳	隻	.003	.001	.003	.001	1	.3	1.000	1.000
棒	隻	.013	.004	.001		3	1.0	1.333	.141
頭	隻	.003	.001	.002	.001	1	.3	1.000	.666
璃筒	根	.003	.001	.001		1	.3	1.000	.336
斗	個	.003	.001	.001		1	.3	1.000	.266
子	塊	.013	.004	.002	.001	3	1.0	1.333	.246
缸	個	.003	.001			1	.3	1.000	.041
刀	隻	.003	.001			1	.3	1.000	.018
桶	把	.003	.001	.002	.001	1	.3	1.000	.515
壺	隻	.066	.020	.044	.013	14	4.6	1.439	.953
水	把	.030	.009	.006	.002	8	2.6	1.135	.227
竿	隻	.154	.045	.071	.022	40	13.1	1.175	.539
刀	把	.043	.013	.021	.006	12	3.9	1.983	.540
剪	根	.092	.027	.006	.002	16	5.2	1.750	.110
尺	把	.071	.021	.012	.004	19	6.2	1.158	.190
	根	.020	.006	.005	.002	6	2.0	1.000	.276

用具類品目	單位	三〇家平均消費數量 每家	三〇家平均消費數量 每等成年	五家平均消費支出 每家	五家平均消費支出 每等成年	購買家數	對三〇五家的百分數	每家平均消費數量	每家平均消費支出
車	輛	.030	.009	$.073	$.022	9	3.0	1.000	$2.479
鑪	隻	.016	.005			5	1.6	1.000	.012
坐	隻	.016	.005	.030	.009	5	1.6	1.000	1.829
釘	把	.039	.012	.012	.004	10	3.3	1.200	.353
孩						5	1.6		.021
絲				.001		2	.7		.016
針	副	.013	.004	.003	.001	4	1.3	1.000	.229
盆	隻	.744	.227	.160	.049	214	70.2	1.061	.227
刷	隻	.866	.264	.099	.030	220	72.1	1.200	.137
刷	把	.298	.091	.022	.007	67	22.0	1.358	.102
帚	把	.600	.183	.039	.012	110	36.1	1.664	.108
帚	把	.134	.041	.004	.001	32	10.0	1.281	.040
箕	隻	.033	.010	.004	.001	9	3.0	1.111	.133
扇	隻	.092	.028	.008	.002	28	9.2	1.000	.092
扇	把	.452	.138	.022	.007	75	24.6	1.880	.008
盆	把	.010	.003	.005	.002	2	.7	1.500	.700
盆	隻	.046	.014	.061	.019	14	4.6	1.000	1.321
盂	隻	.016	.005	.029	.009	5	1.6	1.000	1.766
桶	隻	.043	.013	.026	.008	8	2.6	1.625	1.000
帚	隻	.007	.002	.004	.001	2	.7	1.000	.616
缸	個	.023	.007	.004	.001	6	2.0	1.167	.199
罩	隻	.007	.002	.002	.001	2	.7	1.000	.366
拍	個	.030	.009	.005	.002	8	2.6	1.125	.174
籃	個	.016	.005	.001		5	1.6	1.000	.059
杯	隻	.003	.001	.004	.001	1	.3	1.000	1.300
刷	隻	.003	.001	.002	.001	1	.3	1.000	.500
架	隻	.003	.001			1	.3	1.000	.101
棒	根	.003	.001	.001		1	.3	1.000	.400
帚	隻	.003	.001			1	.3	1.000	.067
竹	根	.007	.002			2	.7	1.000	.074
帚	把	.013	.004	.001		1	.3	4.000	.164
刀	把	.010	.003			3	1.0	1.000	.038
片	把	.016	.005	.004	.001	5	1.6	1.000	.251
香	把			.001		2	.7		.177
燈	根	.003	.001			1	.3	1.000	.067
架	隻	.016	.005	.002	.001	5	1.6	1.000	.128
刀	個	.003	.001	.001		1	.3	1.000	.247
拔	把	.007	.002			2	.7	1.000	.019
壺	個	.020	.006	.001		6	2.0	1.000	.071
箱	隻	.010	.003	.012	.004	3	1.0	1.000	1.248
搭	隻	.007	.002	.002	.001	2	.7	1.000	.315
箱	隻	.003	.001			1	.3	1.000	.033
笞	隻	.007	.002	.001		2	.7	1.000	.186
盆	個	.003	.001	.002	.001	1	.3	1.000	.509
箱	隻	.010	.003	.002	.001	3	1.0	1.000	.166
盒	隻	.003	.001	.001		1	.3	1.000	.161
叫	隻	.007	.002	.001		2	.7	1.000	.212
籃	隻	.003	.001	.001		1	.3	1.000	.167
子	隻	.003	.001	.001		1	.3	1.000	.339
子	隻	.007	.002	.001		1	.3	2.000	.314
鐵	隻	.007	.002	.001		1	.3	2.000	.436
夾	隻	.007	.002			1	.3	2.000	.014
夾	隻	.003	.001			1	.3	1.000	.067
包	隻	.013	.004	.006	.002	4	1.3	1.000	.484
開	隻	.007	.002	.001		2	.7	1.000	.097
皮	隻	.003	.001	.003	.001	1	.3	1.000	1.000
帶	隻	.003	.001	.002	.001	1	.3	1.000	.500
燈	隻	.007	.002	.003	.001	1	.3	2.000	1.000
條	隻	.003	.001			1	.3	1.000	.150
把	把	.007	.002	.003	.001	2	.7	1.000	.461
把	把	.010	.003	.002	.001	2	.7	1.000	.352
他	個	.003	.001	.002	.001	1	.3	1.000	.539
圈				.001		3	1.0		.091
具				.015	.005	18	5.9		251

