

## The Price and Consumption of Salt in China in 1901

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### *Aim and Abstract*

The aim of this paper is to investigate the price of salt in China in 1901, at the end of the Ch'ing, to see whether it was a real economic hardship to the poor, or not. The paper provides details of the actual cash retail price of salt over most of China, and compares these prices with the daily wage rates for a coolie (an unskilled labourer) and the retail price of rice, to elucidate the real cost of the salt to the poor, and then goes on to see to what degree the consumption of salt reflects this real cost. The findings suggest that the retail price of salt was, in fact, reasonable over a great deal of China, and caused real economic hardship mostly in the Yangtse Valley and the west of China<sup>1</sup>.

### *Introduction: the 1906 Report on Salt Production and Taxation in China*<sup>\*</sup>

On 6<sup>th</sup> March 1901, the Deputy Inspector-General of the Chinese Imperial Maritime Customs, Robert (later Sir Robert) Bredon wrote to all the Commissioners of Customs at the various Treaty Ports in China ordering them to prepare full Reports on the salt trade in the areas under their purview, for his information and further action. These Reports were duly received, and it was eventually ordered that they be printed as an Archive Document of the Customs, as *China Imperial Maritime Customs, V, Office Series: Customs Papers No 81: Salt: Production and Taxation*, printed by the Statistical Department of the Inspectorate General of Customs, Shanghai, 1906 (hereafter *1906 Salt Report*)<sup>2</sup>.

This initiative of the Imperial Maritime Customs took place in the immediate aftermath of the Boxer Rebellion, and probably as a direct consequence of the Rebellion.

The Chinese Maritime Customs were, in 1901, under foreign management and control, as they had been since 1861, and as they were to continue to be until 1949. At the end of the Second Anglo-Chinese (Opium) War, in 1861, the Chinese Government had been obliged to pay the Western Powers an Indemnity. To ensure that payment of the Indemnity was conducted smoothly, the Chinese Government agreed to use the customs revenues to pay the Indemnity, and to have the Customs run by foreigners until the Indemnity was fully paid. Every place in China where foreigners were permitted to do business (the Treaty Ports) had an Imperial Maritime Customs office to control and take revenue from the import-export trade conducted there: these Customs offices were supervised by Regional Commissioners who in turn reported to the Inspector-General. After the Taiping Rebellion was crushed (1864), the Chinese Government was never far

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from insolvency. It kept going in part by taking out international loans. Many of these loans were secured on the customs revenue. The 1861 Indemnity, and these subsequent loans, were never fully paid off, and so the Maritime Customs remained under foreign management.

In 1900 the Boxer Rebellion had led to massacres of foreigners and Chinese Christians, and a full-scale siege of the Legation Quarter in Peking. The siege was lifted in August 1900, when the Court fled from Peking in the face of an impending attack by a relieving army drawn from all the Western Powers. It was immediately apparent that the Western Powers would require another Indemnity, and it was at least quite widely seen as possible that the Chinese Government would have to guarantee this Indemnity by the salt revenues, and that the Salt Administration would have to be put under foreign management in consequence, along the lines agreed forty years earlier for the customs revenues, to ensure that revenue was maximised and efficiency optimised.

The Indemnity was in due course agreed by the Chinese Government (December 1901). While the Chinese Salt Administration was not, in the event, to be put under foreign management until 1913, the initiative of Robert Bredon in March 1901, in asking for as full a series of Reports on the salt trade as possible, is probably to be explained by an assumption that it would be, and that the more information the Imperial Maritime Customs had on the trade the better prepared it would be when the decision to hand the Salt Monopoly over to foreign management and control was made. Certainly, this was the assumption made by at least some of the Customs Commissioners: H.E. Wolf, writing to the Wuhu Commissioner<sup>3</sup>, (see Maps 1 and 2 for places mentioned in the text) made some suggestions for reform of the salt trade “if the Customs are now called on to take over ... the salt administration”, and again, “when once we actually handle the salt”. Furthermore, even if the decision was eventually taken that the Salt Monopoly was not to be passed over into foreign management, the Reports sent in would at least enable the Imperial Maritime Customs to make informed suggestions for reforms; reforms very widely seen as urgent in the early twentieth century.

The *1906 Salt Report* is a 349 page volume. It is very much an archive production. It includes all the Reports received from the individual Customs Commissioners, but includes no analysis or discussion of them, leaving them as raw archival material. The Reports vary greatly in depth and detail (from two pages, as at Yatung, to eighty, as at Wuhu), but generally contain a vast wealth of detail on the workings of the Chinese Salt Monopoly at the start of the twentieth century, before any reforms of the traditional Salt Administration had begun to be introduced.

In most cases, the customs staff who prepared the Reports did so by consulting Chinese books and official texts on or about the salt administration of their area, but predominantly by interviews with serving and retired Salt Monopoly officials, salt-merchants, and other knowledgeable contacts. As the author of the Newchwang (Yingkou) Report said, after getting what information he could from official sources, “The only way by which knowledge of the subject could be obtained was to question the small salt-shops in the town, and the owners of the salt pans”, or, as the writer of the

Tientsin Report said, (after noting that official information was difficult to obtain, the local salt-records having been burnt, and the salt-officials having fled, during the Boxer Rebellion), “The data I give rest entirely on information privately obtained”.

Some of the statistics produced were “informed guesses”, since some of the most important information did not, at that date, exist in usable formats, but, in most cases, the statistics produced, despite certain systemic problems discussed further below, and an inevitable variation in quality from Report to Report<sup>4</sup>, seem generally broadly accurate, and capable of meaningful analysis. In this respect, it should be noted that the Customs staff who prepared the Reports were highly intelligent men, mostly long resident in the districts which they were reporting on, and that they were, above all, men accustomed to working with statistics and dealing with figures. While many of the Reports stress the impressionistic nature of the statistical information they contain, and urge care in their handling, they are at worst the guesses of educated and experienced men well acquainted with the areas being reported on. At the very least, the statistics included would have been in accord with the “gut feelings” of the writers: as the writer of the Tientsin Report said, “I can only say that I believe the figures ... are near the truth”.

Since the Inspectorate-General had specifically required in March 1901 that the Reports include details of the wholesale and retail price of salt, and the consumption of salt per head, within each of the Customs areas, this information is particularly susceptible of analysis, and this Note attempts to provide a first step towards such an analysis.

#### *Problems of the Statistics: The Currency*

It should be noted that analysis of this material faces four basic, systemic, problems with regard to the price of salt. The first is that the Reports, where they give figures for prices, do not always make it clear if the prices have been adjusted to the standard tael.

Traditionally, China had had only one minted coin, the copper cash, and used silver bullion (sycee) for all large-scale transactions. This silver bullion was weighed in accordance with scales which differed from place to place. The basic weight for silver was the tael (兩), which could vary by weight by up to about 6% from place to place, and which was divided into mace (錢, one-tenth of the tael) and candareen (分, one-hundredth of the tael). Furthermore, the purity of the silver (the ‘touch’) taken as standard in each locality differed, from 1.0 fineness (100% fine) to as low as 0.916 (91.6% fine)<sup>5</sup>. This meant that the tael, taken as a measure of pure silver, could vary by up to about 17% from place to place.

The foreigners, when they first started to trade on the coasts of China, were restricted to Canton, and consequently conducted their business through the medium of the Canton tael. This was a tael of a pure (1.0 standard) ‘touch’ of silver, weighing very close to 1½ Sterling ounces avoirdupois. In the eighteenth century, the foreigners used predominantly Spanish Carolus dollars as silver bullion: these dollars weighed 0.96

Sterling ounces avoirdupois (to the nearest one-hundredth of an ounce), and were of a purity of silver identical with the Chinese 1.0 standard 'touch'. These dollars were found to be worth 1,000 copper cash, so that one Sterling ounce avoirdupois of 1.0 'touch' silver was worth 1041.6 cash. These Canton monetary exchange rates thus firmed at 1,000 cash to the dollar, the dollar being worth 0.72 of a tael (to the nearest percentage point), which implied the tael being worth 1388 cash. These exchange rates remained extremely stable throughout the nineteenth century in Canton and Hong Kong<sup>6</sup>.

From the 1860s, the central Chinese Imperial authorities established two standard taels, by which they would weigh silver bullion presented to them in tax or other payments. One of these was the Customs (Haikuan, 海關) tael. This was identical with the Canton silver tael, based on 1000 cash to the dollar of 0.96 Sterling ounces (by this date the dollars were Mexican dollars, usually called "Dollars Mex", and Hong Kong dollars, both identical in weight and fineness with the older Carolus dollars, with, from the late 1880s, Chinese silver dollars, again of the same weight and fineness), and with the dollar representing 72% of the Haikuan tael, which therefore was worth 1388 standard copper cash<sup>7</sup>. The Chinese Imperial Maritime Customs used this scale for weighing all silver submitted to it for payment of customs dues, assessing the fineness of the silver as presented, and then adjusting the figure to the equivalent Haikuan tael figure. The other central Government tael was the Board of Revenue tael (the Ku-ping, 庫秤, or 庫平, tael). This tael was used for all other payments made to the central authorities other than the Customs dues. It was also based on the Canton exchange rates, on a 'touch' of 1.0, and on a rate of exchange of 1,000 copper cash to the silver dollar, but on a slightly different weight for the tael, at about 1.3% below the weight of the Haikuan tael (1370 cash to the tael)<sup>8</sup>. In practice, however, the two central Government taels were taken as being effectively the same<sup>9</sup>.

Of the other taels in use, the most important was the Shanghai tael. This was much lighter than the Canton or central Government taels, by about 2.1%. Furthermore, the Shanghai 'touch' was lower, at 91.6% pure silver in 1901: 7.9% below the Haikuan/Ku-ping/Canton standard. The Shanghai tael, therefore, as against the standard taels, traded at a rate of 1.11:1. The dollar, however, traded in Shanghai for 1,000 cash, as elsewhere. The *1906 Salt Report* suggests that the taels in use along the Yangtse were also lower in weight than the standard. The Hankow Report thus notes an exchange rate of 1316 cash to the tael in that city, and the Chungking Report an exchange rate of 1200 cash to the tael there. This would suggest the Hankow tael was about 4% above the Shanghai tael in the amount of silver it contained, and the Chungking tael about 4% below it, respectively being about 94.8% and 86.5% of the Haikuan tael.

Of course, where copper was traded in bulk against silver, the rates would vary depending on the price of copper and silver at the time. The rates were quoted on the Shanghai Exchange, and are regularly noted in the *North China Herald*<sup>10</sup>. The bulk exchange rate of copper cash for the Shanghai tael was normally quite distant from the formal currency rate of about 1,250 cash to the Shanghai tael. In 1875 the bulk exchange rate was thus 1760 cash to the tael. During the last quarter of the nineteenth century, this rate steadily declined, as the international price of silver fell, to 1292 in 1898, and 1312-

1315 in 1899-1900. This split between the formal currency rate and the bulk exchange rate clearly caused stress to the currency. During the 1880s and early 1890s, this was offset by the minting of Chinese Imperial silver cent coins (1¢, 5¢, 10¢, 20¢) of the same fineness as the silver dollar. These new coins, as they were of the same fineness as the dollar, were not subject to silver:copper exchange rate fluctuations. By 1901, the Customs would only accept the copper cash for small-scale transactions; in 1903 the Customs and the central Chinese authorities refused any longer to accept cash in payment of most dues, insisting only on the new coins: copper cash ceased to be minted from 1911.

In the *1906 Salt Report* the retail price of salt is usually given as so many cash per catty, or so many taels per picul (a weight of 100 catties), or so many cents per picul. The figures given below for the daily wage rates for a coolie (unskilled labourer) are mostly given as either so many cash a day or so many cents per month. Clearly, therefore, in order to allow comparison, all these figures have to be reduced to a common formula. The easiest such common formula to use is cash-per-catty and cash-per-day. However, where the figure is given in taels or cash, it is a question whether these are local or Customs taels. Even where the Report specifies that the tael is local, it is only rarely stated what the local exchange rate to the Customs tael or cash was. This problem is highlighted in the Wuhu Report, which thus notes that silver was weighed in different places along the route between the salt-fields and the Wuhu quayside in accordance with three different scales, varying by up to about 4%. The Tientsin Report, as noted above, states that two types of cash were in circulation there, standard cash at a thousand to the dollar, and lighter local cash. At Newchwang the writer of the Report gives figures in taels, mace, and candareens, probably standard weights, in other places in local cash, and in yet other places in *tiao* ('strings' of cash), which seem to have comprised 139 standard cash at that port<sup>11</sup>, clearly thus reflecting the mix of silver measures in use there in 1901, but making the figures given in that Report particularly difficult to assess.

This Note has attempted to reduce prices to cash and Customs taels, but in many cases this cannot be done. This may in some places introduce inaccuracies into the analysis, although probably only marginally so. The Reports, in almost every case, give the retail salt price to the nearest whole cash, and the prices quoted are unlikely, therefore, to be seriously influenced by marginal inaccuracies, since they are, anyway, accurate only to the nearest whole cash.

#### *Problems of the Statistics: Other Problems*

Another similar systemic problem was the weight of the catty. The standard catties (the Customs catty, the Ku-ping catty and the Canton catty) all weighed  $1\frac{1}{2}$  English pounds, divided into 16 standard taels. However, there were customary catties in many provinces which were of a different weight to this standard (although they seem universally to have been divided into 16 taels), and the weight of the local catty in standard taels is rarely stated in the Reports.

Some Provinces used a special catty standard for salt (in some Provinces several): a catty standard which gave a benefit to the Salt Monopoly in the weighing of

the salt. Thus, the Province of Kwangtung used the “Swatow Scale” for weighing salt at the point where the Salt Monopoly bought the salt, at least in the centre and east of the Province. This Swatow Scale catty weighed a little under eighteen standard taels, as noted in the Wuchow Report. The Salt Monopoly then sold the salt to the intermediate merchant by the standard Canton catty. Since the Swatow Scale was about 11.2% heavier than the Canton Scale, this gave a clear benefit to the Salt Monopoly of about 11.2% in the whole transaction<sup>12</sup>. Another similar case is noted in the Hankow (Wuhan) Report. Salt for that city was, at various points on its course from the salt-fields to Hankow, weighed by scales giving catty weights of 18.3, 16.8 and 16 standard taels, a situation the writer understandably called “a great confusion” (a container of salt considered to weigh 100 catties at the first of these weigh-stations would be considered to weigh 114.375 catties at the end of it). The Wuhu Report similarly notes that salt for that city was weighed at different points on its journey to Wuhu by 3 scales, which weighed respectively 18.3, 17.96, and 16 standard taels to the catty. Again, in many areas, salt merchants, having bought their salt from the Salt Monopoly using scales weighing 16 standard Taels to the catty, traditionally sold the salt on to the final consumer using a salt catty weighing only 15, or even only 14 standard taels. In Ichang, a catty weighing no less than 24 standard taels was used in the salt trade. It is probable that there were many other examples of such local traditional practices, which are not always clearly stated in the Reports.

As with the catty, so with the picul, which could differ very markedly from place to place, and with the *Yin* (引), or the “Bag” (包), one (or both) of which were almost everywhere used as the measure (or measures) for large quantities of salt. In most places the picul was a weight of 100 catties, and thus varied marginally with the weight of the catty, but in Yunnan, for instance, according to the Szemao and Mengtzu Reports, the local picul was a weight of 128 local catties, in Wuhu the picul used for weighing salt was of 150 local catties, and at Newchwang the measure for salt, while still being called a “picul” actually weighed between 600 and 750 catties. As for the *Yin* or the “Bag”, these could weigh anything from a little above 100 to well over 400 catties, or even more, and could change from one part of a single journey transporting salt, or even from time to time. Thus, for instance, at Wuchow, salt was imported (from Canton) in units nominally of 185 catties, and exported (to Kweilin and Liuchow) in units of nominally 220 standard catties, both units being called “Bags”. In Canton, the *Yin* as measured at the great Salt Depot there was allowed a higher weight in the Summer than in the Winter, by about 5%<sup>13</sup>. At some of the Liang Huai salt-fields, along the north Kiangsu coast, according to the Wuhu Report, salt was exported in *Yin* nominally of 440 catties, but often marginally larger, but from others in *Yin* nominally of 800 catties but often also marginally larger.

All these problems of variant weights and measures, however, seem likely only to introduce marginal inaccuracies into the following analysis, given the rounding of the figures to the nearest whole cash.

The third systemic problem is the extreme complexity of the salt-trade in the China of 1901, leading to inevitable problems of accuracy in detail. Anarchic accounting systems, the confused system of currency, weights, and measures discussed

already, labyrinthine official and unofficial systems of fees, “squeeze”, both regular and irregular, tax regimens of the most extreme complexity, constantly changing internal provincial duties, variable costs, “vexatious delays”, legal fictions, consumption quotas (on which many of the taxes were based) often quite out of touch with actual consumption rates, customary practices, special arrangements made for this district or that County, and so forth – all led to systems remarkably difficult to elucidate in full.

Many of the Reports note this problem. Thus, the writer of the Tientsin Report notes: “There are so many hidden threads by which the salt trade is conducted, and so many usages and local customs besides that it is quite impossible to pick up and expose them all ... The duties, taxes, and perquisites of every kind imposed by State laws or tolerated by time-honoured customs, generally or locally, can hardly be described, because after one has got hold of them they slip out of one’s hand on examination”. The writer of the Ichang Report similarly stated, “The system and general management of the Salt Administration of the Empire is of a complicated nature, full of technicalities and governed by local and constantly changing rules and procedures”. The writer of the Soochow Report also noted, “The taxes on salt ... are very numerous, and it has not been possible to give the amount of each tax in detail accurately”. Yet another comment of a similar character comes from the writer of the Hankow Report, who, at the close of 28 closely written pages on the system of taxes and fees in force, states: “I hardly venture to affirm that nothing has been omitted or that what has been included is all of it complete and correct. In this connexion, and with reference to the investigation of salt matters in general, I should point out that the complications inherent in the system are of a nature to preclude any full measure of success, even where the most patient and thorough researches are conducted”<sup>14</sup>. The writer of the Nanking Report was even more forthright, “The system of taxation and distribution is very complex, and appears to the uninitiated, like myself, as if it were made purposely to defy a thorough grasping of its details”. This problem, as with the other systemic problems discussed above, leads to inevitable marginal inaccuracies, although it is believed that the following analysis remains valid, even if the detail may be less correct than might be theoretically desirable.

The fourth systemic problem has already been briefly mentioned. The main Salt Tax was paid in accordance with quotas laid down for every County<sup>15</sup>. This was so that fraudulent attempts by salt merchants to claim that they had been unable to sell all the salt they had bought from the Salt Monopoly, and so evade the tax, could be overcome. Tax had to be paid on the total quantity of the salt in the quota, whether the merchant sending the salt to that County had sold that amount of salt or not. The quotas had been set far in the past, and had, by 1901, become fossilised. In some parts of China (notably the Yellow River and Yangtse Valleys), where there had been a long-term decline in population (especially, in the Yangtse Valley, in the aftermath of the Taiping Rebellion), the quota system meant that the Salt Tax had to be paid at a premium: not all the amount of salt in the quota could be sold to the reduced population, so the tax charged per catty was above the published tax rate. In other areas (and especially Kwangtung and the Central and South-Eastern coastal areas, and Shantung), where the population had risen sharply after the quotas were set, and where, in consequence, far more salt was sold than laid down in the quota<sup>16</sup>, the tax was paid at a discount, the per-catty rate charged

being below the published rate. This makes calculations as to the tax levels difficult to quantify exactly.

It should also be noted that the 1901 Reports, since they were drawn up by the Imperial Maritime Customs officers in the Treaty Ports, lack detail on those parts of China where there were no Treaty Ports at that date. The Reports are thus lacking almost entirely on information on the Salt Administration in the North-West - Turkestan (Sinkiang), Kansu, Shensi and Shansi – (or at least usable information - for instance, the writer of the Ichang Report believed the Salt Tax in Shansi to be “very small”, while the writer of the Shasi Report thought that the Salt Tax there came to the substantial 10.4 cash the catty), and have only sketchy information on the position in Tibet and Mongolia. They are fullest on conditions in the Yangtse Valley, and on the South, on the coasts, on Manchuria, and on Shantung and the Tientsin area. This Note thus concentrates on the information given on these areas.

### *The Price of Salt*

The price of salt to the final consumer in China in 1901 was made up of a number of elements. In the first place there was the actual cost of production of the salt. Then, from the salt-field which was the point of production to the final consumer, the salt had to be transported and re-transported, warehoused, often at several points, and packaged and re-packaged, with the various merchants handling the salt on its journey all taking their profits from the transaction. On top of all these costs, taxes, levies, and administrative charges of every kind were required to be paid, again at many points along the journey from salt-field to final consumer.

Taxes were levied on the salt at various points in its journey. In the first place there were taxes levied at the salt-field where it was produced, taxes, that is, on the salt-workers, licence fees, duties of various kinds, levies in kind and cash, inspection fees and so forth. These salt-field taxes were usually relatively low, although the incidence differed widely from salt-field to salt-field, and in places was significant.

Then the salt was, usually, transported to a Salt Depot where it was stored in bonded warehouses until it was ready for onward shipping. A monthly Storage Fee was charged, payable by the merchant who eventually took the salt on for onward shipping. When shipped, the main Salt Tax (正課, sometimes given as 正科) was also assessed: this also became the responsibility of the merchant shipping the salt on, although quite often, because of various regimes of deferred payment, the Tax was actually only paid later in the course of its journey to the final consumer. This main Salt Tax was a tax which was, at least in theory, accounted for to the Central Government through the Salt Monopoly, but, in a number of places it was retained, or partly retained, by the Provincial Government, ostensibly to meet Central Government expenses within the Province (for instance, the wages of soldiers stationed there). However, as well as the main Salt Tax, it was usual for a number of other Central Government imposts, as well as Provincial Taxes of various kinds, to be levied at the moment when the salt was removed from the bonded warehouse for onward shipping: sometimes as many as fifteen or more.