四　平均每家全部用具的分析*

品目	數量	單位	購置家數	對二四家之百分數	平均每家所有件數	估計每件平均價值 原價	估計每件平均價值 先	估計每件平均價值 現在	平均每家所有傢俱價值
傢具類									$47.180
家具									26.798
竹梯	1	乘	1	4.17	.042	$1.500		$.750	.031
春凳	1	隻	1	4.17	.042	5.000		4.000	.167
火鑪	3	隻	2	8.33	.125	.967		.933	.117
提籃	2	隻	2	8.33	.083	.550		.500	.041
鈎帳	2	副	2	8.33	.083	.420		.395	.033
缸	9	隻	3	12.50	.375	.261		.239	.090
瓦罐	14	隻	3	12.50	.583	.429		.271	.158
床	9	隻	8	33.33	.375	11.400		8.256	3.096
手爐	1	隻	1	4.17	.042	1.500		1.000	.042
腳爐	3	隻	2	8.33	.125	.567		.167	.021
搖籃	3	隻	3	12.50	.125	1.467		1.200	.150
錫罐	2	隻	2	8.33	.083	1.800		.700	.058
茶几	1	隻	1	4.17	.042	2.000		1.000	.042
梳粧台	11	隻	5	20.83	.458	1.118		.664	.304
木桶	3	隻	3	12.50	.125	4.167		2.833	.354
擱几	10	隻	5	20.83	.417	.410		.240	.100
木板	5	隻	5	20.83	.208	8.000		5.400	1.123
自鳴鐘	7	隻	6	25.00	.292	4.743		3.357	.979
玻璃燈架	9	隻	9	37.50	.375	5.200		4.011	1.504
木鐘	4	隻	2	8.33	.167	1.625		1.450	.242
碗櫥	2	隻	2	8.33	.083	1.400		1.150	.095
水缸	4	隻	4	16.67	.167	1.750		.975	.163
竹椅	11	隻	11	45.84	.458	1.836		1.200	.550
小箱	15	隻	12	50.00	.625	.907		.660	.412
鉛桶	12	隻	8	33.33	.500	.354		.217	.108
小椅	1	隻	1	4.17	.042	.320		.240	.010
箱子	31	隻	11	45.84	1.292	2.665		1.110	1.433
桶床	22	隻	13	54.17	.917	.547		.311	.285
鋪板	1	隻	1	4.17	.042	1.000		.400	.017
鐵床	54	隻	24	100.00	2.250	3.411		2.233	5.024
木洋房用具	51	塊	15	62.50	2.125	.773		.553	1.175
廚房用具	122	隻	23	95.83	5.083	.631		.375	1.906
風爐	4	隻	2	8.33	.167	15.975		12.200	2.033
風箱	47	隻	23	95.83	1.958	3.780		3.313	4.529
油壺	30	隻	17	70.83	1.250	.443		.325	.406
麵杖									9.711
牛奶壺	1	隻	1	4.17	.042	.060		.060	.003
天秤	1	隻	1	4.17	.042	2.000		1.000	.042
煤球板	1	隻	1	4.17	.042	.500		.500	.021
砧籠	1	根	1	4.17	.042	.200		.200	.008
蒸籠	2	隻	2	8.33	.083	.375		.375	.031
筷桿	3	隻	2	8.33	.125	.123		.123	.015
熱水盤	2	隻	2	8.33	.083	.500		.250	.021
砂鍋	6	塊	6	25.00	.250	.317		.200	.050
錫壺	1	隻	1	4.17	.042	1.500		1.000	.042
子盤	4	隻	4	16.67	.167	.040		.035	.006
碟	8	隻	6	25.00	.333	1.188		.813	.271
磁碗	2	隻	2	8.33	.083	.350		.150	.013
茶杯	2	隻	1	4.17	.083	.400		.250	.021
酒壺	6	隻	4	16.67	.250	.683		.523	.131
飯碗	27	隻	4	16.67	1.125	.067		.056	.063
火缸	12	隻	2	8.33	.500	.192		.092	.046
水煙袋	1	隻	1	4.17	.042	1.000		.800	.033
杯盤	87	隻	9	37.50	3.625	.020		.017	.060
鉗壺	74	隻	5	20.83	3.083	.029		.024	.075
刀盆	12	隻	7	29.17	.500	.358		.211	.105
勺籮	14	把	13	54.17	.583	.209		.159	.093
米淘	10	隻	9	37.50	.417	1.530		1.020	.425
	8	把	6	25.00	.333	.519		.275	.092
	72	隻	11	45.84	3.000	.136		.100	.390
	11	隻	10	41.67	.458	.578		.389	.178
	15	隻	13	54.17	.625	.214		.134	.084
	18	隻	15	62.50	.750	.230		.126	.095

*根據二十四家抽查結果。

四　平均每家全部用具的分析（續）

品目	數量	單位	購置家數	對二四家之百分數	平均每家所有件數	估計每件平均值價 原先	估計每件平均值價 現在	平均每家所有家具價值
灶	3	隻	3	12.50	.125	$.420	$.233	$.029
籃子	34	隻	21	87.50	1.417	.192	.114	.161
桶盤	247	隻	21	87.50	10.292	.010	.006	.063
壺	2	隻	2	8.33	.083	1.000	.450	.038
杯	4	隻	3	12.50	.167	.290	.238	.040
碗	569	隻	24	100.00	23.708	.093	.077	1.823
茶	37	隻	22	91.67	1.542	.879	.646	.996
茶	98	隻	20	83.33	4.083	.076	.056	.230
茶	2	隻	2	8.33	.083	.225	.175	.015
飯	27	把	17	70.83	1.125	.142	.078	1.088
鍾	23	把	20	83.33	.958	.363	.239	.230
切	10	隻	10	41.67	.417	4.770	3.630	1.513
汽	56	隻	22	91.67	2.333	.944	.613	1.404
白	17	隻	13	54.17	.708	.907	.550	.390
飯鍋	29	隻	18	75.00	1.208	.524	.303	.367
生用								3.700
盆桶	1	隻	1	4.17	.042	.300	.200	.008
絲毛	1	隻	1	4.17	.042	4.000	3.000	.125
菜油鐵	2	桿	2	8.33	.083	.200	.125	.010
桶衣	4	隻	3	12.50	.167	.805	.705	.117
口用	1	把	1	4.17	.042	.100	.050	.002
面盆	7	隻	4	16.67	.292	.914	.786	.229
便	3	隻	3	12.50	.125	.167	.133	.017
刷	17	柄	10	41.67	.708	.106	.065	.046
盆	2	隻	2	8.33	.083	2.500	1.250	.104
燈	1	隻	1	4.17	.042	.600	.300	.013
帶	3	把	3	12.50	.125	.037	.030	.004
竹	27	根	9	37.50	1.125	.098	.053	.060
壺	7	隻	6	25.00	.292	.209	.106	.013
簞	17	隻	16	66.67	.708	.136	.085	.060
帶	18	把	17	70.84	.750	.081	.043	.032
刷	32	柄	15	62.50	1.333	.156	.084	.113
杯	8	隻	5	20.83	.333	.215	.144	.048
盆	35	隻	22	91.67	1.458	.581	.366	.533
桶	23	隻	21	87.50	.958	1.198	.654	.627
盆	42	隻	21	87.50	1.750	1.409	.866	1.521
具用								3.5994
針	2	隻	1	4.17	.083	.005	.005	.0004
缸	2	隻	2	8.33	.083	.090	.045	.004
圈	2	隻	2	8.33	.083	5.750	7.250	.604
指箱	3	隻	3	12.50	.125	12.133	18.000	2.250
子	7	隻	7	29.17	.292	1.629	.964	.281
梳	18	隻	9	37.50	.750	.145	.077	.058
子	21	隻	9	37.50	.875	.149	.089	.078
具	20	面	14	58.33	.833	.580	.389	.324
他用								3.372
帽	2	把	1	4.17	.083	.620	.380	.032
筒	2	隻	1	4.17	.083	.600	.600	.050
拔	2	隻	1	4.17	.083	.100	.050	.004
台	2	隻	1	4.17	.083	.100	.100	.008
架	4	隻	1	4.17	.167	1.125	.675	.113
刀	1	把	1	4.17	.042	.200	.100	.004
軋	2	隻	1	4.17	.083	.065	.035	.003
磨	1	隻	1	4.17	.042	2.000	2.000	.083
扇	1	把	1	4.17	.042	.160	.160	.007
尺	6	桿	5	20.83	.250	.038	.027	.007
籃	3	隻	3	12.50	.125	.253	.140	.018
鎖	5	把	2	8.33	.208	.180	.180	.038
像刀	2	具	2	8.33	.083	.270	.270	.023
鑷	10	把	6	25.00	.417	.206	.139	.058
爐	3	隻	2	8.33	.125	3.767	2.167	.271
燈	12	隻	7	29.17	.500	.789	.606	.303
瓶	10	隻	5	20.83	.417	1.380	.930	.388
台	19	隻	10	41.67	.792	1.374	1.074	.850
傘	38	副	19	79.17	1.583	1.163	.671	1.063
瓶	38	隻	8	33.33	1.583	.033	.035	.049