Most of these subsidiary levies were moderate, but the cumulative total was, in some places, high. Also levied at the same time were a number of Administrative Fees, compulsory charitable contributions and the like (for instance, by Imperial Decree, all salt shipped from Yangchow on the Yangtse paid a compulsory contribution to the expenses of the University of Tientsin, and another, by a decree of the Viceroy, to the Mei Hua College under the Viceroy's patronage). It is not always easy to distinguish Administrative Fees or compulsory charitable contributions from the tax payments strictly so defined: in this paper it should be understood that mention of the "Salt Tax" should be read as meaning "Salt Tax and associated payments".

The salt when shipped would be inspected at various points during transit, at each of which an Inspection Fee would be charged. At Provincial borders, and sometimes at other points as well, Transit Taxes (Likin, 釐金: Likin was thus a sort of internal Customs Duty) were often charged, to the benefit of the Viceroy's Treasury and Provincial Treasuries.

As with the payments made on removal of the salt from the main Salt Depot<sup>17</sup>, payment of Likin was inevitably accompanied by associated minor payments, Administrative Fees, compulsory charitable contributions, levies for River Protection or the salaries of troops and so forth. Strictly speaking, these associated payments were not Likin, but they were often spoken of as if they were. Thus the Hankow Report notes that the River Defence and Coastal Defence Taxes, the New Army Tax, and even the Additional Salt Tax, were usually classed as Likin. In many cases this was because these payments were not subject to a quota like the Salt Tax, had to be made at the same time, or at the same office, as Likin strictly so called, rather than at the Salt Tax Office, or even merely because the payments had to be made 'on the nail', like Likin, rather than deferred, like the Salt Tax. This was the probable reason why the Additional Salt Tax was often classed as Likin, rather than Salt Tax.

In these circumstances, it was often, clearly, difficult to be sure, even in 1901, if any given payment should be classified as a Salt Tax associated payment, a Likin payment, as a Likin associated payment, or as an administrative charge. Different Reports in the *1906 Report* tended to draw the lines at slightly different points, thus making a highly convoluted and confused system even more opaque. In this paper it should, therefore, be understood that mention of "Likin" should be read as meaning "Likin and associated payments". Furthermore, it should also be understood that the dividing line between Salt Tax, Salt Tax associated payments, Likin, Likin associated payments and administrative charges, was never very clear. No matter how defined, however, the Inspection Fees, Likin, and minor payments associated with Likin often came to far more than the main Salt Tax and its associated levies.

Not all the Likin and Provincial tax income was retained by the Provincial Governments: a good deal of it was sent on by the Province to the Viceroy, to meet his need for income for his administrative agencies.

Having paid all the dues demanded, eventually the salt would arrive at a local Salt Depot (often having passed en route through an Intermediate Salt Depot as well), from where it would be collected by the retailer, who would pay to have it portered to his shop, from where it would be sold to the final consumer.

Having paid all these taxes and levies, with all the merchants who had handled it having taken their expenses, overheads, and profits, and with all the transport and other costs met, the salt was then sold on to the final consumer at rates which varied widely, from less than 5 cash a catty to over 110 cash a catty, as is shown in Table 1 below. It will be noted from this Table that the retail price of salt was, in most cases, either less than 30 cash a catty, or else above 50 cash a catty. Only in the relatively restricted area around the mouth of the Yangtse (from Nanking to Ningpo) did salt retail for between 30 and 50 cash a catty. To understand these major variations in the final price of salt, it is necessary to look further into the taxes charged, and the expenses which had to be met before salt could be sold to the final consumer, and this is undertaken below.

**Table 1**

The Retail Price of Salt in China, 1901 (Cash per Catty)

City	Retail Price of Salt
Chefoo [煙台 Yantai, Shantung]	3-4
Pakhoi [北海 Beihai, Kwangsi]	3
Yamchow [欽州 Qinzhou, Kwangsi]	3
Kiungchow (Hoihow) [海口 Haikou, Hainan]	6-7
Newchwang [營口 Yingkou, Liaoning]	7-9, probably about 7
Kiaochow [青島 Qingdao, Shantung]	8-9
Swatow [汕頭 Shantou, Kwangtung]	8-9
Wenchow [溫州 Wenzhou, Chekiang]	9-10
Amoy [廈門 Xiamen, Fukien]	11-15
Mukden (estimated) [瀋陽 Shenyang, Liaoning]	11-15
Heungshan [中山 Zhongshan, Kwangtung]	14
Hong Kong 香港	12
Shigatse (estimated) (Tibet)	12-15
Cheunglok [五華 Wuhua, Kwangtung]	14
Tingchow [龍岩 Longyang, Fukien]	14-19
Macao (estimated) 澳門	15-18
Tientsin [天津 Tianjin]	16
Canton [廣州 Guangzhou, Kwangtung]	17
Zhangping area 漳平 (Fukien)	17-19
Peking (estimated) [北京 Beijing]	18-20
Ningpo [寧波 Ningbo, Chekiang]	18-20

Paoting [保定 Baoding, Hopeh]	20
Lhasa (estimated)	20-22
Nanning 南寧 (Kwangsi)	21-22
Yangchow [揚州 Yangzhou, Kiangsu]	22
Foochow [福州 Fuzhou, Fukien]	22
Wuchow [梧州 Wuzhou, Kwangsi]	22-26
Anyang area 安陽 (Honan)	25-30
Lungchow [龍州 Longzhou, Kwangsi]	24-25
Kanchow (estimated) [贛州 Ganzhou, Kiangsi]	25
Tienchang [夏邑 Xiayi, Honan]	26
Samshui [三水 Sanshui, Kwangtung]	27
Guangze area 光澤 (Fukien)	30
Chungking [重慶 Chongqing, Szechwan]	30
Chenchow [郴縣 Chenxian, Hunan]	about 30
Chinkiang [鎮江 Zhenjiang, Kiangsu]	32
Hangchow [杭州 Hangzhou, Chekiang]	32-34
Soochow [蘇州 Suzhou, Kiangsu]	33-36
Huaibei area 淮北 (Anwhei)	34
Tunxi area 屯溪 (Anwhei)	34
Nanking [南京 Nanjing, Kiangsu]	36-40
Huichow [巫溪 Wuxi, Kiangsu]	36
Szemaos [思茅 Simao, Yunnan]	37
Yatung [Yadong, Tibet]	38-44
Shanghai 上海	40
Chengtu [成都 Chengdu, Szechwan]	40
Nanyang area 南陽 (Honan)	40-50
Kweilin [桂林 Guilin, Kwangsi]	probably 46-50
Hankow [武漢 Wuhan, Hupeh]	50
Wuhu 蕪湖 (Anwhei)	50
Tatung [大通 Datong, near Tongling, Anwhei]	50
Shasi [沙市 Shashi, Hupeh]	50-58
Hengchow [衡陽 Hengyang, Hunan]	52
Yochow [嶽陽 Yueyang, Hunan]	52
Yungchow [零陵 Lingling, Hunan]	52
Kiukiang [九江 Jiujiang, Kiangsi]	52-53
Changsha 長沙 (Hunan)	56
Taiping area 太平 (Anwhei)	56
Zigui area 秭歸 (Hupeh)	60-70
Ichang [宜昌 Yichang, Hupeh]	probably 70
Mengtsz [蒙自 Mengzi, Yunnan]	105

Kaihua [文山 Wenshan, Yunnan]	115-120
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Note on Table 1: See Map 1 for all the above places.

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### *The Price of Salt at the Point of Production*

Salt was normally made in China by salt-workers who worked at salt-works which they either owned or where they had a legally indefeasible right to work, or they were employed by masters with such rights. The salt they made usually had to be sold either to the Government or to monopolists holding a local monopoly under the Government, at agreed rates. The salt-workers normally paid taxes (often a Poll-Tax, or Head Tax), and, in some cases, licence-fees or other operating permit-fees to the Government. The price they received for the salt, therefore, had to cover the actual costs of manufacture, and the taxes and fees they paid, with enough left over to cover the living expenses of the workers and their families. The taxes and fees required to be paid by the salt-workers differed from place to place, and were rarely standard, even within a single County, but were usually not excessive. In some places, such as Shantung and over most of the South, the salt-workers could sell salt retail at the salt-fields, subject only to these salt-field taxes, but in most places most of the output had to be sold to the Government, and, in many places, all of it.

The *1906 Salt Report* gives a good deal of information on the price of salt as procured from the salt-workers (the ex-saltfield price). The most detailed information is that given for the salt produced near Tientsin by the salt-workers of the Changlu Salt Division, and for the salt produced in Kwangtung Province. At Tientsin the salt was procured by the Salt Monopoly from the salt-workers for 2.6 cash a catty. Of this 2.6 cash, according to the Tientsin Report, about 1 cash represented the costs of production, about 1 cash the taxes and fees paid by the salt-workers, and “the rest” (presumably about 0.6 - 1 cash) the income to the salt-workers<sup>18</sup>. In Hong Kong in the period 1910-1930 the average output per salt-worker household was about 100 catties of salt a day: if the Changlu salt-workers had an approximately similar level of output, their daily income from salt-working, all expenses and taxes met, would have been about 60 - 100 cash a day. This is a very small figure, but salt-workers normally had access to small vegetable fields constructed along the bunds of the salt-fields for much of their food, to free fuel, and free housing in huts built on the edges of the salt-fields, and it is likely that the real income of the salt-workers, taking all these factors into consideration, was approximately the same as a coolie or general unskilled labourer in the Tientsin area (about 135 cash per day). Salt-workers were universally regarded as being very poor, and these Changlu figures clearly support this.

In Kwangtung generally the only tax levied on the salt-workers at the salt-fields seems to have been a Poll Tax, paid once a year, and varying between 0.456 and 1.208 Taels, which would have represented a minuscule sum when set against the annual production of salt (between about one-hundredth and one-twentieth of a cash per catty). In some salt-working areas of South China, including all those around the Pearl River Delta, no Poll Tax was levied on the salt-workers, and also no Salt Tax was charged, but

instead the salt-fields were seen as Imperial property, which were leased out to Salt Masters at a high rental for a term of years (in other words, in these areas, the only State levy charged on the salt at the salt-fields was the rental for the salt-field). In yet other Kwangtung salt-producing districts a licence fee or permit fee was set on each salt-field, rather than any tax on the individual workers, and in yet others again, as for instance Swatow, no taxes or fees of any kind were imposed in cash at the salt-fields, but the Government took a share in kind of the total amount of salt produced.

In Swatow the cash price of the salt as sold retail from the salt-fields by the salt-workers was 1.8 cash the catty, probably representing about 1 cash the catty production costs and 0.8 cash the catty income to the workers. At Swatow about one-third of the output (the figure differed slightly from salt-field to salt-field) was taken in kind without payment by Government, in lieu of taxes, and then sold by the Salt Monopoly at the same price as the other salt sold by the salt-workers. This would have had the effect of adding to the real costs of the salt-workers about 0.9 cash the catty for income foregone for the third of the output taken by Government. In another place, the Swatow Report suggests that the total cost of the salt ex-saltfield was about 3 cash the catty, which is probably the real-cost figure, with the Government share factored in.

In other places, the Reports only give the price paid to the salt-workers (i.e. the ex-saltfield costs, that is, the total of the production costs, taxes, fees, and income to the salt-workers) without any breakdown of the figure.

In Northern China, the ex-saltfield price paid to the salt-workers for salt made by solar evaporation seems normally to have been between 3 and 4 cash a catty, including salt-field taxes and fees. At Newchwang in Liaotung Province, the price for salt at the salt-fields was thus about 3.3 cash a catty. In Chefoo (Yantai), in Shantung, it was about 3 cash. In all these cases the sums suggest that the income to the salt-workers was unlikely to have been much above 1 cash the catty. These figures were probably subject to marginal variation depending on the year: in very cloudy and wet years, when salt was difficult to make and costs were higher the price may well have risen marginally.

In South China, solar-evaporation salt was probably, in general, slightly cheaper at the salt-works than in the North, reflecting the higher output, and thus lower production costs, possible under the hotter Southern sun, mostly in the range 1-3 cash a catty. At Amoy salt cost at the salt-fields, salt-field taxes and fees included, 2 cash a catty. At the salt-pans south-west of Macau the price was 3 cash a catty, again including salt-field taxes and fees. In the west of Kwangtung Province (where salt-field taxes were usually very low) the price seems to have been generally between 1 and 2 cash a catty (Pakhoi, 1 cash; Lienchow, 1.5 cash; Kaochow, 2 cash) a catty. On Hainan the price was 4 local cash a catty, but this probably equates to about 3 standard cash. In Hong Kong, Hong Kong Government Reports suggest the price at the salt-fields was higher, about 6-7 cash a catty, reflecting, in this case, without a doubt, the high annual rental imposed on the salt-fields there by the Ch'ing Government and then by the Hong Kong Government<sup>19</sup>.

The ex-saltfield prices for solar-evaporation salt at the salt-works were, however, significantly higher in Central China. In Chekiang, both at Hangchow and at Ningpo, the price seems to have been about 5 cash a catty. North of the Yangtze, the salt-workers of the Liang Huai Salt Division were paid between about 3 and 6 cash a catty (these salt-fields produced several grades of salt, and the range of prices quoted probably reflects these different grades: one Report mentions prices of 3 to 4 cash a catty, other Reports quote 4.4 and 5-6 cash a catty). In this Central China area an average price at the salt-fields of about 5 cash the catty seems likely. The income to the salt-workers per catty is unlikely, however, to have been significantly more here than elsewhere in China: the higher cost of salt ex-saltfields in the area around the mouth of the Yangtze is due, almost certainly, to significantly higher salt-field taxes there than elsewhere.

Salt crystallised by boiling a saline solution was everywhere much more expensive than salt crystallised by solar evaporation. In the Liang Huai salt-fields, boiled salt was sold by the salt-workers for between 8 and 12 cash a catty, at Chefoo for 6 cash a catty, and, in Kwangtung for 6 or 7 cash a catty (6 cash at the salt-fields south-west of Macau, 7 cash at Pakhoi, 7 again at Swatow, where the “luxuriously clean” salt grade was probably boiled, and 8 local cash on Hainan, probably representing about 6-7 standard cash). The difference in cost was largely due to the very much higher cost of producing salt by boiling, due to the high cost of the fuel used, and also because of the generally higher licence and permit fees charged. It is likely that the income to the salt-workers was, if anything, rather lower for boiled salt than for solar evaporation salt – at least this is suggested by the tendency throughout the eighteenth and nineteenth centuries for salt-fields to switch from boiled to solar-evaporation methods as the price of fuel rose inexorably, but with the price received for the salt produced lagging behind. This more expensive boiled salt was sold at a premium to wealthier families, who wanted a cleaner and finer product on their tables. In areas where no boiled salt was available, salt-refiners would refine salt to meet this market<sup>20</sup>.

By far the most expensive salt to produce was that made by boiling saline solution drawn from salt-mines. Salt was made by this method in Szechwan and Yunnan. The drilling of deep pipes to reach the salt-beds, and the huge expenses of drawing the saline solution up to the surface, plus the high costs of fuel, all made this an expensive option. In Szechwan the pre-tax price paid to salt-well workers for their salt was, according to the Chungking Report, between 14 and 18.2 cash the catty, depending on quality, to which taxes added at the salt-fields added between 2.9 and 4 cash the catty, making the ex-saltfield price between 18 and 21.2 cash the catty: this is broadly in line with the ex-saltfield price of 20 cash the catty quoted by the writer of the Ichang Report (it is likely that only the higher quality of salt was exported from Szechwan into Hupeh through Ichang). In parts of Yunnan the ex-saltfield price was even more – 30 cash a catty at Mengtsz, where the wells were deep. The Szemao Report suggests that the costs varied with the depth of the well and other local factors, and that it varied between 7 and 28 cash a catty, presumably before salt-field taxes were assessed<sup>21</sup>.

It is unlikely that the cash income of the salt-workers, after all their expenses were met, was anywhere much above one cash a catty.

Thus, taking China as a whole, solar evaporated salt normally in 1901 cost between about 2 and 3 cash the catty ex-saltfield in the South, of which costs of production came to about one cash the catty, and income to the salt-worker about 1 cash the catty, the remainder representing salt-field taxes. In general, salt produced in the north was slightly more expensive than salt produced in the south (by about one cash the catty, making costs 3-4 cash the catty), probably to a large degree due to the higher production costs in the north. In Central China the ex-saltfield price was one or two cash the catty higher (4 to 6 cash the catty) than elsewhere along the coast, due in this case, in large part, to significantly higher salt-field taxes. Boiled salt, or refined salt, and especially salt-mine salt, was very much more expensive ex-saltfield.

*Taxes, Likin, and Other Imposts, and the Retail Price of Salt*

Once the salt had been purchased or acquired from the salt-workers, it was, usually, stored at a depot where taxes were assessed on it before it was sold on to merchants who would take the salt on the next stage of its journey to the final consumer. The main Salt Tax (正課) was imposed at this stage, and, usually, a whole raft of other impost, each mainly very much smaller than the Salt Tax. Most of the tax-income extracted from the salt at this stage went, usually, to the Central Government, although a good deal also went to the Provincial Government. In every case, the depot and the salt-fields sending salt to that depot lay within one single Province, and that Province would be the beneficiary of the Provincial Taxes levied at this stage. The salt would then be sold ex-depot at a price covering the purchase price of the salt (the ex-saltfield price), transport to the depot, plus all these taxes and impost, plus also a sum to cover the overheads of the depot and the costs of storing the salt there, although, in some places, regimes of deferred payment meant that merchants purchasing the salt did not need to pay all the sum assessed immediately. Salt sold ex-depot could then, usually, be carried for sale throughout an area around the depot without paying any further taxes.

However, if the salt was carried any significant distance inland from the Salt Depot, transit taxes (Likin) would often be charged at Likin Barriers (internal customs posts), again with a raft of other associated levies. Likin Barriers were particularly common at provincial boundaries, but were also to be found at significant points within provinces. Most of the income extracted at Likin Barriers went to Provincial or Viceregal spending agencies rather than agencies of the Central Government. Some went into the main Provincial Treasury, but much was hypothecated to particular accounts and received directly by them. A common such hypothecated account would be the account paying for the upkeep and policing of the river along which the traffic was passing.

Tax levels differed widely from Province to Province, and levels of Likin differed even more widely. In some Provinces, the tax levels were noticeably low, especially where the Salt Tax quotas were such that the main Salt Tax was discounted, and, in others, noticeably high. In general, in China, the north and south were generally

areas of low salt taxes, but Central China, the Yangtse Valley, and the South-West were heavily taxed.

*The Low Tax Areas: the North, and the Southern Coastal Region*

Low levels of tax thus seem to have been normal in the Changlu Salt Division (at least before 1903, when taxes there were raised<sup>22</sup>). This was the Salt Division which provided the salt sold in the capital, Peking, and it is likely that it was deliberate policy to keep the price of salt in the capital low to reduce the risk of salt-riots there. Taxes levied on Changlu salt at the Tientsin Salt Depot, as recorded in the Tientsin Report, came to no more than about 4.4 cash a catty, although this is probably an incomplete record: several more cash were probably levied, perhaps one or two cash the catty more. At all events, however, whatever the tax levels, it was low enough that the retail price of salt in Tientsin could be kept down to 16 cash a catty. By the time the salt had been carried to Paoting this price had risen to 20 cash a catty, to cover the transport costs to Paoting, and, by the time it had been carried to Anyang and other cities in north Honan (along what was, in 1901, the then main branch of the Yellow River), it had risen to 25-30 cash a catty, again reflecting the higher transport costs. The price in Peking is likely to have been slightly less than the 20 cash a catty of Paoting, since Peking was rather closer to the Tientsin Salt Depot than Paoting: a retail price for salt in Peking of about 18-20 cash the catty seems likely. There seem to have been no Likin Barriers within Chihli Province, and the only add-on costs ex-depot within the Province were thus transport costs. There cannot have been any very high Honan border Likin either, given the retail price in the Anyang area, certainly no more than about 2 or 3 cash the catty.

Shantung salt was also taxed at very low levels (mostly because consumption quotas were low, and so the tax was heavily discounted<sup>23</sup>). Salt retailed in Chefoo at 3-4 cash per catty for solar-evaporation salt, and at 8 cash per catty for boiled salt, which are so close to the ex-saltfield prices (6 cash per catty, presumably for boiled salt) that it is probable that the salt-workers sold the salt by retail themselves without any retailer middlemen. At Kiaochow (today's Tsingtao) the retail price quoted (8 cash per catty) must represent the same sort of situation. The Chefoo and Kiaochow Reports both speak of taxes at less than 1 cash per catty. Salt was sold at the ex-saltfield rate over large areas of the Province, probably including the whole of the peninsula part of the Province.

In 1901, the main branch of the Yellow River flowed north of today's main branch, close to Tientsin; the branch flowing close to Tsinan was then a lesser branch. Salt was sent from the coastal saltfields of Shantung up this latter river to a Salt Depot at Tsinan, where Salt Tax and Shantung Likin were charged on it. This salt was then sent along the Shantung section of the Grand Canal, to reach all those parts of the Province lying to the south and west of Tsinan<sup>24</sup>. Salt also went from the Tsinan Salt Depot up river and into Honan, to the Kaifeng area. Honan Province was also, as noted above, served by Changlu salt, sent down the then main branch of the Yellow River towards Luoyang. It is unlikely that the Shantung salt was any more expensive once it reached Honan than the Changlu salt, otherwise there would have been serious discontent among the consumers, and it can be assumed that the Shantung salt cost no more to the

Honan consumer than the 25-30 cash a catty charged for Changlu salt there. This again suggests the Honan Likin charged at the Shantung Provincial border was moderate, no more than 2 or 3 cash the catty.