五　記賬家庭平均每家及每等成年全年購買飾物量值的分析

飾物類品目	單位	三〇家庭平均每家消費數量 每家	三〇家庭平均每家消費數量 每等成年	五家平均每家消費支出 每家	五家平均每家消費支出 每等成年	購買家數	三〇家對五家之百分比	家庭平均每家消費數量	家庭平均每家消費支出
飾物類				$.830	$.253				
錶	隻	.036	.011	.088	.027	10	3·3	1.100	$2.690
耳環	副	.118	.036	.220	.067	29	9·5	1.241	2.311
指鐲	副	.023	.007	.148	.045	6	2.0	1.167	7.512
鐲	個	.043	.013	.102	.031	13	4·3	1.000	2.384
圈	個	.003	.001	.007	.002	1	·3	1.000	2.420
片	個	.003	.001	.011	.003	1	·3	1.000	3·400
鈴耳飾	隻	.030	.009	.082	.025	9	3·0	1.000	2.762
扣錬	條	.010	.003	.021	.006	3	1.0	1.000	2.173
袋珠	隻	.007	.002	.037	.011	2	·7	1.000	5.650
牙叉鐲	串	.003	.001	.016	.005	1	·3	1.000	5.000
飾	隻	.006	.002	.022	.007	1	·3	2.000	6.600
鈕	隻	.010	.003	.008	.002	2	·7	1.500	1.271
錢	隻	.010	.003	.011	.003	3	1.0	1.000	1.163
金	隻	.003	.001			1	·3	1.000	.099
髮	隻	.026	.008	.034	.010	5	1.6	1.600	2.080
髮	隻	.066	.020	.005	.002	10	3·3	2.000	.162
扉	隻	.007	.002	.005	.002	2	·7	1.000	.800
兒銀飾				.010	.003	1	·3		3·900
小軋頭				.001		1	·3		.168
別針	隻	.007	.002	.001		1	·3	2.000	.264
	隻	.003	.001	.001		1	·3	1.000	.164

六　上海市工人生活費指數 民國十五年至二十二年

民國十五年＝100

時期	食物	房租	衣着	燃料	雜項	總指數	銀元購買力	比十五年全年平均增(+)或減(−)之分數
民國十五年 1926	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
民國十六年 1927	100.71	97.98	98.82	109.06	102.23	101.09	98.92	− 1.08
民國十七年 1928	87.32	100.11	99.64	110.23	114.00	93.21	107.28	+ 7.28
民國十八年 1929	97.56	103.80	106.04	117.61	117.78	101.98	98.06	− 1.94
民國十九年 1930	114.99	106.96	108.18	140.47	126.84	116.79	85.62	−14.38
民國二十年 1931	104.10	114.46	123.58	164.62	138.37	113.82	87.86	−12.14
民國二十一年 1932	96.89	117.18	124.17	160.93	127.86	108.05	92.55	− 7.45
一月 Jan.	105.96	117.18	136.73	165.01	140.02	116.03	86.18	−13.82
二月 Feb.	111.82	117.18	135.78	167.30	140.99	120.22	83.18	−16.82
三月 Mar.	103.77	117.18	133.18	165.85	133.14	113.88	87.81	−12.19
四月 Apr.	96.54	117.18	129.15	157.41	131.10	108.01	92.58	− 7.42
五月 May	97.85	117.18	129.50	151.93	124.71	107.92	92.66	− 7.34
六月 June	103.40	117.18	125.00	159.25	125.78	112.17	89.15	−10.85
七月 July	98.07	117.18	122.27	165.29	124.13	108.79	91.92	− 8.08
八月 Aug.	101.33	117.18	121.45	163.11	124.03	110.78	90.27	− 9.73
九月 Sep.	92.81	117.18	117.30	162.21	122.87	104.70	95.51	− 4.49
十月 Oct.	92.82	117.18	110.66	155.84	121.95	103.89	96.26	− 3.74
十一月 Nov.	81.46	117.18	114.45	155.79	127.03	96.80	103.31	+ 3.31
十二月 Dec.	82.91	117.18	111.61	164.73	128.49	98.50	101.52	+ 1.52
民國二十二年 1933	83.47	123.53	102.84	142.43	123.59	97.17	102.91	+ 2.91
一月 Jan.	89.16	123.53	111.73	163.28	129.60	103.48	96.64	− 3.36
二月 Feb.	90.65	123.53	111.14	153.27	124.22	103.22	96.88	− 3.12
三月 Mar.	87.08	123.53	103.55	157.18	125.48	100.94	99.07	− .93
四月 Apr.	80.79	123.53	105.33	147.79	124.85	95.97	104.20	+ 4.20
五月 May	81.65	123.53	102.49	137.34	124.22	95.59	104.61	+ 4.61
六月 June	80.66	123.53	104.74	132.81	119.77	94.26	106.09	+ 6.09
七月 July	83.53	123.53	104.27	132.59	120.40	96.22	103.93	+ 3.93
八月 Aug.	82.84	123.53	105.81	131.58	118.36	95.55	104.66	+ 4.66
九月 Sept.	82.19	123.53	102.84	133.37	124.22	95.66	104.54	+ 4.54
十月 Oct.	85.75	125.53	91.47	137.62	119.48	97.56	102.50	+ 2.50
十一月 Nov.	80.42	123.53	100.00	136.95	119.82	94.25	106.10	+ 6.10
十二月 Dec.	75.40	123.53	94.08	138.46	124.27	91.15	109.71	+ 9.71

七 上海市零售物價 民國二十一年至二十二年

品名	食物															
	粳米	秈米	糯米	麵粉	切麵	豆腐	豆腐乾	百頁	油豆腐	發芽豆	綠粉	黃豆芽	鹹雪菜	青菜	白蘿蔔
單位	石	石	石	包	斤	塊	塊	張	斤	斤	斤	斤	斤	斤	斤
民國二十一年	$10.300	$ 9.595	$11.816	$ 2.818	$ .070	$ .0070	$ .0070	$ .0051	$ .295	$ .057	$ .059	$ .038	$ .049	$ .036	$ .034
一月	10.795	10.934	11.877	2.663	.075	.0075	.0075	.0057	.328	.067	.069	.044	.050	.052	.027
二月	11.488	11.488	12.333	2.975	.075	.0075	.0075	.0056	.320	.064	.064	.044	.046	.063	.026
三月	11.418	10.985	12.484	2.870	.069	.0069	.0069	.0052	.301	.062	.061	.045	.047	.040	.024
四月	11.210	10.530	12.633	3.006	.069	.0069	.0069	.0052	.289	.058	.063	.039	.046	.016	.024
五月	11.417	10.793	12.926	2.973	.063	.0068	.0063	.0051	.298	.054	.057	.035	.044	.020	.034
六月	11.887	10.586	13.280	2.836	.063	.0068	.0063	.0049	.312	.053	.055	.035	.043	.044	.039
七月	11.021	9.996	12.703	2.681	.063	.0068	.0063	.0049	.312	.056	.055	.034	.049	.037	.041
八月	10.817	9.428	12.869	2.835	.063	.0063	.0063	.0049	.276	.057	.054	.036	.052	.047	.057
九月	9.783	8.390	12.539	2.835	.067	.0067	.0067	.0050	.284	.056	.055	.035	.048	.033	.050
十月	8.867	7.587	11.186	2.724	.067	.0067	.0067	.0049	.280	.053	.056	.034	.050	.026	.034
十一月	7.612	7.075	8.681	2.680	.070	.0070	.0070	.0051	.262	.054	.060	.034	.053	.022	.023
十二月	7.244	7.343	8.225	2.737	.072	.0072	.0072	.0052	.279	.055	.060	.036	.054	.033	.026
民國二十二年	7.567	7.679	8.916	2.425	.061	.0066	.0066	.0048	.255	.050	.052	.032	.054	.036	.031
一月	7.987	8.091	9.512	2.905	.073	.0073	.0073	.0053	.283	.058	.061	.036	.055	.043	.026
二月	8.418	8.845	10.254	2.652	.068	.0068	.0068	.0049	.266	.053	.055	.033	.049	.048	.023
三月	7.776	8.193	9.164	2.561	.067	.0066	.0066	.0048	.262	.051	.054	.034	.051	.036	.019
四月	7.251	7.618	8.901	2.487	.066	.0066	.0066	.0047	.254	.049	.054	.031	.054	.020	.018
五月	7.524	7.715	9.083	2.453	.059	.0064	.0064	.0046	.250	.045	.051	.029	.043	.033	.022
六月	7.300	7.655	8.941	2.417	.057	.0063	.0063	.0046	.250	.050	.051	.030	.045	.035	.039
七月	7.504	7.744	8.874	2.366	.057	.0063	.0063	.0046	.242	.049	.049	.030	.048	.039	.047
八月	7.524	7.585	8.699	2.315	.055	.0063	.0063	.0046	.247	.051	.048	.031	.054	.040	.039
九月	7.423	7.408	8.414	2.276	.057	.0064	.0064	.0047	.242	.048	.049	.031	.064	.038	.050
十月	7.732	7.235	9.093	2.137	.059	.0066	.0066	.0048	.250	.049	.050	.033	.070	.053	.039
十一月	7.323	7.098	8.342	2.262	.057	.0066	.0066	.0048	.257	.046	.050	.031	.059	.035	.029
十二月	7.044	6.963	7.716	2.269	.059	.0068	.0063	.0049	.259	.048	.052	.031	.051	.016	.024