Taxes were also low in Manchuria. Before 1867, in fact, no taxes at all had been levied on salt there, but, by 1901, taxes had been levied which by then totalled about 1.7 cash a catty. These were charged at the saltfields. This allowed salt ex-saltfield to be wholesaled at a price which allowed retail at Newchwang at about 7-9 cash a catty, probably close to 7 cash the catty<sup>25</sup>. No figures are given for the retail price of salt inland in Manchuria, but it is clear from the Newchwang Report that the price was generally low, reflecting this low tax regime, and the generally easy transport conditions on the rivers of Manchuria. There were no Likin Barriers within the Manchurian Provinces charging imposts on salt. Retail prices at the largest city of Manchuria, Mukden (Shenyang), quite close to the salt-fields, with easy river transport between the two, are unlikely to have been more than about 15 cash the catty. Manchurian salt was not usually exported outside Manchuria<sup>26</sup>.

In the South tax-levels were equally low, or even lower. In Kwangtung, salt, mostly costing about 3 cash a catty ex-saltfield, when transported to Canton (a good distance away from the salt-fields: transport was by sea-junk) cost on arrival at the great Salt Depot there about 7 cash a catty because of the costs of transporting it to Canton. According to the Canton Report, at Canton taxes of about 6 cash a catty were added to most salt (comprising both the main Salt Tax, heavily discounted because of out-of-date consumption quotas, and a series of Provincial levies), allowing a retail price in Canton of 17 cash a catty, covering the ex-Depot price of about 13 cash the catty, and a small sum to cover the retailer's overheads and profit. There were no Likin Barriers within Kwangtung Province, but, according to the Canton Report, a Transit Tax (varying according to the final destination, but mostly about 3 cash a catty) was imposed at the Canton Salt Depot on salt which was to be sent up the West or North Rivers. This Transit Tax was not imposed on salt sold within Canton city, or the counties immediately surrounding the city. The Lappa Report suggests that the combined Tax and Transit Tax imposed at Canton varied from 3 to 10 cash the catty for salt destined for sale in one or other of the Kwangtung regions. Of these sums, the latter figure (10 cents the catty) doubtless represents the 6 cash a catty main Salt Tax and Provincial levies, plus the 3 cash a catty Transit Tax levied at Canton. The lower figure probably represents the levies imposed on salt sold in the Pearl River area which had easy access to salt directly from the salt-fields, and so had an especially low tax regime, to make smuggling less attractive. Apart from this Transit Tax levied at the Canton Salt Depot, there were no other significant imposts imposed within Kwangtung Province: the only add-on costs ex-depot were the transport and handling costs (including Inspection Fees at various Inspection Barriers). All of Central Kwangtung was provided with salt from the Canton Salt Depot. Transport costs could, however, be high – salt thus retailed for 26 cash a catty at Samshui, a mere thirty miles or so up-river from the Depot (suggesting transport and handling costs of 6 cash the catty, plus about 3 cash the catty for the retailer's overheads and profits), although the retail price was not significantly more at Wuchow, a further 140 miles up the West River.

Perhaps more importantly, the region to the south of Canton, the Pearl River Delta, by far the densest populated area in the South, and with perhaps a third of the entire population of Kwangtung, got its salt mostly direct from the salt-fields, and not from the Canton Salt Depot, and seem to have enjoyed access to either tax-free salt, or else to salt paying very low taxes (other than the low taxes charged on the salt-workers at the salt-fields). Thus, at Heungshan, inland from Macau, according to the Lappa Report, solar-evaporation salt retailed for a mere 9 cash a catty, which, given the local price ex-saltfield of 3 cash a catty barely allows enough to cover the retailer's overheads and the transport costs to Heungshan, and certainly leaves no allowance for any substantial taxes (taxes of about 3 cash the catty are just feasible, as suggested by the Lappa Report, as noted above). It is unlikely that anywhere in the Delta paid more than about 12 cash a catty for its salt, and a tax-rate of about 3 cash the catty was probably the norm.

Hong Kong similarly got its salt direct from the salt-fields. The ex-saltfield price for salt produced at the Hong Kong salt-fields was about 6-7 cash the catty, and came to about 10 cash the catty when the transport costs from the saltfields to the Hong Kong quayside are added, allowing retail at about 12 cash the catty<sup>27</sup>. The figure of 6-7 cash the catty cost ex-saltfield, so much higher than the ex-saltfield price from most Kwangtung salt-fields, is due to the salt from the salt-fields of the Hong Kong area not paying any tax at all in the late Ch'ing period, but instead paying a heavy annual rental to the Provincial Treasury, this rent being the sole payment levied. This made salt ex-saltfields more expensive, but being subsequently tax-free made the salt effectively about the same price as delivered to the retailer as taxed salt from the other Kwangtung low-tax salt-fields serving the Pearl River Delta area. The Hong Kong Government took this late Ching practice over, and continued this high-rental-no-tax policy. Hong Kong also imported salt from the Swabue (Shanwei, 汕尾) area to the east. This salt sold ex-saltfield at Swabue at about 3 cash the catty, but transport costs to Hong Kong were quite high, and, on arrival at the dockside in Hong Kong it cost about the same as salt from the Hong Kong salt-fields, that is, it sold at a wholesale price of about 10 cash the catty<sup>28</sup>. The retail price in Hong Kong was, as noted above, about 12 cash the catty, representing the ex-saltfield price plus the transport costs to Hong Kong, and the retailer's overheads and profits. A good deal of this salt was shipped onwards from Hong Kong into parts of Kwangtung as a major smuggling trade: it would have been about 1 cash a catty less than the local salt. Probably most of this smuggled salt was sold to fishing boats through the salt-market on Cheung Chau (長洲).

The eastern part of Kwangtung got its salt from a separate Salt Depot, at Swatow. The Canton Report states that the same taxes were imposed there as at Canton, i.e. presumably 6 cash the catty, but, in fact, according to the Swatow Report, no tax seems to have been levied there. The Canton Report explicitly states that no Transit Taxes were imposed on salt leaving Swatow. The owners of the salt-fields at Swatow, according to the Swatow Report, surrendered a portion of the salt made to the Government (25-30%), and the rest they sold to salt retailers at the market price, the Government selling its salt alongside the salt sold by the salt-field owners and at the same price (probably about 7 cash a catty). The quoted price of the salt ex-saltfields (3-4 cash

the catty) reflects the percentage taken by the Government: the actual production costs must have been about 1.5-2 cash the catty, as noted above. The Government would have made about 6 cash a catty profit by this process, approximating its income from tax at Canton. Since the retail price for salt within the city was only 8-9 cash a catty, this only gives a small margin for the retailer's overheads. Inland from Swatow, the only add-on costs were the transport costs, which were not excessive: at Cheunglok County (today called Wuhua County), about 150 miles down the Han River from Swatow, the retail price was still only 14 cash a catty.

The western third of Kwangtung got its salt direct from the salt-fields, like the Pearl River Delta, and, again, seems to have enjoyed access to salt which was almost entirely tax-free apart from the low taxes and fees charged at the salt-fields on the salt-workers. At Pakhoi, salt-field taxes were significantly less than 1 cash the catty. Reported retail prices were extremely low: 3 cash a catty at Yamchow and Pakhoi for solar-evaporation salt. These prices are so low, in fact, that it must be assumed that retailing was done direct from the salt-fields, without any middlemen needing to cover overheads. Transport costs inland from Yamchow and Pakhoi were, however, high, as all feasible routes included land sectors, where the salt had to be carried by men on shoulder poles. A Kwangsi Border Likin at the rate of 1.1 cash the catty (according to the Pakhoi Report) or about 0.9 cash the catty (according to the Lungchow Report), was imposed, but, even so, by the time the salt reached Nanning, 140 miles from the coast, the retail price was still no more than 21 cash a catty.

On Hainan, salt was sold with only very low salt-field taxes being imposed (considerably less than 1 cash the catty). Salt ex-saltfield sold for 4 and 8 local cash a catty (respectively for solar-evaporation and boiled salt, representing about 3 and 6-7 standard cash), and retailed for 6 and 12 local cash a catty (about 4 and 9-10 standard cash), thus providing only a small allowance for the transport from the salt-fields to the retailer, and the retailer's overheads and profits.

In Fukien, the Min River Valley was provided with salt from the Foochow Salt Depot. The Foochow Report suggests that salt-field taxes differed from area to area, but were generally lower than 1 cash a catty. The only other tax mentioned is one of about 5-6 cash a catty, imposed at the Foochow Salt Depot, this representing the main Salt Tax. However, it is likely that other Provincial taxes or fees were also imposed at this stage, since the retail price for salt in Foochow City ex-depot was 22 cash a catty, suggesting total levies at the Salt Depot of nearer 10 or 12 cash the catty, the other 5 or 6 cash levied being, presumably, Provincial levies. The inland areas of Central Fukien, around Guangze, may have enjoyed a preferential tax tariff, since the report suggests that even well inland the retail price was no more than 30 cash a catty.

It is probable that Northern Fukien, around Ningte, got its salt from its own Salt Depot, and paid much less by way of tax, although the Reports are uninformative about this. The southernmost part of Chekiang Province, around Wenchow, had a low retail price structure, and may well have enjoyed a tax regime more like that of the northern part of Fukien to its south than the rest of Chekiang to its north. In South

Chekiang, salt paid about 6 cash the catty tax (in this case probably representing both the main Salt Tax and Provincial Taxes) on leaving the salt-field area for Wenchow, according to the Wenchow Report. The retail price for salt at Wenchow was only 9-10 cash per catty for “inferior” salt (probably solar-evaporation salt), and 13-14 cash per catty for “superior” (probably boiled) salt. The price of salt ex-saltfields is not given in this Report, but the quoted tax levels and retail prices do not allow for an ex-saltfield price of much above 2 or 3 cash per catty there.

The salt used in the southern part of Fukien definitely paid less tax than the salt provided for the central part. At Amoy salt paid about 4 cash a catty tax on leaving the salt-field area, and another 1.6 cash the catty a little further inland. Since the ex-saltfield price was about 2 cash the catty, this allowed a retail price of 11-15 cash the catty in Amoy. Even “well inland” from Amoy, around Zhangping, the price was still low – 17-19 cash the catty. Tingchow in Fukien (today’s Longyang Prefecture) was provided with salt from Swatow in Kwangtung: no Likin was charged, however, on entry to Fukien, and it is likely that the retail price of the salt at Tingchow was similar to that at Cheunglok, about the same distance from Swatow, i.e. about 14 cash a catty, or at least no more than the salt traded inland from Amoy, i.e. 17-19 cash the catty.

Salt was also quite cheap in the major towns and settled areas of Tibet. Tibet had a salt-trade which differed sharply from that in China proper, as the Yatung Report makes clear. Tibet was associated far more closely with the economic and trading systems of India than with those of China. The Tibetan salt was thus traded in the Indian maund unit (82 pounds), and not in the picul or *Yin* of China, and accounts were kept in rupees and annas, not taels and cash. There were no taxes on salt of any sort in Tibet.

Salt was traded in Central Tibet from the salt-lake at Chang Tsa-ka deep in the desolate central plateau of Tibet (there were salt-wells in the far east of Tibet as well, near the Yunnan border, which supplied Eastern Tibet, but the *1906 Salt Report* is uninformative about this trade). At Chang Tsa-ka there were vast stretches of salt-flats around a central highly saline lake: salt could be easily cut out from these salt-flats. Few people lived anywhere near Chang Tsa-ka, which was, indeed, generally inaccessible during the long Winter months. There were, as a result, no full-time salt-workers at Chang Tsa-ka. This salt could be taken by anyone willing to make the arduous journey into the area. No-one had any exclusive rights to the site. The nomads of the central plateau would go there every so often to cut enough salt for their own needs, and merchants from the distant central Tibetan towns would also send people there to cut salt for them as needed. Salt thus dug out was then carried by porters to the cities of Central Tibet, taking ten days to reach Shigatse, and seventeen to reach Lhasa. The salt would have been very cheap at the source: most of the retail price must have represented the costs of transporting the salt.

Chang Tsa-ka salt wholesaled at Yatung (the border crossing-post between Tibet and Sikkim and Bhutan) for the equivalent of 27 cash the catty (1 anna for 2 pounds), and retailed there for the equivalent of 38 cash the catty (5 pence sterling for 6 pounds). A great deal of Tibetan salt from Chang Tsa-ka (about 40,000 maund, or

3,280,000 pounds, or about 1,500 tons a year) was exported over the Himalayan passes, to Bhutan, to Nepal, and to Oudh in India (the area around Lucknow and Cawnpore), all carried the whole way by porters. Salt was, in fact, one of the major exports of Tibet. It took 26 days of portering the salt for it to reach Phari in Bhutan from Chang Tsa-ka. At Phari, the salt cost wholesale about the same as it did at Yatung (2.5 Rupees the maund, which is equivalent to about 26 cash the catty). By the time it reached Oudh the wholesale price had climbed to the equivalent of 42 cash the catty (4 Rupees the maund). The price of the salt at Shigatse (10 days portering from Chang Tsa-ka) and Lhasa (17 days portering from Chang Tsa-ka) must have been a good deal lower than the price at Yatung or Phari, probably retailing there for about the equivalent of 12-15 cash the catty at Shigatse, and 20-22 cash the catty at Lhasa.

These figures are all taken from the Reports written by the Customs Commissioners. The Customs Commissioners, not unexpectedly, all had their offices in the major trading cities. The figures they quoted for the retail price of salt were mostly those of the cities in which they found themselves. These cities were where the salt trade was centred, along with most other trade. As such they would have been the places where salt retailed at the lowest figure within the area of which the city was the centre. Salt arriving in these cities would have been unloaded, broken down into smaller lots, sent onwards to the smaller towns of the region, and then broken down again into yet smaller lots and sent to the small market-towns away from the rivers and main arteries of trade. Transport costs, and the overheads of the intermediate merchants, would, in every case, have raised prices quickly as the salt travelled inland. In every case, in all probability, 10 or 15 cash a catty should be added to the prices quoted for the likely price in the up-country small market-towns, perhaps even 20 or 25 cash a catty for very remote places.

Thus, over much of China, the retail price of salt, including taxes and Likin, did not go much above 15-25 cash a catty in major towns, or 25-30 cash a catty, even well away from the major towns. In most areas Likin, if it was levied at all, was levied on salt at a rate well below the Salt Tax rate: probably generally at no more than a third or less of the Salt Tax rate.

*The High Price/High Tax Areas: The South-West and the Yangtse Basin*

In some parts of China the salt price was, however, much more than this 15-30 cash the catty norm, with prices in the major towns at 50 cash a catty or more, and prices in the up-country areas going up even to above 100 cash a catty. The high salt price areas – Yunnan, Kweichow, and to some degree Kwangsi and Szechwan, and the Yangtse Valley above all – must be seen as exceptions to the normal rule of moderate prices. In most cases the high price areas seem to have suffered the high prices to a large extent because of high levels of tax, and especially Likin, and to have become highly taxed mostly as a response to political troubles in the nineteenth century (and especially the Taiping Rebellion).

In Yunnan, however, the high price of salt seems to have been the result of the high ex-saltfield price, and the problems of transport, as well as of high levels of

tax. Yunnan produced salt from salt-wells. These wells were mostly quite deep. The salt was produced by pumping water down long boreholes into the salt-bed, which then dissolved the salt in the salt-beds, forming a saline solution which was then pumped to the surface, where the salt was crystallised out by boiling the solution.

Locally produced salt, from the local salt-wells, was expensive to produce, reaching 30 cash a catty at the well-head before tax at Mengtsz. Taxes, too, were high. The Chefoo Report thus notes that each salt-well in Yunnan had to pay a huge annual permit fee of 4,000 Taels, plus Likin, probably representing about 5 cash a catty. The Szemao Report notes taxes of 20 cash the catty, including an Army Tax of 10 cash the catty, presumably on top of this annual permit fee, plus Likin of 4 cash the catty: taxes and fees may thus have added 30 cash a catty to the already high production costs. Transport costs in this mountainous area (where there were few rivers which aided transport) were generally high. As a result the retail price at Mengtsz, some distance away from the salt-wells, was 105 cash a catty, and a little further away, at Kaihua, according to the Szemao Report, the retail price was 115-120 local cash a catty (the Mengtsz and Szemao Reports, however, say that the salt actually consumed in the Mengtsz area, which was on the Red River, and so easy of access from Vietnam was mostly smuggled from Vietnam, retailing there for about 41 cash the catty).

The Province of Yunnan is extremely mountainous, and there are few useful rivers to reduce the costs of transport. Salt is bulky, and very expensive to manhandle over hilly roads on shoulder-poles. Transport of the salt from the salt-fields to other parts of the Province must have been, as noted above, very expensive: transport costs, added to the high ex-saltfield costs and high taxes, must have made salt in the remoter parts of the Province very expensive indeed, certainly over 100 cash the catty, as at Mengtsz and Kaihua, and in some places probably getting close to 200 cash the catty.

Given these very high prices, it is not surprising that salt smuggling was endemic in Yunnan wherever transport costs made this viable. As the Ichang Report states, "Owing to the intricate nature of the Yunnan salt administration, many openings for malpractice exist, and these are freely taken advantage of, judging by the heavy salt smuggling reported to be carried on in the province". The Szemao Report talks of substantial salt smuggling into Yunnan from Vietnam and Burma, the salt imported being paid for by cotton and tea smuggled out. Salt smuggled from the Red River Valley of Vietnam (made on the coast near Haiphong) was easily available in some parts of the Province, and was very competitive in the west and south-west of the Province, but cost up to 150 cash a catty by the time it reached central Yunnan, because of the massive transport costs, and thus was no cheaper there than Yunnan salt. Only at Szemao, with its relatively easier-to-work salt-wells, were ex-saltfield prices generally lower (probably mostly about 7-10 cash the catty), and smuggling probably therefore less, but even there the retail price close to the salt-wells was about 37 cash a catty, reflecting the heavy tax load, and away from the salt-wells the price must have risen very fast because of the costs of transport.

The Reports are not very illuminating as to the situation in Kweichow Province, but there are suggestions that the situation there was very similar to that in Yunnan, and for much the same reason, i.e. high prices for salt as sold to the consumer, because of transport costs in a mountainous area with poor roads. In Kweichow the problems would have been exacerbated because there were no salt sources within the Province, and all salt had to be imported there from outside, at high cost. The northern and eastern parts of Kweichow were supplied with salt from Szechwan along the Wujiang river from Chungking. This river was not easy to navigate, and the Szechwan salt authorities had special boats made for taking the salt up it<sup>29</sup>. The southern part of the Province was supplied with Kwangtung salt shipped through Kwangsi along the Hongshui river (passing through the heart of the Zhuang areas), and along the Dulu river from Liuchow. A Provincial Likin was imposed in Kweichow in 1877 (Kwangtung salt entering Kweichow paid 2 cash a catty Likin on entering Kweichow: the Szechwan Viceroy paid a subsidy to the Kweichow Governor for the salt imported from Szechwan to be exempt from this levy<sup>30</sup> although the amount of the subsidy must have been reclaimed by Szechwan levies on the salt as it left Szechwan). The Ichang Report states that salt sold in Kweichow at over 100 cash the catty retail. The Ichang Report would have been reporting on the northernmost area of Kweichow, that is, the area closest to Ichang: this area was relatively easily supplied with Szechwan salt. In the southern parts, supplied with salt from Kwangtung, the salt price must have been well above this figure, probably 150 cash the catty, and in the mountainous area west of Kweiyang the Szechwan salt must have been about that figure as well, perhaps even more than that.

Salt for Kwangsi was sent there from Kwangtung. Salt for the northern half of Kwangsi was sent there from the Canton Salt Depot. The Wuchow Report gives details of the charges levied on this salt at various stages of its journey. Salt leaving the Canton Salt Depot at the ex-depot rate of 13 cash per catty paid freightage between Canton and Wuchow of 2.4 cash per catty, plus a brokerage fee of 0.7 cash the catty. Duty and a Kwangtung border Likin were charged at the Wuchow quayside at 1.9 and 2.1 cash per catty respectively. Other charges came to 1.1 cash the catty. This brought the wholesale cost per catty to 21.2 cash as landed at Wuchow. Salt sold retail in Wuchow for 22-26 cash a catty, thus leaving just a couple of cash for the retailer's overheads and profits.

Salt sold on from Wuchow paid an additional Kwangsi Provincial Likin on leaving Wuchow of 2 cash per catty for salt to be sent on from Wuchow towards Kweilin (this is probably a printing error for 3 cash per catty) and of 4.1 cash per catty for salt to be sent on from Wuchow towards Liuchow. Inspection Fees of a further 2 cash per catty were charged en route to Kweilin and doubtless at least as much en route to Liuchow. 4 cash a catty were charged for the overheads and profits of the Wuchow wholesaler, plus freightage (5.6 cash a catty to Kweilin). The overheads and profits of the intermediate merchant (the merchant responsible for freighting the salt on from Wuchow to Kweilin) came to 5.8 cash the catty. The Wuchow Report states that this brought the wholesale cost of the salt as landed at Kweilin up to 41.6 cash the catty<sup>31</sup>, and probably significantly more than that at Liuchow. The retail price at Kweilin, as recorded in the Wuchow Report, was about 56-70 cash a catty. This seems very high, given the

wholesale price of 41.6 cash the catty. The writer of the Wuchow Report seems also to have been unsure of this figure (he states the figure with the rider "it is said"). Retail prices about 10 cash a catty lower (i.e. from 46-60 cash the catty) would seem more likely. The Kwangsi Likin rates are specifically stated in the Wuchow Report to have been imposed there to raise provincial tax income to offset the devastation caused in the Province by the Taiping Rebellion. Among the Likin charges a major one was for the maintenance of facilities along the West River and the costs of policing it.

The Reports are uninformative about the retail price of salt in the north and north-west of Kwangsi, at Liuchow, and up the West River beyond Liuchow, but they imply that it was probably higher than at Kweilin. It is likely that the retail price in the far north and north-west of Kwangsi was about 100 cash the catty: this would have been the cost of the salt sent into Kweichow before Kweichow Likin and transport costs were added to it.

The Nanning area, and the whole of the You River valley, was at one time also provided with salt carried by river from Canton, but, after the Taiping Rebellion, and the imposition of the Likin taxes at Wuchow and elsewhere, such salt became so expensive that salt carried overland from Pakhoi and Yamchow became very much cheaper, and, although this was theoretically a smuggled salt, it became, in the middle nineteenth century, as a consequence of the chaos caused by the Taiping Rebellion, in practice accepted as the normal supply for the area. After the end of the Taiping Rebellion it was found impossible to force the population in this area to accept high-priced Canton salt. Pakhoi and Yamchow salt could retail for 21 cash per catty at Nanning, and presumably for no more than perhaps 50 cash even far down the You River: this salt was almost entirely tax-free within Kwangtung, and paid only a Kwangsi border Likin (of 1.1 cash the catty according to the Pakhoi Report, or of 0.9 cash the catty according to the Lungchow Report) after it left the salt-fields<sup>32</sup>. According to the Lungchow Report, salt exported from Nanning to the west, along the You River, paid an additional Likin of about 3 cash a catty on leaving Nanning for its journey up river, with further charges at various points further up the river, totalling about 1 or 2 cash the catty. It is unlikely that the Canton salt, having paid Kwangsi Likin at Wuchow, could have been retailed at Nanning for less than 50 cash the catty, and it would surely have had to be sold for over 100 cash the catty further up-river: in other words, Pakhoi and Yamchow salt could thus be sold in the south-western part of Kwangsi for about 30 cash the catty less than the Canton salt could. This price differential clearly would have made smuggling down-river into the West River an attractive option, but the Wuchow Report states that the barriers were generally effective in stopping any smuggling here<sup>33</sup>.

At one time, Canton salt had even supplied a good deal of Yunnan Province, according to the Canton and Lungchow Reports. It would have been sent there through Kwangsi and then along the Nanpan River to Kunming. According to the Canton Report, it had been traded for Yunnan copper bars, which were otherwise a trade item difficult to get in Canton<sup>34</sup>. During the later nineteenth century, however, the Report states, the increasing cost of Canton salt (presumably the Kwangsi Likin being the problem, as the transport costs would have been much the same at all dates) led the

Yunnan people to refuse to take the salt any longer: they insisted on selling their copper for silver instead. Given that salt in Yunnan retailed generally for about 100 cash a catty or more, this must imply that, after the 1860s, Canton salt reaching Yunnan was selling for above that figure.

In Szechwan taxes were kept low, but the retail price was quite high, a reflection of the very high costs of producing the salt there in the first place. Taxes, according to the Chungking Report, seem to have come to no more in total than 2.9-4 cash a catty for salt sold within Szechwan (including both the main Salt Tax and Provincial Taxes). Given the 21.2 cash a catty price of the high-quality salt as bought from the manufacturer at the salt-fields, this allowed the salt to be sold to the final consumer in Chungking for 30 cash a catty (thus allowing the local retailer to make a few cash a catty to cover transport from the Salt Depot to Chungking, and the retailer's overheads, expenses and profit). At Chengtu the salt sold for 40 cash a catty (51 cash the catty according to the report by the Consul-General attached to the Ichang Report, although 40 cash is probably the more usual figure: 51 cash the catty probably represents the retail price for the highest quality salt), the extra 10 cash a catty as compared with the retail price at Chungking representing the higher transport costs from the Salt Depot to Chengtu as compared with Chungking.

Szechwan salt exported to Hupeh paid the same level of tax at the Szechwan Salt Depot as salt sold within Szechwan, but paid in addition a Szechwan border Likin of about 3.5 or 5 cash the catty as it crossed the Provincial Border. This brought the total sum of taxes levied by the Central Government or the Province of Szechwan on Szechwan salt exported to Hupeh to about 7.4 cash a catty (according to the Ichang Report about 7.2 cash the catty<sup>35</sup>). This salt, on arrival at the quayside in Ichang in Hupeh, according to the Ichang Report, even with the costs of transport through the Yangtse Gorges and local handling costs, still only reached a price of about 35.5 cash the catty, suggesting transport and handling costs of some 7.5 cash the catty. However, before the salt could be landed at Ichang and carried into the Ichang Intermediate Salt Depot, further Salt Tax, and Hupeh Likin, totalling 27 cash the catty was added to it, raising the Ichang price ex-dockside to 62-63 cash the catty, and the retail price there to over 70 cash the catty (see Table 2 for details).

**Table 2**

Expenses, Salt Tax, and Likin on Salt Landed at Ichang, Cash per Catty

Expense	Cost
Price of salt ex-saltfield in Szechwan	20.0
Szechwan taxes, paid at Chungking	7.2
Overheads, freightage, and profits of merchants carrying salt to Ichang	8.3
<i>Price at Ichang quayside</i>	<i>35.5</i>
Salt Tax (正課) paid at Ichang	11.5
Administrative Fees (公費), Ichang	1.5

Additional Tax (加稅), Ichang	5.0
River Protection Levy (江防), Ichang	2.0
Additional Likin (加釐), Ichang	3.0
Levy for Army Supplies (籌餉), Ichang	2.0
Additional Army Supply Levy (新餉), Ichang	2.0
<i>Taxes levied at Ichang</i>	<i>27.0</i>
<i>Wholesale price at Ichang</i>	<i>62.5</i>
Expenses and Overheads of Ichang retailers including warehousing, brokerage, and portorage	14.5
	more realistically 4.5
Profits of Ichang retailers	3.0
<i>Retail Price at Ichang</i>	<i>80.0</i>
	<i>more realistically 70.0</i>

Notes to Table 2: Of these levies, the taxes imposed in Szechwan were paid into the Szechwan Provincial Treasury. Half the Salt Tax income was spent on pay for the Imperial troops stationed within Hupeh, the other half was hypothecated to an account for the repayment of foreign loans. Half the Additional Tax was paid to the Liang Huai Salt authorities, and half of the Administrative Fees were paid to the Viceroy's Office at Wuchang (Hankow), as was the River Protection Levy (both these sums were in fact used to meet expenses of the Wuchang Arsenal). The Levy for Army Supplies was also used to repay foreign loans. The Additional Army Supply Levy was sent to Wuchang to pay for the troops there. All the rest of the sums levied at Ichang went into the Hupeh Provincial Treasury.

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The major high-price area for the salt trade in 1901, however, was the middle and lower Yangtse River Basin: the Provinces of Kiangsu, Chekiang, Anhwei, Kiangsi, Hupeh, and Hunan. Ichang, with its retail price of at least 70 cash the catty, was part of this high-price area. Throughout the middle and lower Yangtse Basin salt retailed in the major trading cities for at least 50 cash a catty, and in some places for well above that figure, and, away from the main arteries of trade, along the edges of the Basin, it must have retailed for much more, probably for sums up to and even above 100 cash a catty.

Part of the problem of this area was that there were no significant salt-sources within it, except for the Kiangsu and Chekiang sea-coasts in the far east. Other possible salt-sources were outside the region altogether – Szechwan to the west and Canton to the south (other theoretically possible sources – Changlu and Shantung to the north-east and Fukien to the south-east - could not, in practice, provide salt to the Yangtse Basin area because of transport difficulties, especially across the mountains between the Yangtse Basin and Fukien). Traditionally, from at least the Sung, almost the whole of the area, except for Chekiang and the Chinkiang area (Kiangnan, or South Kiangsu), had been provided with salt from the Liang Huai salt-works in North Kiangsu. These salt-works occupied almost the entire North Kiangsu coast: they were divided into

two areas by the old mouth of the conjoined Huai and Yellow Rivers, into the Huaipei (“north of the Huai”) and Huainan (“South of the Huai”) areas, hence the name of the Salt Circuit whose salt-production area they were, Liang Huai, “The Double Huai”. Salt produced here was mostly carried inland to the Grand Canal along the Huai or the multitude of minor rivers in the area, and then down the Grand Canal to Yangzhou on the northern bank of the Yangtse, where the great Salt Depot was<sup>36</sup>, and thence inland along the Yangtse, and inland from the Yangtse especially up the Kan, Han, and Hsiang Rivers. Given the vast population and huge area provided with salt from the Liang Huai salt-fields, these salt-fields were, from at least the Sung, by far the largest and most productive of all the salt-producing areas of China.

South of the Yangtse there were also salt-fields, around Hangchow Bay and near Ningpo (especially in the Chusan archipelago). These formed the salt-production areas of the Liang Che (“Double Che”) Salt Circuit. The Liang Che salt-fields served a much smaller area than the Liang Huai salt-fields – mostly just Chekiang, the Kiangnan area, and small areas of south-east Anhwei, although the wealth and dense population of this region made the Liang Che Salt Circuit still a very important one.

Unfortunately, during the middle nineteenth century, the Liang Huai and Liang Che areas suffered disaster after disaster. In 1852 the Taiping rebels captured the whole of the south bank of the Yangtse from the mouth of the Hsiang down to Chinkiang. The Taipings never managed to capture the sea-coasts of Kiangsu, however, nor the coasts of Chekiang. None of the Liang Huai and Liang Che salt-fields, therefore, fell into Taiping hands. The Taiping, however, occupied some of the Liang Che retail area, and about half of the Liang Huai retail area, and the Taiping troops stopped any junks carrying salt going past Chinkiang down the Yangtse. Liang Huai was thus cut off from contact with much of its erstwhile retail district. The result was that much of the salt of both the Liang Che and the Liang Huai salt circuits could not be sold.

The Government continued for a while to buy the Liang Huai salt, and stockpiled it, but eventually this expedient ceased because there was not enough money to continue it. Salt made in the Liang Huai area could not thereafter be sold. Unemployment among the salt-workers soared, and starvation hit the salt-fields as a result. At the same time, the Huaipei area was devastated when the Yellow River burst its banks, and transferred its course from south of the Shantung Peninsula to north of it (1853). The destruction this caused was immense. Local farmers lost their land, and starvation hit the entire area. The Grand Canal was broken in this disaster, and took several years to put back into usable form. As a result, the transport of salt from both Huai-pei and Huai-nan to the salt depot at Yangchow along the canal was stopped, and salt could not be transported away from the salt-fields<sup>37</sup>. Tens of thousands of boatmen along the canal, and many thousands of salt-workers, were thus thrown out of work, and, again, faced starvation. As a result of these disasters, starving salt-workers, farmers, and boatmen, in desperation, took to banditry. The Nien Rebellion was the result. From 1853 to the early 1860s, the Nien effectively controlled most of North Kiangsu. The effects of all this on the Liang Huai salt-fields can easily be imagined.

Imperial control of the area began to be re-asserted from 1864. Nanking was captured from the Taipings in that year, and the Yangtse was thus re-opened to trade. The Nien were also crushed from about the same date. However, so many people had been killed in the re-establishment of Imperial control, and those who survived had lost so much, that the area could not any longer consume as much as it had before 1852. Indeed, it was not until well into the twentieth century that the area returned to the density of population, and the wealth, which it had enjoyed in the early nineteenth.

It seems probable that the Nanking Viceroy was, after 1864, anxious to provide no further inducement to the people of North Kiangsu to drift into banditry. It would seem probable, therefore, to have been an aim of the Viceroy to get the Liang Huai salt-fields back into maximum production as soon as possible, so that as much of the hungry and unemployed population as possible could be got back into work. Within a few years after 1864, salt-production there was back to close to pre-1852 figures. However, there was, after 1864, just not the population to consume the salt made that there had been, and sales were far less than they had been before. Stockpiling was once again seen as the interim answer – by 1901 over twelve years' output of the salt-fields was in store, and the salt being sold then was that which had been produced in 1889: storage costs, of course, raising the retail price of salt substantially. This over-production was singled out by the writer of the Wuhu Report as the most important reason for the “difficulties under which the legitimate trade ... labour[s]”.

Unfortunately for this aim of ensuring social stability and a return to prosperity in North Kiangsu, during the Taiping years the Yangtse Provinces had got used to using salt from Szechwan (especially in Hupeh) and Kwangtung (especially in Hunan). This salt was better than the Liang Huai salt (cleaner and purer), and cheaper as well. There was, in consequence, after 1864, very considerable unwillingness to go back to using the Liang Huai salt. The Government tried to force Liang Huai salt on these Provinces, since only if the salt could be sold in these Provinces would it be possible to achieve the social stability aimed at in North Kiangsu, but found that it was merely forcing these Provinces close to the point of rebellion as a result. The Government found it could get away with making Canton and Szechwan salt much more expensive, by erecting Likin Barriers designed to protect the Liang Huai trade by bringing the outside salt up to close to the price-levels of the Liang Huai salt. At the same time, however, the Yangtse Provinces, devastated following the Rebellion and its crushing, were desperately short of funds for the essential rehabilitation work. The Central Government, almost, if not entirely, bankrupt after the warfare against the rebels, could not help. The population of the devastated Provinces was so much reduced from before the War, and so much poorer, that it could not even provide the levels of tax-income that the pre-War Provinces had enjoyed, let alone the extra money now so urgently required. New sources of tax-income were thus needed, and salt was an obvious possibility. A full half-dozen Likin Barriers were erected, at every Provincial boundary along the Yangtse, and at a few other places as well, to tax all salt passing them. As a result, the salt-price was raised throughout the region to the highest point it could be got to without triggering salt-riots and rebellion.

A particular problem with relation to the salt trade in the Yangtse Basin was that the region was not, in the later Ch'ing, under unified political control. All the salt-fields, both those in Chekiang and those in Kiangsu, together with Anhwei province, were under the control of the Viceroy of the Lower Yangtse, with his offices in Nanking, while the middle Yangtse Provinces were under the control of the Hukwang Viceroy at Hankow (Wuhan). The Szechwan salt-fields were under the control of the Szechwan Viceroy, while those of Kwangtung were under the control of the Viceroy of the Double Kwang. It seems probable that the Nanking Viceroy had the rehabilitation of Kiangsu as a high priority, and, as part of that, he wanted to extend the trade of the Liang Huai salt-fields as much as possible. The Szechwan and Double Kwang Viceroys may well have been interested in extending the business of their salt-fields into the Yangtse Basin as far as that was possible, thus maximising the income they could levy from the trade, although this was not as urgent a matter for them as the rehabilitation of Kiangsu doubtless was to the Nanking Viceroy. The Hankow Viceroy was predominantly interested in salt only insofar as he could extract tax revenue from the trade, so long, of course, as he could avoid salt-riots. Each Viceroy thus had his own agenda, and their aims and motives differed sharply. Co-ordination between them was beyond the powers of the late Ch'ing Government. This lack of effective co-ordination helped push the salt-price ever higher, as there was no superior authority able to ensure that whatever was done was in the interests of the consumers, and in the long-term interests of the area as a whole, rather than the immediate interests of the officials levying the taxes on the salt. The Hankow Customs Commissioner in 1901 highlighted this aspect of the problems facing the trade, when, among the "difficulties of all kinds" which the salt-trade in the area faced he put first of all "antagonism between the various administrations". After the 1911 Revolution matters were no better, as the area fell into the hands of several rival Warlords, between whom co-ordination was quite impossible most of the time. Unified rule of the whole Basin was possible only from the later 1920s, and even then not entirely effectively.

As a result of all these factors, the trade in salt along the Yangtse in 1901 was fragmented, and subject to a multitude of taxes and imposts of every kind, in a labyrinthine system which defies rational analysis. The 1901 Salt Reports contain some 150 pages in which attempts were made to break this system down and list all the rules under which it laboured, but even this exhaustive account is not entirely satisfactory. As one Customs Commissioner (at Soochow) said, "The taxes on salt in the Liang Huai administration are very numerous, and it has not been possible to give the amount of each tax in detail accurately", and another (at Hankow), "With reference to the investigation of salt matters in general, the complications inherent in the system are of a nature to preclude any full measure of success even where the most patient and thorough researches are conducted". The Hankow Commissioner went on to describe the local salt administration as, "A cumbrous system, which tends to produce confusion and magnify difficulties of all kinds".

At the heart of the problem were provincial Likin Barriers, which, in general, required Likin on salt in the Yangtse Basin to be paid at rates very much higher than the main Salt Tax – three or four times higher, indeed, in general. In addition to this

high level of Likin, the Yangtse Valley was an area where the salt consumption quotas were high, reflecting the pre-Taiping population of the area, and the Salt Tax had, in consequence, to be paid at a premium, that is, at rates above the published ones. To this were added the systemic problems noted above, all of which were to be found in their most extreme forms in this area, arising from convoluted accounting systems involving delayed payments, part payments, allowances on weights and measures, held-over balances, and so on, substantially different exchange rates between the copper cash and silver at different parts of the Valley, and a system of weights and measures regarded, as noted above, by the Hankow Customs Commissioner, with considerable reason, as one of “great confusion”.

Salt was sent in junks, with the holds sealed, from the great central Salt Depot at Yangchow down the Yangtse with papers specifying the area where it was to be off-loaded. There were essentially four of these areas: Central Anhwei (the area supplied by salt through the intermediate Salt Depot at Wuhu), North and Central Kiangsi (supplied through the intermediate Salt Depot at Kiukiang), East Hupeh (supplied through the intermediate Salt Depot at Hankow), and North and Central Hunan (supplied through the intermediate Salt Depot at Yochow, today’s Yueyang). The main Salt Tax and some Kiangsu Likin were charged on the salt at Yangchow before it was loaded on the salt-junk taking it up-river.

The Nanking Report states that the same rate of tax was levied at Yangchow no matter which of these four up-river areas the salt was destined for. We have details of the taxes levied at Yangchow for salt shipped up river in the Wuhu and Hankow Reports. Both refer to taxes levied there of about 5.1 – 5.2 cash the catty. The Wuhu Report (see Table 3) considered these imposts to comprise 4.3 cash the catty Salt Tax and associated levies, and 0.9 cash the catty administrative charges, and the Hankow Report 3.0 cash the catty Salt Tax and associated levies, 0.9 cash the catty Kiangsu Likin and associated levies, and 1.3 cash the catty administrative charges. Given the coincidence of the totals (5.1 and 5.2 cash the catty<sup>38</sup>), it is likely that the taxes imposed at Yangchow were indeed identical for these two destinations, the differences arising from the difficulties, as noted above, of accurately distinguishing between the categories of payment.

Junks would be laden at Yangchow with salt destined for (for instance) Hunan. Once all Yangchow dues were paid, including Kiangsu Likin, or assessed where deferred payment was in question, the junk would be provided with the appropriate Hunan papers, and the holds would be sealed by the Yangchow Salt Monopoly staff, and the junk would be given clearance to leave Yangchow. The junk would then be stopped and checked at the Kiangsu border, and then again at Wuhu, Kiukiang, and Hankow. At each stop the Likin Barrier staff would ensure that the salt as loaded at Yangchow was still all on board with the holds still sealed with the Yangchow chops (at each Barrier the papers would be further chopped with the seal of the Likin Barrier, and a corner, which was numbered so that it could be shown which set of papers it had been come from, cut off to ensure the papers could not be fraudulently reused, and an Inspection Fee would be charged, but, in most cases, no additional Likin was levied<sup>39</sup>). The junk would then be passed on to the next Barrier. At Yochow, if a further inspection showed that the holds

were still sealed, then they would be opened by the Yochow Salt Monopoly staff, and the salt would be unloaded by the Salt Monopoly staff, and passed into a bonded warehouse, the Intermediate Salt Depot, where it would be re-weighed and re-bagged in accordance with the Hunan scales, and when Hunan Likin and the associated fees and charges would be assessed on it. The salt merchant who had brought the salt from Yangchow would pay any Salt Tax outstanding, and those Hunan charges which were his responsibility, so that the receipts for all these payments could be added to his Yangchow papers. He could then sell the salt on to the local Hunan salt merchant. He would then return to Yangchow. At Yangchow he would have to produce all the papers issued for this journey, with their chops, and the receipt for the Salt Tax as paid at Yochow. These papers would then be reconciled with the various corners which had been cut off en route and which would, in the meantime, have been sent back in batches to Yangchow, and filed: until this had been completed the salt merchant would not be allowed to start the process of buying his next consignment of salt at Yangchow. The salt unloaded by the Salt Monopoly staff at Yochow would then be stockpiled in the Intermediate Salt Depot at Yochow until it could be released by the Salt Monopoly to the Hunan salt merchant for onward sale into the interior of Hunan, when the Hunan Likin, storage fees, administrative charges etc, would be paid by the Hunan salt merchant. The Hunan salt merchant would then move the salt to his own warehouse, from where he would sell it on to local merchants for retail sale, or else arrange for it to be transported up-country to a smaller local warehouse for onward sale. Similar systems were in use in Hupeh, Kiangsi, and Anhwei.

Table 3 shows a list of the expenses involved, in this case for salt destined for Anwhei, and shipped to Wuhu, and Table 4 gives the comparative costs for the main Yangtse markets, as far as we have them. Table 3 is greatly simplified from the figures given in the Wuhu Report. Table 4 shows a generally coherent picture: the price of salt ex-depot at Yangchow in 1901 was about 16-17 cash the catty, freightage and Provincial Likin and associated costs between Yangchow and the Intermediate Salt Depots added 41-44 cash the catty, and the expenses, overheads, and profits of the provincial salt-merchants brought the retail price up to 50-52 cash the catty. The Wuhu Report, in a Supplementary Note of 1903, notes that the Nanking Viceroy increased the Likin payable on salt destined for retail within Anwhei by 7 cash a catty in 1901-1903, thus raising the retail price at Wuhu to 57 cash the catty, and giving grounds for apprehension that salt riots might be triggered<sup>40</sup>.