七 上海市零售物價 民國二十一年至二十二年 續

品名	食物														
單位	洋山芋 斤	韭菜 斤	菠菜 斤	鮮豬肉 斤	鮮牛肉 斤	鹹豬肉 斤	鷄(活) 斤	鮮鰣魚 斤	鮮魚 斤	鹹白魚 斤	鮮鴨蛋 個	豆油 斤	醬油(雙套) 斤	豬油 斤	食鹽 斤
民國二十一年	$ .042	$ .078	$ .047	$ .370	$ .309	$ .307	$ .451	$ .376	$ .180	$ .163	$ .027	$ .169	$ .083	$ .374	$ .071
一月	.061	.242	.058	.366	.327	.260	.462	.313	.179	.213	.032	.155	.086	.405	.071
二月	.051	.181	.047	.467	.285	.289	.437	.330	.175	.209	.031	.164	.084	.467	.065
三月	.050	.092	.032	.388	.329	.289	.500	.293	.197	.205	.028	.166	.084	.388	.068
四月	.052	.050	.017	.388	.341	.230	.469	.283	.162	.180	.027	.159	.085	.388	.059
五月	.049	.034	.027	.370	.341	.321	.503	.310	.154	.175	.026	.161	.083	.370	.064
六月	.039	.044	.051	.375	.334	.349	.453	.502	.149	.152	.025	.167	.083	.369	.066
七月	.029	.042	.051	.349	.303	.328	.473	.398	.154	.156	.025	.171	.082	.353	.067
八月	.033	.070	.051	.355	.298	.370	.468	.515	.194	.156	.026	.189	.083	.346	.079
九月	.035	.044	.099	.351	.291	.290	.452	.445	.176	.147	.026	.180	.082	.344	.078
十月	.034	.045	.050	.352	.287	.319	.425	.434	.218	.147	.026	.169	.080	.352	.078
十一月	.036	.044	.034	.338	.284	.324	.389	.401	.210	.150	.027	.173	.081	.342	.079
十二月	.035	.044	.048	.345	.293	.312	.382	.285	.188	.128	.028	.178	.081	.361	.080
民國二十二年	.030	.051	.040	.313	.263	.327	.395	.423	.192	.140	.024	.171	.090	.326	.082
一月	.034	.044	.057	.336	.306	.298	.446	.404	.206	.150	.029	.180	.084	.350	.080
二月	.038	.044	.051	.319	.283	.300	.408	.417	.208	.137	.027	.182	.082	.332	.077
三月	.032	.102	.035	.316	.280	.283	.421	.426	.259	.135	.026	.185	.086	.336	.081
四月	.030	.045	.023	.308	.271	.304	.407	.358	.224	.131	.023	.202	.091	.312	.083
五月	.030	.031	.020	.323	.261	.320	.425	.362	.146	.127	.023	.195	.090	.336	.082
六月	.028	.037	.028	.310	.269	.364	.433	.458	.121	.124	.023	.177	.088	.323	.076
七月	.028	.046	.037	.308	.265	.371	.394	.458	.143	.127	.022	.194	.092	.327	.080
八月	.026	.040	.037	.312	.256	.426	.377	.488	.166	.141	.022	.162	.091	.324	.078
九月	.027	.041	.055	.304	.254	.369	.373	.469	.218	.137	.022	.167	.094	.315	.080
十月	.030	.052	.076	.312	.259	.321	.387	.424	.221	.148	.023	.133	.094	.311	.083
十一月	.029	.050	.035	.301	.254	.305	.351	.418	.208	.157	.025	.139	.096	.322	.092
十二月	.028	.083	.026	.303	.259	.257	.317	.399	.185	.165	.025	.130	.093	.321	.094