**Table 3**

Taxes, Other Imposts, Fees and Other Expenses for Salt sold at Wuhu. Cash per catty

Expenses	Cost
Price of Salt ex-saltfield	3.8
Freight to Yangchow and associated costs	2.8
Landing, portorage, and storage costs at Yangchow	0.4
Semi-Official Huai-nan Salt Guild Subscriptions	1.2
Profits of Salt-Field merchant	3.3
<i>Wholesale Price as entered into the Yangchow Salt Depot</i>	<i>11.5</i>

Salt Tax and associated levies	4.2
Semi-Official Yangchow Salt Guild Subscriptions	0.5
Levies for charitable uses	0.1
Miscellaneous fees at Yangchow	0.3
<i>Ex-Depot wholesale price, Yangchow</i>	<i>16.6</i>
<i>Yangchow Retail Price</i>	<i>22.0</i>
Freight to Wuhu and associated costs	1.9
Landing fee at Wuhu and portorage	0.2
Rent of storage space at Wuhu	0.8
Levies for charitable uses	0.1
Miscellaneous expenses at Wuhu	0.3
Anwei Likin and associated levies, 1901	14.0
Additional Likin, 1901-1903	7.0
Miscellaneous fees, Wuhu	0.1
Brokerage, Wuhu	0.6
Profit of merchant carrying salt from Yangchow to Wuhu	6.6
<i>Costs added between Yangchow and Wuhu, 1901</i>	<i>24.6</i>
<i>Costs added between Yangchow and Wuhu, 1903</i>	<i>31.6</i>
<i>Ex-Depot wholesale price at Wuhu, 1901</i>	<i>41.2</i>
<i>Ex-Depot wholesale price at Wuhu, 1903</i>	<i>48.2</i>
Expenses, overheads, and profits of Wuhu retailer	8.8
<i>Retail price at Wuhu, 1901</i>	<i>50.0</i>
<i>Retail Price at Wuhu, 1903</i>	<i>57.0</i>

Notes to Table 3. Modified from tables in the Wuhu Report.

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**Table 4**

Comparative Costs of Salt Shipped up the Yangtse

Expenses	Wuhu	Yochow	Hankow	Kiukiang
Ex-Depot price, Yangchow	16.6			
Costs between Yangchow and Intermediate Salt Depot (including Likin)	24.6 (1903: 31.6)		23.6	23.3
Ex-Depot price, Intermediate Salt Depot	41.2 (1903: 48.2)	42.2	43.7	
Retail price	50.0 (1903: 57.0)	52	50	52

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North Anhwei, and north-eastern Kiangsu, were provided with salt from the Liang Huai salt-fields directly along the Huai River, and not along the Yangtse, and

so did not pass through the Yangchow Salt Depot. These areas had Likin regimes of their own (the area was divided into three Likin districts, to which the eastern parts of Kiangsu, around the salt-fields, were added as two more). In these areas, the Likin charged was much less than that charged at the Yangtse Likin Barriers (the salt-trade to these areas had not been interrupted by the Taiping Rebellion, and the Likin regimes here may represent rates of impost closer to those general throughout the Yangtse region before the Rebellion).

Salt sold retail in Yangchow (according to the Chinkiang Report) for 22 cash the catty. This would reflect the cost of the salt ex-saltfields, transport to Yangchow, storage in Yangchow, and the Salt Tax and Kiangsu Likin imposed there, plus the expenses, overheads, and profits of the Yangchow retailer.

The Chinkiang and Nanking Reports note that the taxes and Likin imposed at Yangchow for salt to be sold from there within Kiangsu were higher than those imposed on salt to be shipped up river, totalling something above 7 cash the catty. The Nanking Report speaks of 3.0 cash the catty Salt Tax and associated levies, 3.5 cash the catty Kiangsu Likin and associated levies, and 0.7 cash the catty administrative charges, totalling 7.2 cash the catty overall. The Chinkiang Report speaks of 4.95 cash the catty Salt Tax and associated levies, and 2.08 cash the catty Likin and associated levies, totalling 7.03 cash the catty overall. It will be noted that the Salt Tax and associated levies were probably demanded at the same rate as demanded for salt being shipped up-river, at 3.0 or a little over 3.0 cash the catty, depending on where the definition line for Salt Tax and its associated levies was drawn. The extra sums demanded comprised, clearly, a much higher figure for Kiangsu Likin, at about 2 cash the catty above what was taken from salt shipped up river. Salt leaving the Yangchow Salt Depot for retail sale within Kiangsu, therefore, would thus have been sold at a wholesale price of 18.7 cash ex-Depot (11.5 cash the catty ex-depot pre-tax price, plus this 7.2 cash the catty levied at the Depot). In these circumstances, the retail price for salt in Yangchow itself of 22 cash the catty, is about what is to be expected with an ex-Depot wholesale price of 18.7 cash the catty. The Nanking Report (Nanking lies within Kiangsu Province, and so paid no additional tax after the salt left the Yangchow Salt Depot) notes a retail price in that city of 30 cash the catty, the extra 8 cash the catty as compared with Yangchow representing the freightage costs from Yangchow to Nanking.

The Likin charged for the northern parts of Anhwei and north-eastern Kiangsu, the areas where the salt did not pass through the Yangchow Salt Depot, varied, according to the Chinkiang Report, between 1.26 cash the catty (probably the figure for Kiangsu Likin, charged on the salt sold within Kiangsu) and 9.43 cash the catty (probably including both the Kiangsu Likin and an Anhwei border Likin charged on salt sold for North Anhwei). To this must be added Salt Tax, probably at about 3 or 4 cash the catty. Adding transport and handling charges to these figures it would seem likely that salt retailed along the Huai at between about 20 and about 35 cash the catty. The Wuhu Report thus states that the retail price at Tienchang, in Kiangsu, on the Anhwei/Kiangsu border near Xiayi, was 26 cash, and in North Anhwei (the Huabei area) generally about 34. Given these retail prices, so much lower than those in force at Wuhu and along the

Yangtse, it is not surprising that the Wuhu Report notes that there was a major problem of Liang Huai salt sent quite legally along the Huai, all taxes paid, into North Anhwei, and then being smuggled south from there down towards the Yangtse. The Wuhu Report notes that the additional Likin imposed on salt at Wuhu in 1901-1903, by increasing the price differential to over 25-30 cash the catty, had seriously exacerbated this problem.

The Reports detailing conditions in Chekiang and South Kiangsu (Kiangnan) are rather less revealing than those from the Yangtse Valley, but strongly suggest that tax-levels in the Liang Che area were also high. The Liang Che salt did not travel far, mostly within Chekiang Province, but providing salt also to the Kiangnan area of Kiangsu (the Chinkiang area), and also to the extreme south of Anhwei (south of Huang Shan, around Tunxi).

There were salt-works close to many of the major cities, especially Hangchow. Salt was sold ex-saltfield at 5-7 cash a catty at the Hangchow salt-fields suggesting a level of tax at the salt-fields of at least 2 or 3 cash the catty. At the Hangchow Salt Depot Salt Tax, together with a high Chekiang Provincial Likin, was levied. The Hangchow Report gives the taxes levied (including Likin) as the Main Salt Tax of 12 cash a catty for salt for northern Chekiang, and of 8 cash a catty for salt for the Chinkiang (Kiangnan) area of Kiangsu, plus some other taxes and fees together totalling about 9 cash the catty, thus representing total taxes of 17-21 cash the catty levied at the saltfields and the Salt Depot. The ex-Depot wholesale price of the salt was, therefore, probably about 28-30 cash the catty for salt for northern Chekiang, entirely in line with the retail price quoted for Hangchow of 32-34 cash the catty, and about 25 cash the catty for salt for Kiangnan. Because of the differential tax rates for Chekiang and Kiangnan, salt leaving the Hangchow Salt Depot would have had to leave the depots in sealed holds specifying the destination, and must have been inspected en route and at the destination, although the *1906 Salt Report* gives little detail.

Transport within Chekiang, and Kiangnan, with its flat lands, crossed by the Grand Canal, and with a multitude of streams, creeks, and rivers, was generally easy, and freight charges would not have been high. Nonetheless, transport costs brought the retail price up to between 32 and 40 cash the catty generally through the area. The retail prices recorded are Chinkiang, 32 cash the catty, Hangchow 32-34, Shanghai 40, and Huichow - today's Wuxing between Hangchow and Shanghai - 36, at Soochow, well inland, 33-36 cash the catty, and, in Southern Anhwei, around Tunxi, 38 cash the catty (the Wuhu Report states, however, that Liang Che salt sold around Tunxi for about 34 cash the catty). In 1907-1911 salt sold retail in the market towns around Changzhou, half-way between Shanghai and Chinkiang, for about 44 cash the catty: given the sharp inflation of these years, this probably implies a price there in 1901 of about the same as at Soochow<sup>41</sup>. It is the Hangchow report which gives the retail price for Liang Che salt at Shanghai as 40 cash the catty. Salt for Shanghai was transported there from the Hangchow Salt Depot along the Grand Canal, the longer transport thus raising the price at Shanghai above that at Wuxi or Soochow. The Soochow Report, however, notes that smuggled salt was abundantly available at Shanghai, at 20 cash the catty. This would

have been salt shipped directly to Shanghai from Chusan or Wenchow by steamer, thus by-passing the Hangchow Salt Depot.

Salt in the eastern part of Chekiang, around Ningpo, mostly from saltfields in the Chusan archipelago, cost rather less than salt in the area north of Hangchow: salt there was taxed at only 10-11 cash the catty in total and retailed in Ningpo for 18-20 cash the catty. In the south of the Province, around Wenchow, salt was even cheaper, retailing at only 9-10 cash the catty, suggesting taxes of no more than 1 or 2 cash the catty.

It is noteworthy that the retail price for salt at Chinkiang was significantly higher than at Yangchow, in the Liang Huai administration area, just across the Yangtse (32 cash as against 22). It is probable that the high taxes levied on the Liang Che salt for retail in the Chinkiang area (Kiangnan) were deliberately designed to ensure that this salt could not compete with the Liang Huai salt outside that area: the 10 cash a catty price differential at the mouth of the Yangtse would have been a very effective barrier to Liang Che salt going up-river to Nanking or Wuhu. The lower retail prices at Ningpo, and the much lower prices in the far south of Chekiang, around Wenchow, would have been no problem in earlier days as, if this cheaper salt had been carried round by junk to the mouth of the Yangtse, transport costs would have provided as effective a price differential as the high Likin did for the salt-fields closer to the Yangtse, but, by 1901, the advent of steamers allowed Ningpo or Wenchow salt to enter the Yangtse economically, and the Hankow report notes this as a rising smuggling problem: it was probably, as noted above, this salt that was on sale in Shanghai at 20 cash the catty.

Salt from the Liang Che reached the southern areas of Anwei, around Tunxi, south of Huang Shan, as noted above, where it retailed for about 34-38 cash the catty. The area immediately north of Huang Shan in Anwei, around Taiping, got its salt from Wuhu, by transport along the Qingyi River. The retail price of the salt in these inland areas of Anwei cost six cash the catty above the Wuhu retail price, to cover the freightage from Wuhu, i.e. 56 cash the catty in 1901, and, after the sharp increases in Anwei Likin in 1901-1903, 63 cash the catty. Since there were many roads over the Huang Shan range, it was easy for Liang Che salt, imported quite legally to the Tunxi area, all taxes paid, to be smuggled over the mountains towards the Yangtse. The Wuhu Report notes that this was a serious problem after the increase in the Anwei Likin, since the 25-30 cash a catty price differential made smuggling very attractive.

If, as seems likely, high taxes were imposed in an attempt to block Liang Che salt from being traded up river into the Yangtse Basin, this was also the procedure used to try to block Szechwan and Kwangtung salt from competing with Liang Huai salt in the major part of the Yangtse Basin. In the Taiping period, when Liang Huai salt could not travel up the Yangtse, Szechwan salt had had an effective monopoly of the salt-trade in Hupeh, and Canton salt in all those parts of Hunan not under Taiping control. Both were sharply cheaper than the Liang Huai salt, and there was understandable reluctance on the part of consumers to go back to the Liang Huai product after 1864. While the need to bring North Kiangsu back into a situation of social stability meant that Liang Huai salt had to be allowed to regain much of its former Yangtse Basin monopoly, it was found

that to try to eject Szechwan salt from western and central Hupeh, or Kwangtung salt from southern Hunan, would be impossible without triggering riots. It was eventually, therefore, decided to make Szechwan and Canton salt much more expensive, by the imposition of punitive Likin, so that, at the points where it was decided that the Liang Huai salt had to regain its old monopoly, the price of the rival product was about the same.

Kwangtung salt had always been sold in the extreme south of Hunan, around Chenchow and Yungchow, from at least the Sung. The arrangement that was come to after 1864 was to allow this ancient trade to continue as it always had. A small Hunan Likin (2.2 cash the catty) was charged on Canton salt crossing the provincial border at Pingshek. Salt sold for this export trade paid, according to the Canton Report, Kwangtung Transit Tax at a rate rather less than that levied on salt for Wuchow, probably at about 4 cash the catty. The Yochow report states that this salt sold retail in Chenchow for 11-12 cash the catty. This must be an error. The ex-Depot price cannot have been less than 13-15 cash the catty, and transport costs would have been high, involving transshipment from barges to sampans, and then portering across the Chingling Pass. A retail price of 25-30 cash the catty would seem much more likely, and a retail price of precisely this figure (20-40 cash the catty) for Kwangtung salt in the Chenchow area is in fact given elsewhere in the *1906 Salt Report*. Two Likin Barriers, however, to the north of Chenchow, one just south of Hengyang, and the other between Hengyang and Changsha, ensured that this relatively low retail figure did not extend far into Hunan. The retail price for Kwangtung salt at Hengyang was thus pushed up to 52-53 cash the catty (60-70 cash the catty, according to the Yochow Report, probably in error) and at Changsha, if Canton salt had reached that far, the retail price would have been well above the 56 cash the catty that Liang Huai salt retailed there for, probably the 60-70 cash the catty of the Yochow Report. The Hengyang Likin must have been a swingeing 20-25 cash the catty, or thereabouts, and a further 10 cash the catty at the second Barrier. The only reason for such a massive tax would have been, as the Yochow Report explicitly states, the wish to exclude Kwangtung salt from Changsha and the north. The other routes used for the export of Kwangtung salt to Hunan (between Kweilin and Lingling, and between the He River and the Hsiao River Valleys), via Yungchow, had Likin Barriers of exactly the same character, designed to ensure that any Kwangtung salt reaching Yungchow or Hengyang, by whichever route, could not retail in those cities for less than 52 cash the catty. It might be assumed that these punitive Likin regimes would have encouraged smuggling of Kwangtung salt around them, but none of the Reports suggest that this was a problem: presumably the Likin barriers were effective in keeping Kwangtung salt to the area between Hengyang and Yungchow and the Provincial border.

Kwangtung salt, exported from Swatow and Canton, had also long been sold in the extreme south of Kiangsi, in an area approximating to the present-day Prefecture of Kanchow. According to the Swatow Report, the Swatow salt left Swatow for the border at a price of about 6 cash the catty. No border Likin seems to have been imposed. A good deal of salt from Fukien was also exported to Swatow and took part in this trade: this salt was taxed on leaving Fukien, but only at the very low rate of 0.2 cash the catty. Even taking into account the costs of the portering required over the Wuyi Shan

range of mountains along the Provincial border, it is unlikely that the retail price even as far inland as Kanchow was much above 20-25 cash the catty. North of Kanchow, however, a Likin Barrier ensured that the Swatow salt went no further down the Kan River, by pricing it out of competition. Unfortunately, the Canton, Kiukiang and Swatow Reports are extremely vague on the details. As with the case in Hunan, there is no suggestion in the Reports of any major smuggling of Swatow salt past this Kiangsi Likin barrier.

According to the Ichang Report, as noted above, Szechwan salt was priced at about 35.5 cash the catty when it reached the Hupeh end of the Yangtse Gorges at Ichang (including about 7.2 cash the catty Szechwan taxes and 8.3 cash the catty freightage and overheads). Liang Huai salt, by the time it had made the long journey down the Yangtse to Ichang would have been very expensive. In order to reduce the competitiveness of the Szechwan salt, therefore, a huge Likin was put on it at Ichang – 27 cash the catty (the Ichang Report explicitly states that this had all been imposed in the period after 1854, having been raised steadily from an initial 2.5 cash the catty in 1854, to 9 in 1855, 13 in 1861, 18 in 1867, 20 in 1884, and then to 23 later in the same year, 25 in 1894, and 27 in and from 1899). This raised the wholesale price of Szechwan salt at Ichang to 62.5 cash the catty, and the retail price there to probably about 70 cash the catty, or a little above that figure.

The Ichang Report states that the local retail price of salt was 80 cash the catty, but a rather lower figure, of perhaps 70 cash the catty, is more probably closer to the correct figure: the figure of 80 cash may well be a misprint. According to the Ichang Report, the local Ichang retail price covered the wholesale price (62.5 cash the catty), unspecified local portering and repacking costs, and profits to the retailer of 2-3 cash the catty. While no estimate is given for the local handling costs, they cannot have been more than 3 or 4 cash the catty at most.

The Shasi Report states that 30% of the Likin imposed at Ichang was exempted for salt shipped on to Shasi (the tax differential would, once again, have required the salt to be transported in sealed holds from Ichang). This would have reduced the wholesale price at Ichang for Shasi-bound salt to about 54.4 cash the catty. Freightage to Shasi added 1.3 cash, so that the wholesale price at Shasi was 55.8 cash the catty, allowing a retail price there of 58 cash the catty. The Chungking Report suggests that Szechwan salt sold in Hupeh for 60-70 cash the catty retail, which probably reflects these Shasi and Ichang retail prices.<sup>42</sup>

As mentioned in both the Ichang and Hankow Reports, of the 27 cash a catty Hupeh Likin imposed at Ichang, a percentage was paid to the Nanking Viceroy as a gesture of recognition that the western and central parts of Hupeh had once been in the Liang Huai salt monopoly area, and another substantial percentage went to the Hukwang Viceroy at Wuhan towards his administrative expenses.

At these rates of tax and the consequent high retail prices, salt-smuggling would, clearly, have been attractive. Since the only effective route between Szechwan

and Central and North-western Hupeh was through the Yangtse Gorges, however, traffic could be effectively policed by the Ichang Salt-Smuggling Preventive Office, which had a number of control-points between the Gorges and Ichang. None of the Reports suggest that much Szechwan salt was able to be smuggled through this tight control system (the Hankow Report suggests no more than 10% above the official trade<sup>43</sup>), although a considerable amount was smuggled overland into the extreme south-west of Hupeh. There is, however, an interesting remark in the Tientsin Report (confirmed by remarks in the Chinkiang and Soochow Reports), that some considerable amount of Szechwan salt was sent to South Honan, where it sold for 50 cash the catty retail. This salt must have been sent from Ichang or Shasi, under seal, along the Han River, eventually to Nanyang (i.e. along a route much the same as that taken by the railway today). Given the high transport costs implied, this salt cannot have paid Likin at Ichang, to still sell for 50 cash the catty in the Nanyang area of Honan. The Reports imply that the trade was legal: it must have been treated as an exempt trade by the Hupeh authorities. The other salts available in Honan, from Shantung and Tientsin, cost about 25-30 cash the catty in the northern part of the Province. Transport of these salts towards the south of Honan would have made these salts cost at least 40-45 cash the catty by the time they reached Nanyang. Szechwan salt sold in southern Honan, despite its relatively high retail price, because of the higher purity and cleanliness of the Szechwan salt – wealthy Honan households must have preferred it for table-salt.

The Ichang wholesale price for Szechwan salt (62.5 cash the catty), however viewed, was a massive figure. Since all the salt for the western third of Hupeh was sold on from Ichang at this base rate, the retail price for salt by the time it reached the extreme south-west, around Zigui, or the north-west of the Province, 140 miles and more from Ichang, must have been pushed up to 90 or even 100 cash the catty by the transport and handling costs.

The Shasi retail price for Szechwan salt was approximately identical to that of Liang Huai salt in the same market: it is probable that the retail price of the two salts in Ichang was also approximately the same. By thus tinkering with the tax levels, the Szechwan and Kwangtung competitors to the Liang Huai salt in Hupeh, Hunan, and Kiangsi were, in theory, reduced to equality of price. In fact, however, the very poor quality of the Liang Huai salt as against the much higher quality of the Szechwan and Kwangtung salts ensured that the competitors faced no real competition where prices were the same. Thus the Wuhu Report states: “The Liang Huai salt ... is hardly fit to eat, containing as it does 20 per cent of impurities such as sand, earth, straw, wood etc. It is of a dirty greyish-yellowish colour and full of moisture ... Is it to be wondered at that the ... districts ... upon whom the authorities force dirty, unwholesome Huai salt ... prefer to break the law and buy the better and cheaper ... salt?<sup>44</sup>” Thus, the Liang Huai salt only secured a real monopoly after 1864 from Hankow to the east, and from north of Hengyang and Kanchow, where it was significantly cheaper than the alternatives.

Thus, political problems in the aftermath of the Taiping Rebellion pushed the retail price of salt throughout the Yangtse Basin to 50 cash the catty and more, almost entirely due to massive Likin imposts aimed at providing the cash needed for

rehabilitation of the area, in sharp distinction from the rest of China where retail prices closer to 15-25 cash a catty, or even less, were normal. In places, as along the mountainous rim of the Yangtse Basin, prices must have risen significantly higher even than 50 cash the catty, probably even as high as 100 cash the catty, and more than that in the mountains of Kweichow and Yunnan.

*The Real Price of Salt in 1901: Relationship with Wage-Levels*

Salt was, to repeat, generally quite cheap over most of China, but was expensive throughout the Yangtse Valley, and in the mountainous south-west.

These retail prices, as detailed in Table 1, need, however, to be put into perspective. In the period 1901-1906 the exchange rate between the standard copper cash and Sterling was normally about 35-40 cash to the English penny<sup>45</sup>. In Tientsin or Canton an English penny would thus have bought over two catties of salt – about three English pounds – and about three catties, or four pounds, in Hong Kong. Even in Hankow a catty of salt would only have cost rather less than an English penny-halfpenny. In Yunnan or Kweichow, where the price of salt in China was at its highest, nonetheless, a catty of salt would have cost no more than four pence sterling at most. In international terms, the price of salt in China was, therefore, low.