七 上海市零售物價 民國二十一年至二十二年 續

品名	食物	房租			衣									著		
	白糖三五溫	樓房石庫門	樓房東洋式	平房	粗布十三磅	細布十二磅	條格布	花標布	漂布	土布	線呢	絨布	斜紋布	棉花	男綫襪四十二支
單位	斤	間	間	間	尺	尺	尺	尺	尺	尺	尺	尺	尺	斤	雙
民國二十一年	$ .202	$3.272	$2.271	$2.343	$ .100	$ .122	$ .071	$ .135	$ .153	$ .058	$ .197	$ .143	$ .123	$ .604	$ .420
一月	.163	3.272	2.271	2.343	.100	.132	.077	.148	.162	.055	.221	.235	.134	.622	.420
二月	.167	3.272	2.271	2.343	.110	.131	.074	.148	.165	.055	.209	.235	.148	.622	.420
三月	.170	3.272	2.271	2.343	.108	.139	.072	.141	.168	.067	.227	.130	.142	.622	.420
四月	.207	3.272	2.271	2.343	.104	.128	.070	.141	.160	.067	.221	.130	.131	.622	.420
五月	.209	3.272	2.271	2.343	.101	.131	.071	.141	.157	.068	.218	.135	.129	.622	.420
六月	.208	3.272	2.271	2.343	.101	.124	.073	.136	.161	.057	.196	.130	.123	.622	.420
七月	.216	3.272	2.271	2.343	.094	.119	.073	.128	.149	.061	.194	.132	.117	.622	.420
八月	.218	3.272	2.271	2.343	.099	.119	.071	.132	.153	.051	.189	.122	.118	.622	.420
九月	.217	3.272	2.271	2.343	.095	.113	.067	.133	.125	.055	.173	.151	.113	.622	.420
十月	.216	3.272	2.271	2.343	.094	.105	.064	.121	.141	.046	.162	.105	.103	.622	.420
十一月	.215	3.272	2.271	2.343	.096	.114	.067	.127	.145	.052	.180	.104	.109	.512	.420
十二月	.219	3.272	2.271	2.343	.095	.104	.067	.125	.152	.062	.169	.101	.108	.517	.420
民國二十二年	.214	3.276	2.529	2.395	.085	.098	.065	.119	.148	.053	.161	.099	.097	.511	.314
一月	.228	3.276	2.529	2.395	.091	.111	.073	.130	.158	.052	.178	.098	.109	.497	.333
二月	.230	3.276	2.529	2.395	.091	.109	.070	.128	.161	.054	.172	.105	.106	.525	.340
三月	.228	3.276	2.529	2.395	.086	.101	.062	.120	.150	.053	.151	.102	.099	.525	.338
四月	.222	3.276	2.529	2.395	.085	.103	.064	.123	.147	.051	.167	.103	.098	.525	.322
五月	.212	3.276	2.529	2.395	.086	.098	.063	.116	.147	.049	.155	.108	.096	.525	.330
六月	.211	3.276	2.529	2.395	.087	.105	.067	.111	.138	.058	.165	.108	.102	.525	.302
七月	.210	3.276	2.529	2.395	.088	.098	.065	.118	.153	.050	.165	.101	.101	.525	.319
八月	.203	3.276	2.529	2.395	.086	.095	.064	.128	.154	.066	.164	.108	.100	.525	.334
九月	.206	3.276	2.529	2.395	.085	.098	.066	.120	.148	.054	.162	.099	.095	.525	.292
十月	.212	3.276	2.529	2.395	.075	.080	.059	.104	.139	.054	.142	.083	.082	.525	.279
十一月	.205	3.276	2.529	2.395	.084	.092	.072	.116	.146	.045	.156	.090	.091	.467	.296
十二月	.204	3.276	2.529	2.395	.081	.087	.060	.114	.140	.048	.149	.080	.089	.443	.292