Of course, it is not so much the price of salt in China as compared with other places which is of importance, but the degree to which the poor in China could afford to buy it: in other words the price of salt in terms of the labour of the unskilled. What needs to be considered is the price of salt in China as a function of the income of the poor; that is, the length of time an unskilled coolie would have had to work to earn enough to buy a catty of salt. In this section the relationship of the price of salt to the average daily pay of an unskilled labourer (coolie) is discussed, and, in the following section, the relationship between the price of salt and the price of the basic staple of life: rice.

There is no published systematic or comprehensive survey to date on wage-rates in late nineteenth and early twentieth century China, and, generally, scholars know little about income levels in China in this period<sup>46</sup>. Se Yan has estimated that the national average income of low-income workers in China in the period 1900-1902 was about 12.36 silver dollars a year (about 340 standard cash a day). However, this figure covers a wide range of occupations, from unskilled labourers (coolies) through semi-skilled labourers such as carpenters and stonemasons, to many types of artisan and low-level white-collar workers. Obviously, the average wage of the unskilled labourer, the bottom level of this range of occupations, would have been well below this figure, probably about half (perhaps about 170 standard cash a day). As a national average, too, this overall figure does not show regional variations, which were substantial.

The Chinese Imperial Maritime Customs produced reports on economic activities in the Treaty Ports, and, more broadly, in the Provinces in which the Treaty Ports were located. These reports are extremely rich, and are of enormous value for

scholars working on the economy of China in the late nineteenth and early twentieth centuries.

Table 4 below gives information, mostly taken from the Imperial Maritime Customs reports about the wage rates of unskilled labourers (coolies) from the period about the same as the salt-price figures detailed above.

It will be seen from the table that, in a number of places the ratio of pay between an unskilled labourer (coolie) and a semi-skilled labourer (carpenter, blacksmith) is about 1:1.5. Where the information gives figures for semi-skilled labourers, but not for coolies, this ratio has been used to give an approximate figure for the coolie wage-rate. Where the sources give a range of figures, the lowest is used to calculate the daily wage of the unskilled coolie. In the Table, whatever form the original rate is given in, an approximate figure for the daily wage, in standard cash, for a coolie is calculated and given, for ease of comparison. The figures given below, where they are not given in silver dollar form, are mostly given in local cash. No exact conversion figure for silver roubles to cash (Lungchingsun) is available, nor is it at all clear what the “small coin” of Antung might be, but it seems likely that the silver rouble was treated as equalling 1,000 cash (i.e. that it was the equivalent of the silver dollar), and it seems probable that the “small coin” was the half-rouble, equal to 500 cash, so that ‘half a small coin’ equals 250 cash. The *tiao* is probably equivalent to a mace (139 cash). The first figure given for Santuao is probably an error, the second figure is more likely.

The figures are, of course, inexact, but are broadly sufficient for the purposes of this paper. They disclose, as is discussed further below, that the daily rate of an unskilled labourer in China varied from about 250 standard cash the day to about 100 standard cash the day, and show clear regional variations in wages. Despite all the problems with the original data the information seems reasonably clear, and it allows meaningful discussion.

**Table 4**

Wage-rates of Unskilled Labourers in China in 1901

City	Wage Information (daily unless otherwise noted)	Daily Wage of unskilled labourer in Standard Cash
Lungchingsun (龍井村, near Newchuang, Manchuria)	coolies 0.25 roubles: carpenters 0.35 roubles daily	250
Antung (安東, today Dandong, on border with Korea)	labourer 0.5 small coin: carpenter, bricklayer 0.7-1.0 small coin: stonemason 1 small coin	250
Dairen	(1902) coolies \$0.25-0.35: carpenters \$0.4-0.6: blacksmiths \$0.5-1.0:	250

	stonemasons \$0.4-0.6	
Chefoo	(1902) coolies 250-300 cash: blacksmiths 4-5 tiao, carpenters and stonemasons 400 cash	250
Chinwangtao (Qinhuangdao, on border of Chihli and Manchuria, near Shanhaikuan (山海關))	servants \$7-15 monthly	230
Manchuria, coal-mines	(1903) Coalminers \$0.22	?200
Santuao (三都澳, near Ningte, Fukien)	tailor & stonemason \$0.12: carpenter \$0.15 (another source says coolies \$6-10 monthly)	probably 200
Canton	coolies \$0.3, servants \$7 monthly: sailors & firemen \$9 monthly: gigen \$8-9 monthly	300
Hong Kong	coolies 200-250	200
Lappa (Macau)	common labourer \$0.25	250
Peking	unskilled labourers \$0.2, carpenters, builders \$0.3	200
Shanghai	(1894) coolies \$5-10 monthly, male factory workers 4-7d daily (1905) unskilled male factory-hands \$0.25	140 ) ?180 225)
Soochow	silk-weavers 200 cash	?125
Wuchow	servants \$60-100 annually	165
Kongmoon	common workman \$4 monthly	115
Nanning	farm-hand \$0.1-0.12: skilled workman \$6 monthly	125
Pakhoi	carpenters and stonemasons \$0.15	?100
Tengyueh (騰越, today Tengchong, near border with Burma, Yunnan)	unskilled labourer 0.1-0.5 taels: skilled labourer 0.25 taels	140
Wuchang/Hankow	(1894) "average" workers cotton industry \$3.5 monthly (1905) unskilled workers \$0.15-0.35	?140
Chungking	trackers 2500-3500 cash monthly: sailors 7000-10000 cash monthly	85
Ichang	carpenters & stonemasons 220 cash: blacksmiths and stonecutters 200 cash	? 140
Changsha	coolies \$6-8 monthly	200 (probably less than this)
Tientsin	(1905) Experienced handicraft workers \$0.35	135
Kiangsi, coal-mines	(1909) unskilled labourers 200 cash	140

Zin County, Chihli	carpenters, masons, blacksmiths 250-300 cash	?165
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Note to Table 4: See Map 2 for these places- - - -

It will be seen from the Table above, despite the many questions thrown up by the figures, that the figures suggest that a coolie would earn about the same as in Hong Kong in most of the major coastal cities, that is, somewhere between 200 and 250 standard cash for a day's labour. This was true of Chefoo, Canton, Swatow, Macau (the Lappa figure would represent wages in Macau and on the Macau border), Santuao, Peking, and Chinwangtao on the border of Chihli and Manchuria, Dairen, and generally in Manchuria. Indeed, if anything, wages in Manchuria in particular may well have been marginally higher than in Hong Kong, (although the 1902 figures for wages for coal-miners in Manchuria are significantly lower than the other Manchurian figures, and may suggest that this is a more-apparent-than-real position). The figures also suggest that wages in Canton and Macau were also high, perhaps a quarter above Hong Kong rates, although the 300 cash a day wage recorded for Canton may well be an error.

The figures suggest, however, that Shanghai was an area of rather lower wages, with wages at about 180 cash a day, possibly because of the huge influx of people into the city looking for work and so depressing wages: wages in Soochow were also low, probably about 125 cash a day, clearly in line with the relatively low wage-rates in Shanghai, suggesting that the Shanghai figures are basically accurate<sup>47</sup>. Wage rates in Tientsin as suggested by the figures also seem low, probably for the same reason as at Shanghai, i.e. wages depressed because of the large numbers of immigrants seeking work. The coal-miners from Zin County, not far from Tientsin, in 1903 must have received much the same level of wages as unskilled workers in Tientsin, or only marginally more: this set of figures can be taken as confirming the general accuracy of the Tientsin figures.

Inland, however, along the Yangtse, the figures suggest that average wages for unskilled labourers dropped quickly. Unskilled labourers in the Kiangsi coalmines in 1909 earned no more than 200 local cash a day: given the sharp inflation in the period from 1901 to 1911, it is unlikely that they could have earned more than about 140 local cash a day in 1901. This would be in line with wages in the Hankow/Wuchang area, where wages for unskilled labourers are noted as being about 120 local cash a day in 1894 and 150 in 1905, suggesting that they would have been about 140 in 1901. Wages in Changsha are given as being rather more – about 200 cash a day – but this may be on the high side. Wages were at the much the same level as at Hankow as far up the Yangtse as Ichang, where the daily wage was again about 140 local cash, equivalent to about 140 standard cash. Further up the Yangtse wages were lower still: in Chungking, no more than 85 cash a day.

Low wage levels were also normal in the South, inland from the major coastal cities, and especially in the far south. Kongmoon, inland from Macau, had daily wages of only 115 cash, Nanning about 125, Pakhoi about 100, Tengyueh (in Kwangsi, near the border with Burma) about 140. Wuchow, on the borders of Kwangtung and

Kwangsi, presumably because of its relative closeness to Canton, had somewhat higher wages, about 165-200 cash a day.

Broadly speaking, therefore, these figures thus suggest daily wage rates of between 200 and 250 standard cash a day in most of the major coastal cities, in Peking, and in Manchuria, but with wage rates about a fifth less than that in Shanghai and Tientsin. In the south and centre, in the hinterland of the coastal cities, wage rates dropped quickly the further inland one went, by between a fifth and a third, depending on ease of access to the major city on the coast. Along the Yangtze Valley, wage rates seem to have dropped steadily, to about two-thirds of the Shanghai rate in the centre of the Valley (Wuchang and Ichang), and to only about half that rate at Chungking. Chungking, therefore, seems to have had wage-rates no more than about a third those current in Manchuria.

Taking these wage-rate figures, therefore, in Hong Kong an unskilled worker needed to work for only about 40 minutes to earn enough to buy a catty of salt, and would have had to work no more than about  $3\frac{1}{4}$  hours – half a morning's labour - to earn enough to buy himself a year's worth of salt (5 catties: this figure for a year's worth of salt is for free-salt, table salt, only, and assumes purchase of salt-based products such as salted fish, salted vegetables, and soy sauce as well), and about thirteen hours – a little over a day's work - for a whole year's supply for his whole family: a skilled craftsman would have earned enough to buy a year's supply for his whole family in no more than about half a morning's labour<sup>48</sup>. The real price of salt, compared with unskilled labour wage-rates, was about the same as in Hong Kong in most of the major coastal cities, with unskilled labourers having to work for less than an hour to earn enough to buy a catty of salt (Chefoo, about 8 minutes labour; Pakhoi, about 18 minutes; Manchuria about 25 or 30 minutes<sup>49</sup>; Macau, about 35 minutes<sup>50</sup>; Canton, about 45 minutes; Peking, about 55 minutes).

In Shanghai, however, a skilled worker would have had to work for about  $2\frac{1}{4}$  hours to earn enough for one catty of salt, if he chose to buy legal salt: if he bought smuggled salt, on the other hand, he would have required to work only a little above an hour to earn enough. It is not surprising, therefore, that smuggled salt was widely sold in Shanghai. In Tientsin an unskilled worker would have had to work a little over an hour to buy a catty of salt. Along the coast, inland and away from the major cities, wage-rates were, as noted above, considerably lower than in the major cities, and the real price of the salt rose in consequence. Inland from Macau wage-rates dropped quickly: at Kongmoon they were less than half the rates in Macau, just fifty miles away (115 cash per day as against 250) and an unskilled labourer in Kongmoon would have had to work for  $1\frac{1}{4}$  hours to earn enough to buy a catty of salt. Wage-rates were, again, low in Kwangsi. Salt was not expensive in Nanning, but low wage-rates there (125 cash a day) meant that a coolie would have to work for  $1\frac{3}{4}$  hours to earn enough to buy a catty. Wages were a little higher at Wuchow, but even at Wuchow a coolie would have had to labour for over  $1\frac{1}{4}$  hours to earn enough to buy a catty of salt.

In the Yangtse valley and the west, however, wage-rates for unskilled labourers dropped very quickly, and the real price of salt in consequence rose sharply. At Wuhan, wages were no higher than about 140 cash a day, in Ichang about the same, in central Hunan about 200 cash at most, in Kiangsi about 160, and in Chungking about 85 cash. This implies that unskilled labourers would have had to work for  $3\frac{1}{2}$  hours, 5 hours,  $2\frac{3}{4}$  hours at least,  $3\frac{1}{2}$  hours, and  $4\frac{1}{4}$  hours respectively to earn enough to buy a single catty of salt: in Ichang, a labourer would have had to work for 10 days to earn enough to buy salt for his whole family for a year. Away from the major Yangtse cities, along the fringes of the valley, the salt-price, as noted above, would have risen rapidly because of transport costs inland from the depots along the river, and it is probable that the wages of unskilled labourers would have dropped. There must have been places along the fringes of the Yangtse valley where an unskilled labourer would have had to work for an entire ten-hour day to earn enough to buy a catty of salt.

We do not have figures for the wage-rates of unskilled labourers in Kweichow, or for most of Yunnan. It is unlikely, however, that an unskilled labourer in Kweichow would have earned as much as at Ichang, the nearest Yangtse port to Kweichow. If a Kweichow labourer was able to earn 85 standard cash a day, the rate that seems to have prevailed at Chungking, then this would, in all probability, have been the best he could hope for. In these circumstances, with the price of salt going above 100 cash the catty, the real price of a catty of salt must have been more than an entire day's labour, perhaps as high as a day and a half's labour.

Much the same is likely to be true of central and northern Yunnan, as well. We have a figure for the normal wage-rate for unskilled labourers at Mengtse, on the southern border with Vietnam, which suggests rates there were normally about 200 cash the day, but this may be on the high side<sup>51</sup>, given that the wage-rate for Tengyueh was only 140 standard cash the day, but, even if accurate, this suggests that labourers would have had to work for  $5\frac{1}{4}$  hours to earn a catty of salt: at the wage rates given for Tengyueh, labourers would have had to work  $7\frac{1}{2}$  hours.

In the major coastal cities, with wage-rates such that a catty of rice could be bought with under an hour's labour, and thus a whole family's rice for a year with one or at worst two day's labour, then this cannot be seen as comprising a significant social or economic burden. Even if a coolie had to labour for  $1\frac{3}{4}$  hours to buy a catty of salt, as at Nanning, and so for  $3\frac{1}{2}$  days to earn enough to buy salt to keep his entire family for a year, then this, too, must be seen as marginally socially acceptable. However, the real cost of salt in the Yangtse valley was very much higher than this. The real price of salt at Ichang, to say nothing of Kweichow, must have been a serious problem for the poor. In the Yangtse valley, the crude price of salt was, as noted above, high, but the real price was very high indeed.

The cash price for salt thus varied from 3 cash a catty at Chefoo to 120 cash a catty at Kaihua, a range of 40 times, but the real price varied from 8 minutes earnings to at least fifteen hours earnings, a range of 95 times. In a few places, an

unskilled labourer would have had to work for 20 days to earn enough to keep his family in salt for a year, as onerous a real price as that in the interior of India.

At some point, the price of salt would have reached the point where real economic hardship eventuated, and salt riots would have been triggered. In the lower Yangtse a retail price for salt of about 55 cash the catty seems to have been viewed as the critical level. Certainly, the Customs Commissioners in the Yangtse Valley in 1901 believed that the price of salt had been pushed there as high as it could safely be pushed. The Wuhu Commissioner stated, "The stage has now been reached where further increase in the taxation of salt is prohibitive, and could only be imposed with the probability of rebellion". The Nanking Commissioner was of the same opinion, "The Likin charged on salt in the Liang Huai circuit is on the average three times the amount of the Ko [the Salt Tax]. It is probable that in this circuit, with its extended waterways easy of control the highest limits of Likin leviable have been reached". However, the Nanking Viceroy felt that he could push the Likin on salt even higher, and, as noted above, the Wuhu Report notes that an additional 7 cash a catty Likin had been imposed while the Report was being finalised, which pushed the retail price at Wuhu up to 57 cash a catty. While no salt riots seem to have been triggered by this, the danger was clearly close. If the Wuhu Report felt that the Nanking Viceroy's raising of the retail price of salt to 57 cash the catty was very seriously risking social unrest and riots, the fact that this meant that an unskilled labourer was going to have to work there for nearly five hours to earn enough to buy a catty makes this fear entirely reasonable.

*The Real Price of Salt in 1901: Relationship with the Price of Rice*

Another pointer to the real cost of salt in China at this period is to compare the relative price of salt and rice. To look at these relative prices it is necessary first to look at the retail price of rice. The *Trade Reports* and *Returns of Trade* published by the Imperial Maritime Customs give a few pointers to the retail price of rice in China in the first years of the twentieth century<sup>52</sup>. It would appear that, within Eastern China, the retail price of rice fell into three broad areas.

In the north (Shantung, the lower Yellow River valley, the Peking-Tientsin area and Manchuria), rice seems to have normally retailed for about 60-85 cash the catty, at least within the major coastal cities. The grounds for this suggestion are predominantly the wholesale prices quoted for imported rice as sold at the northern docksides. Rice thus imported to this area from overseas sold wholesale at the northern docksides for from between 42.2 and 69.4 cash the catty in 1903-1906, predominantly between 55 and 69 cash the catty. Most of the ports in this area imported very little rice, but 1,250 tons were imported into Newchwang in 1905 (it was sold at an average wholesale price of 57 cash the catty) and 1,825 tons into Tientsin in 1906 (at an average wholesale price of 55 cash the catty). Clearly, the great bulk of the rice consumed in this area was grown in the agricultural areas around these cities. Rice would have been imported usually only in poor years, when the local price was somewhat higher than normal. Presumably, the price imported rice would sell for at the dockside would be about the same as the prevailing wholesale price for locally produced rice. It is, therefore, probable that the locally

prevailing wholesale price for rice in these coastal cities in the years when rice was imported was about 55-69 cash the catty. Allowing a reasonable mark-up of about 25% between this wholesale price and the local retail price, this would suggest the local retail price in the northern coastal cities would have been about 70-85 cash the catty in those years, perhaps about 60-70 in good years.

In the coastal cities of the southern and eastern coasts of China (from the Yangtse to the Vietnamese border) the retail price of rice was much lower than in the north, mostly between about 45 and 55 cash the catty. The prices in Hong Kong are entirely typical of this area, with wholesale prices in 1901 of 32 cash the catty, and retail prices of 46-66 cash the catty (the lower figure being probably the dominant one). Effectively all the rice sold in Hong Kong was imported from overseas, and the wholesale price and the dockside sale price of imported rice were thus effectively identical (between 1903 and 1906 the dockside wholesale price of rice in Hong Kong varied between 30 and 37 cash the catty, except for 1905, when a figure of 57 cash the catty is quoted, probably in error). Throughout this period a retail price of about 46 cash the catty for the main grade of rice sold seems to have been maintained in Hong Kong.

Much the same was true of Shanghai, where retail prices of between 39 and 53 local cash the catty (mostly between 50 and 53 local cash the catty) are recorded between 1901 and 1906<sup>53</sup>. There was little overseas rice imported into Shanghai (which lies near the greatest rice-producing district of China), but 4,000 tons of overseas rice were imported into Shanghai in 1906, at an average wholesale price of 37 cash the catty, which clearly suggests a retail price of something above 45 cash the catty (the retail price recorded that year in Shanghai was 45.5 standard cash the catty, representing a retail mark-up of 22% between the dockside wholesale price for imported rice and the local retail price). The wholesale price of imported rice is thus entirely in line with the recorded retail prices. Retail prices of rice in Soochow, nearer the rice-growing areas, and with lower transport and storage costs than Shanghai, were marginally lower than in Shanghai (between 37 and 49 local cash the catty, mostly between 48 and 49 local cash the catty, thus usually about 7-8% lower than the equivalent prices in Shanghai)<sup>54</sup>.

For the rest of this coastal area the evidence is thinner, but consistent. From Wuchow, on the West River, on the borders of Kwangsi and Kwangtung, nearly 2 million piculs of rice (about 124,000 tons) were exported in 1905, at an average wholesale price of 26 cash the catty. 1905 must have seen a bumper harvest in the West River area. The following year, however, was a poorer year, and a little rice (about 1,400 tons) had to be imported, at a wholesale price of 32.3 cash the catty. This clearly suggests that the local wholesale price for rice, and presumably also the local retail price, lay only a few cash the catty below the equivalent price in Hong Kong in these years.

At Canton rice had to be imported most years. In 1906 almost half a million tons was imported into Canton. The average dockside wholesale price of this imported rice was 35 cash the catty. Significant quantities of rice were also imported that year to Macao (17,250 tons at a recorded wholesale price of 51 cash the catty, probably an error), and Kongmoon (8,000 tons at 29 cash the catty). A small amount was also

imported to Samshui (175 tons, at 37 cash the catty). These prices all suggest that the wholesale price of rice generally throughout the Pearl River Delta area was between about 30 and about 35 cash the catty, very close to the Hong Kong figures.

Further east, rice imported from overseas to Foochow, Amoy, and Swatow similarly sold dockside for wholesale figures not dissimilar to those in the Pearl River Delta (Foochow imported a little over 1,000 tons of rice in 1906, at an average wholesale price of 36 cash the catty, Amoy about 20,000 tons, at an average wholesale price of 33 cash the catty, and Swatow about 3,000 tons, at an average wholesale price of 26 cash the catty). To the west, Kiungchow on Hainan imported 7,500 tons in 1906, at an average wholesale price of 26 cash the catty. Kiungchow imported significant amounts of rice each year from overseas: the wholesale prices quoted are 37 cash the catty in 1904, and 32 cash the catty in 1905 (in 1903 the price quoted for rice landed at Kiungchow was the high 48 cash the catty, possibly an error).

It thus seems very likely that the average wholesale price for rice in the major coastal cities along the southern and eastern coasts was between about 30 and 37 cash the catty, occasionally even a little less than that, and that the retail price was probably about 45 and 55 cash the catty most of the time in most of these cities, with the price a little inland from the cities a few cash the catty less. It was doubtless the easy availability of rice imported from South-East Asia that kept prices along the coast stable and so much lower than in the north. It is noticeable that the prices in Shanghai (where the transport costs of rice imported from South-East Asia would have been slightly higher than further south) were slightly higher than in the Pearl River Delta or the west of Kwangtung, which is what is to be expected if the price of overseas rice as landed was acting as a control on the general wholesale price of rice in these cities in these years.