七 上海市零售物價 民國二十一年至二十二年 續

品名	燃料								雜項							
	小子煤	煤油	劈柴	廢木柴	花箕柴	稻柴	火柴 鳳凰牌	炭 溫州	肥皂 固本	草紙	香烟 金鼠牌	黃酒	高粱	茶葉	開水
單位	斤	斤	担*	斤	斤	斤	匣	簍	塊	刀	盒	斤	斤	斤	十約
民國二十一年	$ .017	$ .143	$ .053	$ .014	$ .0103	$ .0073	$ .0104	$ .966	$ .065	$ .076	$ .051	$ .083	$ .127	$ .332	$ .017
一月	.018	.146	.055	.014	.0104	.0082	.0110	.995	.067	.084	.057	.094	.128	.332	.019
二月	.017	.155	.055	.014	.0107	.0071	.0110	.980	.063	.084	.061	.083	.118	.332	.019
三月	.018	.148	.055	.014	.0110	.0070	.0104	1.050	.064	.083	.056	.085	.127	.332	.017
四月	.017	.138	.055	.014	.0099	.0056	.0102	.981	.066	.072	.054	.081	.135	.332	.017
五月	.017	.129	.055	.013	.0102	.0062	.0103	.950	.064	.071	.048	.083	.129	.332	.017
六月	.017	.136	.054	.015	.0102	.0063	.0102	.965	.064	.072	.048	.088	.130	.332	.017
七月	.018	.142	.054	.015	.0117	.0078	.0103	.968	.064	.072	.048	.082	.124	.332	.017
八月	.016	.142	.054	.015	.0107	.0081	.0102	.946	.063	.076	.048	.081	.124	.332	.017
九月	.015	.135	.052	.014	.0141	.0117	.0101	.965	.063	.075	.047	.078	.128	.332	.017
十月	.016	.137	.050	.014	.0112	.0071	.0101	.922	.063	.072	.047	.078	.121	.332	.017
十一月	.016	.145	.049	.014	.0089	.0059	.0104	.946	.064	.075	.051	.081	.125	.332	.017
十二月	.015	.158	.050	.015	.0100	.0062	.0107	.925	.064	.073	.050	.083	.129	.332	.018
民國二十二年	.015	.113	.050	.015	.0088	.0049	.0099	.920	.060	.072	.048	.079	.132	.332	.017
一月	.016	.147	.050	.016	.0101	.0062	.0110	.925	.065	.075	.051	.080	.133	.332	.018
二月	.015	.132	.054	.015	.0086	.0051	.0101	.977	.061	.073	.050	.078	.119	.332	.017
三月	.016	.127	.056	.017	.0086	.0047	.0100	.973	.061	.074	.050	.083	.122	.332	.017
四月	.015	.115	.053	.016	.0093	.0048	.0098	.959	.061	.073	.049	.087	.136	.332	.016
五月	.015	.102	.049	.015	.0094	.0047	.0096	.932	.059	.070	.048	.088	.143	.332	.016
六月	.014	.099	.050	.014	.0088	.0046	.0095	.904	.059	.067	.047	.078	.128	.332	.016
七月	.014	.099	.047	.015	.0081	.0043	.0095	.913	.059	.070	.047	.076	.136	.332	.016
八月	.015	.103	.048	.013	.0080	.0048	.0095	.927	.059	.068	.046	.072	.133	.332	.016
九月	.015	.105	.049	.013	.0085	.0049	.0096	.895	.059	.075	.046	.090	.155	.332	.016
十月	.014	.105	.048	.015	.0089	.0055	.0099	.867	.060	.073	.046	.070	.126	.332	.017
十一月	.014	.104	.049	.015	.0086	.0049	.0099	.894	.059	.070	.046	.073	.127	.332	.017
十二月	.015	.112	.048	.014	.0088	.0046	.0102	.875	.061	.071	.050	.075	.126	.332	.017

* 約 36 市斤。

上海市政府社會局

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上海市工人生活程度*	
上海市工資制度調查*	在編製中

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† 上海福州路大東書局出版

†† 上海河南路商務印書館出版

* 上海福州路中華書局出版

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† Obtainable at Dah Tung Book Co., Foochow Road, Shanghai.

†† Obtainable at Commercial Press, Ltd., Honan Road, Shanghai.

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中國經濟學社中日貿易研究所專刊之一

中日貿易統計

蔡正雅陳善林等

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T. Y. TSHA, Z. L. CHEN AND OTHERS

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This present publication, based upon the materials gathered from the Customs Reports and the statistics published by the Department of Finance, Japan, consists of a comparative study of China's foreign trade with its recent developments, a detailed treatment of the method of classification and the principal commodity imports and exports, the influence of the Manchurian Affair upon the Sino-Japanese Trade, the index numbers of seasonal fluctuations, and other subjects. A set of tables, illustrated by charts, is included to present the figures in full. At the beginning of the book, a review of the outstanding facts is given in the synopsis, which might be helpful to those who do not have the time to go through the whole book.

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