The third area of rice prices was the Yangtse Valley. Here prices seem much lower than anywhere else. The *Trade Reports* record the 1905 retail prices in Nanking (27-30 cash the catty), Yochow (25 cash the catty), Changsha (26 cash the catty), Shasi (33 cash the catty), and Ichang (probably 33 cash the catty<sup>55</sup>). At Shasi a retail price (in 1906 after disastrous floods) of 65 cash the catty (which would have been considered quite normal in the north of China) was considered a cause of serious distress, and the Government granaries were opened, and rice sold to the people at 48 cash the catty (about the normal retail price in the southern coastal cities) to alleviate the distress. While the *Trade Reports* do not systematically give the retail figures for rice sold throughout the Yangtse Valley in these years, these figures make it clear that the average retail prices in the major cities along the Yangtse must have lain between 25 and 35 cash the catty, no more than a half to two-thirds of the average price along the coast, and no more than a third of the price in the north. The reason for this must be that the Yangtse Valley is the greatest rice-producing area of China, and rice was abundant and sold cheaply.

The retail price of rice would have been at its highest in the cities, since it would have had to be transported there from the rural rice-growing districts in their hinterlands. The further inland, the cheaper rice would have been, in average years. Rice was grown in the inland areas and then had to be transported to the cities, thus raising the

wholesale sale price as sold in the cities as compared with the wholesale purchase price in the production districts. The 1906 *Trade Reports* suggest this for Anhwei. Prices are recorded for “Anhwei” of 15-20 cash the catty. This is so much less than the retail figures recorded for the nearby Nanking (27-30 cash the catty) that it is likely that the Anhwei figures are the wholesale prices at which the rice was bought in the production districts: by the time the rice was transported to Wuhu and the other Anhwei cities along the Yangtse it doubtless retailed for about the same figure as at Nanking.

Salt, on the other hand, was at its cheapest in the cities. As noted above, salt was carried from the salt-fields to depots in the cities, and then redistributed from there inland. The retail salt price would have risen steadily the further inland the point of sale was from the depot in the major city. So, the relative retail price of rice and salt would have been at its lowest level in the cities, and would have widened steadily the further inland, with rice getting steadily cheaper, and salt steadily more expensive, the further inland one went.

In 1901, in Hong Kong, clean rice ready for cooking cost about 4.6-6.6 cents a catty (46-66 cash a catty) in the market, with the lower price being the dominant one. A catty of salt cost at that date about 12 cash the catty. The relative prices rice : salt in 1901, therefore, were 1 : 0.26.

The relative price of rice and salt in Hong Kong in recent years is similar to that disclosed by the figures for 1901. In 2004 rice sold loose in the market in Hong Kong cost 4.00-5.50 Hong Kong dollars the catty, depending on quality, with the lower price the dominant one<sup>56</sup>. Artisan salt imported from the salt-pans at Swabue and sold loose in the market in Hong Kong sold for 1.33 dollars the catty<sup>57</sup>. The lower quality loose rice and the loose salt are close to the equivalent qualities as sold a century earlier. In 2004 the relative price of this rice and this salt was, therefore, 1 : 0.33<sup>58</sup>. In 1901 salt, at 1 : 0.26, was, therefore, in relative terms as compared with rice, if anything even cheaper than in 2004 in Hong Kong. This range of relative values causes no problems to consumers today, and would seem to be about what the market dictates, if no taxes or other artificial impediments exist to distort the prices. In Hong Kong in 1901, the price of pork in the market was 18 cents the pound (240 cash the catty), meaning that a catty of pork cost twenty times as much as a catty of salt at that date<sup>59</sup>: in 2004, a catty of fresh pork in the market cost \$26-28 for the basic quality. In other words, in 2004, pork cost twenty or twenty-one times the price of salt, effectively the same relative price differential as in 1901. Salt, therefore, in Hong Kong in 1901, was no more expensive relative to other staples than it is there today.

The relative cost of salt and rice elsewhere in the major cities of the central and eastern parts of Kwangtung in 1901 was similar to the position in Hong Kong, and that in southern Fukien was not very different. If the wholesale price of rice at Canton was about 35 cash the catty, the retail price must have been about 45 cash the catty. The retail price of salt at Canton was 17 cash the catty for “duty-paid salt”, a relative price differential of 1 : 0.37. At Swatow rice was imported at a wholesale price of 26 cash the catty, suggesting a retail price for rice of about 33 cash the catty. Salt sold

retail there for 8-9 cash the catty; a price differential of 1 : 0.24. Amoy imported rice at an average wholesale price of 33 cash the catty, suggesting a retail price of about 42 cash the catty. Since the retail price of salt was 11-15 cash the catty, the retail price differential for the lower (and doubtless dominant) salt-price was 1 : 0.26.

To the west, Kiungchow on Hainan imported rice in 1906 at an average wholesale price of 26 cash the catty, suggesting a retail price there of about 33 cash the catty. The price of rice imported to Kiungchow in 1904 and 1905 suggest slightly higher retail prices for rice in those years, perhaps 40-46 cash the catty. The dominant quality of salt sold there for 6 cash the catty, suggesting a price differential of 1 : 0.18 (0.15-0.13).

Thus, throughout Kwangtung and southern Fukien, the relative price of rice and salt seems to have fallen within a narrow range, with salt costing between about a quarter and two-fifths as much as rice, catty for catty, and thus salt cost, relative to rice, no more, or very little more, in real terms, than it does in Hong Kong today. In Hainan, where salt cost less than a fifth as much as rice, the relative price of salt was extremely low: much lower than in today's cities.

North of Kwangtung along the coast the price differential narrowed, as salt became rather more expensive compared with rice, but not to the point where salt became as expensive as rice. Thus, Foochow imported rice in 1906 at an average wholesale price of 36 cash the catty, suggesting a retail price for rice, as at Canton, of about 45 cash the catty. Since the retail price of salt at Foochow was 22 cash the catty, this suggests a relative price differential of 1 : 0.49. Much the same was true of Shanghai, where retail prices of between 50 and 53 cash the catty were usual for rice in this period. Retail rice-prices in Soochow were mostly 48-49 cash the catty. The retail price of salt in Shanghai was 40 cash the catty, and in Soochow 33 cash the catty, suggesting retail price differentials in the two cities of 1 : 0.80 and 1 : 0.69 respectively (the ratio at Shanghai for smuggled salt would have been 1 : 0.40).

Inland from the coastal cities in the Kwangtung/Kwangsi-Fukien area the retail price of salt, despite the much higher price of salt in the inland areas as compared with the coastal cities, still seems to have been well below the retail price of rice. At Wuchow the wholesale price of rice in 1905 was 26 cash the catty, suggesting a retail price for rice there of about 33 cash the catty. Salt sold retail there for 25 cash the catty, a price differential of 1 : 0.76. If the salt retail price inland of Amoy was 11 cash the catty, and "far inland" 17 cash the catty (for the dominant grade of salt), then, even if the retail price of rice was half that in Amoy, the relative price of salt would still have been well below the price of rice, catty for catty.

In the north the same situation appears, with salt retailing for substantially less, catty for catty, than rice. In this area, as noted above, rice seems to have retailed in the major coastal cities for about 70-85 cash the catty. In those cities salt retailed normally for perhaps about 18 cash the catty, although for much less than that in Chefoo and Kiaochow (Tsingtao). This suggests a rice : salt price differential of no more than about 1 : 0.26, and in Chefoo and Kiaochow the relative price differential must have been

even wider than that. Inland salt-prices, in the Yellow River valley, rose to almost double the price on the coast, but, even if the rice-price was no more than half the price on the coast, this would still leave salt costing a less than rice, catty for catty.

In the Yangtse Valley, however, where rice was much cheaper, and salt very much more expensive, the price of a catty of salt was much higher than the price of a catty of rice. In Soochow and Shanghai the retail price of salt and the retail price of rice, catty for catty, tended towards an approximate equality. Normally salt was slightly cheaper than rice here, catty for catty, but, especially in Shanghai, in some years the two prices moved towards approximate parity (this refers to the legal salt, not the smuggled salt, which would always have been considerably cheaper than rice, catty for catty). However, further along the Yangtse, salt became steadily more expensive as compared with rice, and the ratio to the rice price progressively worsened. Thus, the normal retail price for rice at Nanking was 27-30 cash the catty, while salt retailed there for 36-40 cash the catty, a relative rice-salt price differential (taking the lower prices) of 1 : 1.33. At Yochow the normal retail price of rice was 25 cash the catty, while salt retailed there for 52 cash the catty, a relative price differential of 1 : 2.08. At Changsha the normal retail price for rice was 26 cash the catty, and salt retailed for 56 cash the catty, a retail price differential of 1 : 2.15. At Shasi the normal retail price for rice was 33 cash the catty, and for salt 58 cash the catty, a price differential of 1 : 1.75. At Ichang the retail price of rice was, probably, 33 cash the catty, while salt retailed for probably 70 cash the catty, a price differential of 1 : 2.12. Given that these were price differentials for the major cities along the Yangtse, from where the salt was distributed, and where the salt was thus probably the cheapest within the various sub-regions, it is likely that, inland from the river, the price differential between rice and salt may well have risen to over 1 : 3, probably in a few places to as high as 1 : 4.

The price differentials between rice and salt in the Yangtse Valley would have caused some problems, and certainly highlight the high cost of salt in this area. An unskilled labourer would have eaten about half a catty of rice a day (this is about the basic subsistence level). It is possible that the recorded daily wage rates assume that the unskilled labourer was fed the mid-day meal by their employer. If so, the unskilled labourer would have had to buy about a third of a catty of rice a day. In Hong Kong in 1901, an unskilled labourer would have had to work for about the same length of time to earn enough to buy this one day's supply of rice or one catty of salt, representing ten weeks supply of salt (1 : 1), in Shanghai a day's supply of rice would require an hour's labour, and a ten-week supply of salt 2½ hours labour (1 : 2.5), in Ichang the ratio would have been the much higher 1 : 7.3.

#### *The Salt-Price: Conclusions*

It is noted above that the retail salt-price in China was, over about half of China, under 30 cash the catty, and, in most of the rest of China it was over 50 cash the catty (see Map 3). The 30 cash-a-catty point seems to coincide approximately with the point where the price of a catty of salt cost about the same as a catty of rice, and also with the point where the price of a catty of salt equated to no more than 1¾ hours labour for an

unskilled labourer (about one-sixth of a day's work). There can be no doubt that, however viewed, salt at under 30 cash the catty was unlikely to be a real economic hardship for even the poorest Chinese coolie.

All of this suggests that, where the retail price of salt was less than about 30 cash a catty (i.e. over a good deal of China), the price of salt was unlikely of itself to act as a restraint on consumption. With salt at levels of this sort, most families could have afforded to use as much salt as they wanted, without too much financial worry. But, as the retail price of salt rose above 30 cash a catty, then the price would have begun to act more and more as a restraint on consumption, and prices at or above 50 cash the catty must have been a very real restraint: this conclusion is tested further below.

It is often assumed that the price of salt in China was a real economic hardship for the poor. The findings in this paper suggest that this is a simplistic view. It certainly was not true of the South, South-Eastern Coasts, or the North or North-East. It was true in part of the Yangtse Valley where, clearly, the price of salt had been pushed up to the highest point it could bear without beginning to trigger social unrest and riot, and this was even more the case in the mountainous south-west. The belief that salt was unduly expensive generally in China thus seems to be an unwarranted extrapolation from the Yangtse Valley to China as a whole.

#### *Consumption of Salt in 1901*

Given the position with regard to the price and real cost of salt outlined above, the question needs to be addressed as to who much salt was actually consumed in China at that date, and whether there were any areas in China where salt-starvation might have been expected.

#### *Salt-Consumption: Problems of the Statistics*

The figures given on the consumption rates of salt, and the discussion of them by individual Customs Commissioners in the *1906 Salt Report* suffer from two major systemic problems. The first is that, since there had been, before 1901, no attempt made in China to estimate the real consumption levels of salt, or to quantify the consumption figures, the figures given in the Reports are nowhere better than informed guesses. Some Customs Commissioners did not submit any figures for consumption levels in consequence. Nonetheless, several other customs officials went to considerable trouble to try and give their guesses some substance, and, despite the lack of dependable detail, the figures given do allow analysis and seem likely to give a generally roughly accurate, or at least reasonably approximate, set of figures.

The second systemic problem is that individual Customs Commissioners did not all understand the requirement to give figures on the consumption rates of salt in the same way. Some understood it to mean that they were required to attempt to estimate the total salt-intake of the people in their areas, that is, salt taken as free-salt (table-salt) together with salt taken as an ingredient in some pre-prepared foodstuff (i.e. salted eggs,

salt fish, salted vegetables, beancurd and bean-sauces, and soy-sauce), while others took it that they were required to give a figure for the consumption of free-salt (table-salt) only. Unfortunately, it is not always clear which type of calculation any individual Report is aiming to give.

### *Salt Consumption and Salt-Starvation*

All animals, including man, are descended from creatures which lived in the sea. Sea-creatures live all their life surrounded by liquids which are saline. The average salinity of the sea is between 2% and 3% salt. Salt permeates their bodies, and their body-fluids. Their body-fluids, as a consequence of this, can normally only function if they retain a level of salinity approximately that of sea-water. In the sea, this level of salinity is automatically and continuously maintained because of the steady permeation through the body of salt from the surrounding waters, and so no mechanism for storing salt was ever developed. Once sea-creatures moved out onto the land, however, they faced a problem. Their body-fluids continued to demand the appropriate level of salinity, but land-creatures retained the inability of their distant marine ancestors to store salt. All land-creatures, including man, lose salt constantly through sweat, exhalation, and in the urine. All such creatures, including man, must, therefore, take in salt on a daily basis to keep their body-tissues and body-fluids up to the required level of salinity, and to offset the salt thus constantly lost.

Where men have a salt-intake lower than their rate of salt-loss, consistently over a period of time, in due course salt-deprivation, and eventually salt-starvation, sets in. The salinity of the blood drops below the level at which it functions properly. In order to keep the salinity of the blood up to the required level, the body reduces the quantity of blood in the body, by thickening it, and shedding fluid. The blood circulates more and more slowly, and requires more and more effort to pump it round the body. If additional salt is not taken, lassitude sets in, and, eventually, coma, and death.

Salt-starvation is a rare medical condition in the modern world. In the modern world salt-intake is usually hugely above the level at which it might occur. In Europe and North America average annual intake of salt is mostly above twenty pounds per head per year, and even twenty-five or thirty pounds in many cases, and the rest of the developed world is not that far behind. Indeed, medical problems from excessive salt intake are more dangerous in most of the world today than salt-starvation from too little. In the modern world, almost every processed food has salt in it, often a surprisingly high amount. It is very difficult to avoid salt in the modern world in consequence. Even if little free-salt (table-salt) is added to food, modern man is still likely to take in a considerable amount of salt<sup>60</sup>.

Where pre-modern populations had a diet rich in meat or sea-fish, achieving an adequate salt intake was not such a major problem, as both meat and sea-fish contain natural salt, especially sea-fish. Where the diet is predominantly cereals in one form or another, however, salt-intake becomes a more serious question. This is particularly so where the staple cereal is rice, which contains, effectively, no natural salt

at all. The poor in China, in India, and in much of Asia, subsisted in the late nineteenth and early twentieth centuries on a diet consisting almost entirely of rice and vegetables, and which was, in consequence, extremely low in natural salt.

Salt-starvation was not uncommon in India at about 1901, where the high price of salt (a Government monopoly) induced many poor people to cut their intake of salt to the point of danger<sup>61</sup>. There was a great deal of work done by medical researchers on salt-starvation in India in the early twentieth century, and it seems likely from this research that the minimum safe intake of salt for an active adult Indian farm-worker working in the open sun was 11.4 pounds a year. Taking into account that women (usually working in the shade) and children (with smaller bodies) needed less salt, the average per head minimum safe consumption level was found to be 10 pounds per head per year. Since the salt available to the poor in India was adulterated and dirty, these figures need to be reduced by about 10%, to about 9 pounds per head per year, to give a figure for a safe minimum salt-intake where the salt was clean. Active adult men could, it was found, survive on intakes of as low as 8 pounds a year of the standard Indian dirty salt, but would, in these circumstances be normally permanently in a state of slight salt-deprivation, and would tire easily, so they could not work very long hours, and would suffer chronic breathing and heart stress problems. More seriously, at a level of salt intake of 8 pounds a year (7.3 pounds of clean salt after discounting for adulteration), a man would be at serious risk should his salt-loss rate suddenly rise (because of a sudden heat-wave, an attack of fever, or an attack of diarrhoea). He would then slip almost at once into full salt-starvation<sup>62</sup>. The Indian Government claimed that the average salt-intake figure taking the country as a whole was 12 pounds a year, but this ignored the regional differences: salt-intake was substantially higher on the coasts, and much lower in the interior, where the cost of the salt was much higher. Over much of interior India, about 1901, salt, even the poor and highly adulterated salt which was, effectively, all that was available to the poor, cost three day's labour for an unskilled labourer to purchase four pounds: an unskilled labourer, in these parts of India, with a family of four, would have had to labour for an entire month to earn enough to buy the salt he would need for a year. It was at this level of real cost that salt starvation became a real social danger, and a serious health risk.

China, like India, was a place where the diet of the poor was heavily dependent on rice, and salt was, in real terms, very expensive in parts of China, as detailed above. In a few areas such as Kweichow, parts of Yunnan, and the outer rim of the Yangtse valley, especially in Hupei Province, salt was just as expensive in real terms as it was in interior India. As detailed above, in these parts of China an unskilled labourer would have required one full day's labour to earn enough to buy one catty of salt (this is exactly the same real cost as three day's labour for four pounds of salt, three catties being equal to four pounds). This section thus aims at seeing if there is any hint that the real price of salt was so high anywhere in China that salt-starvation eventuated, since the Indian experience strongly suggests that there were parts of China in 1901 where salt-starvation was to be expected.

There was a Chinese saying, which is mentioned in a number of the Reports in the *1906 Salt Report*, to the effect that every man needed 3 mace (0.3 Taels) of salt a day. 3 mace a day implies 6.8 catties a year. It will be seen that this figure is exactly the same figure as the figure which was worked out in India to be the bare safe average minimum clean salt intake (10 pounds, discounted by 10% for adulteration, equals 9 pounds, which is almost exactly 6.8 catties). In these circumstances, it seems most reasonable to take 6.8 catties per head of clean salt as the bare minimum average safe total salt intake level for China, although intake of as low as 5½ catties of clean salt a year could be survived for a short time, with some risk (that equals 7.3 pounds).

One Report says that this saying, that everyone needed three mace of salt a year, was often given in the form that every man had to spend one cash a day on salt, and that these two forms of the saying meant the same. One cash a day would only imply 6.8 catties a year if the salt cost 53 cash a catty. If these two sayings meant the same, therefore, it is likely that they were sayings current in the Yangtse Basin, which, as is discussed above, was the only part of China where salt was routinely retailed at above 50 cash a catty, in other words, those parts of China where salt was most expensive. It comes as no surprise that it was precisely in these high-price areas that people were anxious as to what the minimum safe salt-intake figure was. If an active adult consumed this amount of salt (6.8 catties of clean salt), he would certainly have been free of the risk of salt-starvation. Many of the Customs Commissioners looked at this 6.8 catty a year figure, to see if it seemed to fit the circumstances of the actual consumption of salt in their district.

It should, therefore, be assumed that, in China in 1901, total annual average salt-consumption rates of 6-8 catties a head of clean salt (8-11 pounds) are close to the bare minimum necessary to escape salt-starvation, rates of 9-11 catties (12-15 pounds) are comfortably above that level, and rates of 12 catties or more (16 or more pounds) are lavish, implying access to quite heavily salted foods. These are figures for total salt consumption, that is, salt taken as free-salt plus salt taken in pre-salted foodstuffs.

In the detailed discussion below, it will be seen that different regions of China fell into all of these classes, with the Yangtse valley, Yunnan and the Shanghai area consuming salt at close to the bare minimum, the south-central coastal areas consuming it at rates comfortably above this, and the north (from Manchuria to Shantung) consuming salt lavishly. The areas of lavish or comfortable salt-consumption rates are those where the retail price of salt is shown above to be low, and the areas where salt was consumed at close to the bare minimum those where the retail price of salt was high. A particular problem in the Yangtse valley, which used Liang Huai salt, was that this salt was heavily adulterated, by about 20%, so that five catties of Liang Huai salt only contained as much salt as four catties of clean salt. As a consequence of this, a bare minimum safe intake of Liang Huai salt required 7.5-10 catties, and a comfortable intake 11-13 catties, to offset this adulteration.

*The North: The Fengtien, Changlu, and Shantung Salt Circuits*

The north of China comprised three salt circuits: Fengtien, which produced the salt consumed in Manchuria; Changlu, which produced the salt consumed in Chihli Province and parts of north-central Honan; and Shantung, whose salt was consumed within Shantung and parts of north-central Honan. Throughout this area salt consumption was high in 1901, substantially above the bare minimum figure, in places, indeed, as high as salt-intake figures for Britain and other parts of the developed world at that date.

No salt was imported into the Fengtien area, and none was supposed to be exported out of it, either, although some was smuggled to the south (probably only a small percentage of the total output). No pre-processed salted foodstuffs were imported into the area, and the export of Manchurian processed salted foodstuffs (mostly salted vegetables) was not of so substantial a character as to skew the statistics. In Manchuria, therefore, it was a relatively straightforward matter to estimate the approximate total salt-consumption per head, by dividing the total salt output by the total population. When this was done, however, the consumption figure which results was very high indeed.

The Newchwang Commissioner (see Map 2) was, in consequence, satisfied that the total salt-consumption rate in Manchuria was very high. He noted that salt production in the Fengtien Salt Circuit reached some 540 million catties, but that the population was at best 25 millions, giving an annual consumption of over 21 catties a head (28 pounds). Since the 1901 salt consumption in England was only 22 pounds a year, the Customs Commissioner found this apparent Manchurian consumption figure "enormous". He noted that the consumption rate in British India was about 12 pounds a head on average, and had questioned the figures for Manchuria that he had been given, but his informants, experienced men in the salt trade in Manchuria, "held their ground", and insisted, in particular on the output figures for Fengtien. He noted that there were 3,600 salt-pans in Fengtien, each producing 150-400 Fengtien salt piculs a year (the Fengtien salt picul contained at least 600 catties: this figure, therefore, suggests output of 400-500 million catties), and that tax was received on 600,000 Fengtien salt piculs a year (360 million catties) (since not all the salt produced would have paid tax, some being smuggled, and some being sold tax-free at the salt-fields, this figure thus also suggests output of 400-500 million catties). He found, therefore, that he could not find grounds for rejecting the output figure of 540 million catties. At the same time, the population estimate of 25 millions seemed unassailable.

He noted a significant smuggling of Manchurian salt to the South. Salt was tightly controlled, and the trade in free-salt was subject to every possible bureaucratic restraint, but the trade in salted foods was far less tightly controlled. In the Sung, when the rules governing the salt-trade were brought to their classic form, salting of food was done, almost entirely, at home. Salting food, therefore, required a hosuewife first to buy the salt and pay the due tax on it. Thus no restraints needed to be put on trade in salted food, since the salt involved would have paid tax before it was used for preservation purposes. During the Ch'ing, however, salting of food became more and more a commercial, industrial, operation. It centred on places where salt was tax-free or very lowly taxed, usually on the coast, and then the salted food prepared there was

exported in bulk inland. Very often this salted food escaped the inland taxes and Likin, which tended to be levied on crystalline free-salt only. A great deal of such salted food (in 1901 especially salted vegetables) was exported, quite legally and tax-exempt, from Manchuria to the South (probably mainly to Shantung and the Honan area). The practice was to use far more salt than was necessary in the preservation process: when the salted vegetables were received in the South, they were taken out of the preserving salt and sold, and the excess salt was then also sold, as salt. To what degree this trade could have reduced Manchurian consumption figures, however, is, clearly, questionable.

The Newchwang Customs Commissioner noted that Manchurian salt had been entirely tax-free until 1867. Until then, salt would have been sold in Mukden for about 5-7 cash the catty. This would have imposed no restraint on consumption at all. As the Commissioner noted, the Manchurian population became accustomed to heavily salted food, and this became the custom of the region, and this heavily salted food remained the local norm after taxes began to be imposed. So a high salt consumption rate was likely.

At the end of the day, it is clear that the Newchwang Customs Commissioner remained doubtful of his figures, and he was uneasy that he was missing some factor that would reduce the consumption levels, but he could not put his finger on it, and, on what he had, he had to accept very high consumption levels. On the evidence he put forward it is, indeed, difficult not to accept that the consumption of salt in Manchuria was high, probably above 15 catties a head (20 pounds), and so close to, or possibly even higher than, the contemporary British consumption figure.

In the Changlu Salt Circuit, too, the consumption rate seems to have been well above the bare minimum rate. The Tientsin Customs Commissioner noted that, if 6.8 catties a year was truly the local norm, the Changlu output would imply a population in Chihli Province of 64 million people, wildly in excess of the actual numbers (output was about 450 million catties: the best population estimates for Chihli in the early twentieth century suggest a population there of about 25 million, if northern Honan is added, also provided with salt from Changlu, the population served can be put as high as 37 million). At the very least consumption rates must have been about 12 catties per head (16 pounds). The Customs Commissioner was prepared to accept 7 catties as the consumption rate for table-salt, but only if, in addition to that, "a great quantity must be used for salting fish, vegetables, and other preserving purposes", implying a total salt intake of about 12 catties per head.

The Chefoo and Kiaochow Reports are less well argued on their consumption rates. The Chefoo Report suggests that 15 catties per head (presumably total salt-intake) per year (20 pounds) was likely, while the Kiaochow Report suggests 5 catties (nearly 7 pounds), neither figure being supported by any detailed argument.

The total Shantung output of salt was estimated by the Kiaochow Commissioner as 240 million catties, "at the lowest estimate". However, a great deal of the Shantung salt was sold directly from the salt-fields, essentially tax-free. The 240

million catties of salt production are probably the taxed salt output only: the actual output must have been higher than this, probably a good third higher, as, indeed, the Kiaochow Commissioner hints by his use of the words "at the lowest estimate". Moreover, Shantung was one of the Provinces where inward smuggling of salt was prevalent, and the actual consumption rate must take this smuggled salt into account as well (some at least of the smuggled Manchurian salt came here). All this salt would have served a population in Shantung and Honan believed to have been about 35 million. If the 240 million catties of the Kiaochow Commissioner are taken as accurate, the salt intake per head would have been close to 6.8 catties a head: if it is assumed that total salt output was 50% higher than that, then 10.3 catties the head.

The figures for Shantung are probably too weak to support any argument, but it is likely that consumption rates in this salt circuit were similar to those in the adjacent Changlu salt circuit. Certainly, that would seem to be implied by the figure given by the Chefoo Commissioner: if he thought that 15 catties per head was about right, even though he gave no arguments to support this, then at least, in his eyes, salt consumption was very much above the bare minimum level.

Thus, it seems clear that, throughout the north of China, salt-consumption levels were very high, well into the lavish class. The people of this region, clearly, enjoyed heavily salted food, as the Newchwang Commissioner noted. Consumption of salt here was thus little, if at all, lower than consumption rates in the Europe of 1901. This area, especially Manchuria and Shantung, enjoyed access to cheap salt, cheap in absolute terms, but even cheaper in real terms, as noted above, and the price of salt clearly had no restraining influence on salt consumption in this area.

#### *The Southern Coasts: The Fukien and Liang Kwang Salt Circuits*

The southern coastal area comprised the Fukien and Liang Kwang salt circuits. The Reports in the *1906 Salt Report* are, unfortunately, generally inadequate on the question of salt consumption rates in this region, but suggest that at least substantially more than the bare minimum of salt was being consumed.

The Fukien salt circuit, like the Fengtien salt circuit, was self-contained: no salt was exported out of, or imported into, the area, except for a substantial trade in salt exported from Amoy into Kwangtung, of which much was then re-imported into south-west Fukien, since that area was easier of access from Swatow than from Amoy. It should, therefore, have been a relatively simple matter to prepare an approximate figure for the total salt intake, by dividing the total output by the total population, but, unfortunately, the Reports do not provide good figures for the total output of salt in the circuit.

Thus, according to the Foochow Report, the total output of salt was estimated as being some 900 million catties, 700 million of which were, it was believed, consumed within the main part of the Province, and 200 million involved in the export and re-import trade with Swatow. The population of Fukien Province was about 20

million, so annual consumption rates of about 45 catties a head (60 pounds) are implied, which is manifestly absurd. The output figures quoted are put far too high. The taxed salt output was only 130 million catties (this is salt taxed at the salt-fields, not just the salt paying the Salt Tax at the Salt Depot), and it is unlikely that the total output was more than about 30 to 50% above that figure (175-200 million catties). The Amoy Report estimated the total Fukien salt output at 320 million catties, but this still seems to be too high. Neither the Amoy nor the Foochow Reports give any grounds for their estimates of output.

While all this is rather vague, if total output figures of 175-200 million catties are taken as probable for Fukien, then the salt intake would have been about 8.75 – 10 catties per head. At the least, consumption rates above 8 catties a head (11-12 pounds) seem likely, with rates as high as 12 catties a head entirely possible.

The position in most of Kwangtung, unfortunately, is rather unclear. The Canton Report goes into considerable detail about production and area of consumption, but only refers to the taxed, official salt production. At one place this is given as 244.7 million catties, and in another as 209.5 million. According to one table, about 52.5% of this production was consumed within Kwangtung (this would imply about 128.5 million catties at the higher of the two figures), the remainder going to Kwangsi, Kiangsi, Hunan, Kweichow and Fukien. Since there were about 30 million people in Kwangtung, the taxed, official salt production consumed in the Province would come to about 4.28 catties per head, which, clearly, is far below what total real salt consumption must have been. These figures thus underestimate the total salt-production very significantly.

The reason must be that Kwangtung was one of the areas where the salt consumption quotas, on which the Salt Tax was assessed, were very low as compared with the actual consumption rates. It is unlikely that Salt Tax was paid on even half the salt produced. The Canton Report does not, for instance, notice the substantial licensed but untaxed salt-production around the Pearl River, nor the essentially tax-free trade in salt from the salt-fields in the western part of the Province, nor does it take into account the import of salt from Fukien (which the Foochow Report put at 200 million catties, although the figure can be confidently assumed to be far less than that). Smuggling, too, has to be borne in mind, although, given the low retail price rate for official salt in Kwangtung, it is unlikely that there was a great deal of smuggling, as it would seem doubtful that smugglers would have been able to undercut the official price over much of the Province (except for smuggling from Hong Kong into the Pearl River Delta, which was certainly significant, and which the Canton Report estimates at 70 million catties, which the Lappa Report calls “very substantial”, and which the Samshui Report puts at 90 million catties).

The Canton Report assumes in another place that the total consumption in the Province was 180 million catties (6 catties a head), but gives no argument as to how this figure was arrived at, and which cannot begin to be accepted if there was 70 or 90 million catties smuggled out of Hong Kong alone. The Lappa Report assumes total consumption of 150 million catties (5 catties a head), clearly far too low, but again does

not say how the figure was arrived at (although it was based on Chinese official salt-trade statistics, clearly very partial). The Samshui Report states that 300 million catties were sold through the Canton Salt Depot, which would imply perhaps twice that consumed within the Province as a whole, but merely gives this as hearsay (“are said”), although the writer of the Report considered this hearsay figure to be supported by the number of salt-junks engaged in carrying salt to Canton (nominally 100), the number of trips each could make in a year (nominally 6) and the amount of salt they usually carried on each trip (nominally 500,000 – 600,000 catties). The Samshui figure for total output would imply consumption rates of 20 catties per head, but this must be too high. Out of all this, it would be a wild guess what the actual consumption within Kwangtung was. It was probably well above the bare minimum, perhaps close to 9 or 10 catties a head, but the statistics given allow no better than a guess.

Better figures are, however, available for the island of Hainan, in the Kiungchow Report. Production of salt on the island was about 32.5 million catties, to which salt imported from Annam (about half-a-million catties) must be added. Of the resultant 33 million catties, about 15 million catties were exported as salt to Pakhoi for the Kwangsi trade, and 4.5 million catties were used to salt fish for export. The remaining 13.5 million catties were consumed on Hainan. Since the population there was about 1.5 million, the consumption per head, taking into account children, was estimated as about 10 catties (13-14 pounds) per adult. Since Hainan was one of the areas where salt was retailed very cheaply, this level of consumption must be seen as not at all surprising. The writer, however, considered that the usage of table-salt was no more than 4 catties per head per year (5-6 pounds): the rest was consumed as salted eggs and vegetables (3 catties), and, especially, salted fish (3 catties). The writer noted that this implied that each adult would consume about 30 catties of salted eggs and vegetables a year and about 20 catties of salt fish, since 30 catties of salted eggs contain about 3 catties of salt, and 20 catties of salt fish similarly contain about 3 catties of salt. It seems likely that the figure of 4 catties of table-salt a year was arrived at after discussion with informants. The figures for salt intake other than table salt need some revision, however. They do not mention soy sauce, beancurd, and other bean-based products, which consumed great quantities of salt. It might be more realistic to assume that the non-table-salt part of the consumption divided into three – salted eggs and vegetables; beancurd, other bean-based products and soy-sauce; and salted fish, each representing about 2 catties of salt intake a year. However, the 10 catties a year figure (about 14 pounds) per adult, free-salt and salted foodstuffs together, should be treated as reasonably accurate. These Hainan figures support the suggestion above, that salt-consumption in Kwangtung generally was about 9-10 catties a head, since it would seem unlikely that consumption in Hainan would be very much greater than that of the rest of the Province.

Two further points of interest can be drawn from this Kiungchow Report. The first is that, as with the salted vegetables of Manchuria, the salted fish exported from Hainan went tax-free, although the salt exported from the island as free-salt did pay a (very small) tax. The 4.5 million catties of salt used in the salting of fish for export represents about 30 million catties of salt fish exported, a very substantial trade (the Report notes that most went to Hong Kong). The other is that 4 catties of table-salt a year

is not a high figure. It is about half-a-teaspoonful of table-salt per adult per day. Given that the Cantonese generally, undoubtedly including the Hainanese, ate between four and five bowls of rice a day, there would be only a little salt left over for any other household use other than as flavouring for the rice, if there was only half-a-teaspoonful available per head per day. Anything less than 4 catties a year of table-salt would have left the rice unsalted, which would be a thing regarded with horror by any Chinese. The table-salt used on Hainan was mostly boiled salt, the salt used for preparation of preserved foodstuffs being mostly solar-evaporation salt.

In the western part of Kwangtung<sup>63</sup>, the Pakhoi Report (where salt was about as cheap as on Hainan) claims consumption per head of 6 catties, but it is clear from the context that this is an estimate of the table-salt consumed, not of total salt intake, which must have been much more than that, probably close to the Hainan figure of 10 catties. The Wuchow Report speaks of conducting enquiries into salt consumption there, and finding that the table-salt consumption rate was about 4.5 catties a year (i.e. a figure similar to that estimated for Hainan), “but this does not take into account salt used in the preparation of preserved fish, vegetables, etc, so largely partaken of by all classes of Chinese”<sup>64</sup>. The writer estimated that as much salt again as the table-salt was consumed in these preserved foodstuffs, and that the total intake was about 9 catties (12 pounds), which, again, is similar to the figure from Hainan. The Lungchow Report does not contain any useful estimate of consumption (it quotes, and assumes as accurate, the 6.8 catty a year rate).

Thus, taking the southern coastal areas of China together, the general impression received is that salt-intake was comfortably above the bare minimum intake. In the far south, the Hainan-Pakhoi region, overall intake of 10 catties a year (about 13-14 pounds) seems to be well evidenced, and this sort of level of consumption is likely for the rest of Kwangtung and Fukien, although the evidence from those Provinces is poorer.

#### *The Shanghai Region: The Liang Che Salt Circuit*

The area to the south of the mouth of the Yangtse formed the Liang Che salt circuit. There are problems with the figures given for salt consumption in the Reports on this region, but they suggest total salt intake of only a little above the bare minimum, especially in the northern part of the region, north of Hangchow Bay.

The Reports from the northern part of the Liang Che area thus all suggest total salt intake rates of about 7 catties per year per head. The Chinkiang Report suggests that about 7 catties seems reasonable, and that “local observation” suggests a figure slightly above 7 catties. The Soochow Report merely assumes the 6.8 catty figure on the basis of the standard Chinese assumption. In Hangchow the figure of 3 mace a day (6.8 catties a year) is stated to be significantly above actual consumption rates (“a rather liberal allowance”), but the writer makes it clear he is speaking of table-salt only, stating that “large quantities of salt are used in making bean-jelly, preserving meat, fish, vegetables, etc and no allowance for this is made in the 3-mace estimate above referred to”. The writer unfortunately does not go on to estimate how much salt was so used in

preserving foodstuffs. At Ningpo the consumption is given as 12 catties per year per family of 3-5 persons (2.5-4 catties per head). This, too, must refer only to table-salt. No usable figures are given for Wenchow.

All this is rather vague, but suggests usage of table-salt generally in the Liang Che area of something well under 7 catties a head (perhaps normally about 4 catties), and perhaps total consumption somewhere between 8 and 9 catties, but with higher consumption rates in the Ningpo area.

*The Central Provinces: the Yunnan, Szechwan, and Liang Huai Salt Circuits*

The Yangtse valley, and the mountainous south-west, was the area where the real retail price of salt was at its highest, with the price of a catty of salt requiring between five and fifteen hours labour by an unskilled labourer to earn, as detailed above. The area comprised the Szechwan and Yunnan salt circuits (respectively covering Szechwan, part of Hupei and most of Kweichow Provinces: and Yunnan Province), and the Liang Huai salt circuit, covering Kiangsu north of the Yangtse, Anhwei, most of Kiangsi, most of Hunan, and most of Hupei. Throughout the area consumption of salt (adjusted where necessary to account for adulteration) seems to have been low: close to the bare minimum needed for health (6.8 catties), presumably restrained to this level by the high retail price of salt in the region.

In Yunnan, the Mengtze Report at one place thus estimates 6 catties a year (8 pounds), and, in another, implies a figure just a little below 7 catties, while the Szemao Report implies a figure rather above 7 catties (about 10 pounds) for the annual average total consumption of salt in the Province. All three of these estimates are of total salt intake, not free-salt alone. All three estimates, therefore, suggest total intake at about the bare minimum figure consonant with health. Given the real price of salt in Yunnan, this is what is to be expected. The only estimate for consumption in Kweichow (found, in of all places, the Wuhu Report), is that it reached 8.8 catties a head (11-12 pounds), but this should be treated with considerable scepticism.

In the Chungking Report there is a note that, in the Province of Szechwan, 5 mace a day (11.4 catties a year, 15.5 pounds) was the assumed norm for consumption, but there is no discussion as to whether this assumed rate of consumption was close to the reality or not, and the figure is, without doubt, too high. In a "Report on the Trade of Szechwan" by the British Consul-General in Chungking (1904), attached as an addendum to the Ichang Report in the *1906 Salt Report*, there is a remark that 8 catties per adult per year (10-11 pounds) would be a "fair estimate of individual consumption" for salt consumed in Szechwan, and this figure seems far more likely. This figure is stated to be for table-salt only, but this Report by the Consul-General adds that there was relatively little salt-preserved foodstuffs used in the Province: "In Ssuch'uan there is practically no salted fish, but vegetables are salted and exported from the province". The Consul-General later stated that salt used for preservation was only equal to some 3-4% of the total salt consumption of Szechwan.

The Ichang Report states that it was widely assumed that the populations of both Szechwan and the western part of Hupeh consumed about 7 catties of salt per head per year, but no discussion as to whether this is a generally approximately accurate figure is given: it is likely that the writer intended this figure to cover total salt intake. The Shasi Report estimates the annual total consumption in Central Hupeh at “between 6 and 7 catties” (8-9 pounds), without giving details of how the figure was arrived at.

These figures are all a little vague, but they strongly suggest that, in the central part of the Yangtse Valley salt consumption was, generally, close to the minimum figure for health (6-8 catties, with little salt taken in pre-salted foodstuffs): none of the writers felt that salt consumption at higher levels was at all likely. Consumption rates in Szechwan, however, where the salt was slightly cheaper, were perhaps a little higher.

The Yochow Report, for Hunan, has some interesting comments on salt consumption in that Province. The writer had made “inquiries put here and there”, and, as a result, came to the conclusion that the salt consumption in the Province ranged from 5 to 7 mace a day, that is, from 11 to 13 catties a year (13-17 pounds a year). He then goes on to point out that Liang Huai salt was of very poor quality, and contained as much as 20% impurities (mostly sand), and that, in those parts of the Province using Szechwan salt, only 10 catties a year were needed, 10 catties of Szechwan salt providing, in fact, as much salt as 12 catties of Liang Huai salt. The same point was made by the writer of the Wuhu Report, who noted that: “The Liang Huai salt has to compete with no less than three other kinds of salt: Shantung, Liang Cheh, and Szechwan, all of which are of better quality and cheaper in price. ... The Liang Huai .. [salt] .. is hardly fit to eat”. The writer of the Yochow Report goes on to note that 12 catties per head would, given the likely total import of salt into the Province (240 million catties), imply a total population of about 20 million, which he felt was about right. However, slightly later estimates, put the population higher, at about 27 million, and this would imply, on this argument, a per head consumption of rather less, about 9 catties a year, which should then be discounted by 20% to cater for the adulteration of Liang Huai salt, thus bringing the figure down to close to the bare minimum: this seems to be far more likely.

The Hankow Report, based on a division of the estimated population of Hupei into the estimated total import of salt (free-salt and salted foodstuffs), finds the most likely consumption rate to be about 8 catties a head (10-11 pounds: this should be discounted by 20% because of Liang Huai adulteration, which would bring the figure down to under 7 catties), and states that this was supported by whatever other information he could find. The Customs Commissioner at Hankow also noted the higher figures (11-13 catties) suggested in the Yochow Report, and gave it as his decided opinion that these were considerably too high, and adds that the Yochow Customs Commissioner now agreed with this, after the Hankow Commissioner had discussed the matter with him. Presumably the Yochow Commissioner now accepted that 8 or 9 catties per head was more reasonable for Hunan too.

In Kiukiang, the writer of the Kiukiang Report stated that 4 mace a day was the consumption rate “estimated by the Chinese” (9.1 catties a year, 12-13 pounds).

This, however, is based on an estimate of the Kiangsi population as being about 13 million: slightly later estimates put the population much higher (at about 20 million), and, if the higher population figure were to be used, the consumption rates per head would fall to about 6-7 catties a year (8-10 pounds).

These estimates are all rather weak, although they generally point to consumption of salt at about the minimum necessary for health, at about 8-9 catties a head of Liang Huai salt, reflecting a little below 7 catties a head when discounted to cover adulteration. It is probable that, as in Szechwan, pre-processed salted foodstuffs were of only minor importance in the diet throughout this region.

The Wuhu Report goes into the question of consumption in greater detail. The writer finds the most likely figures for total salt-consumption (free-salt and pre-salted foodstuffs together) to be something "far above" the rate calculated from official salt statistics (7.2 catties per head) in the area along the Yangtse using Liang Huai salt. He suggests that 9 or 9.5 catties per head (12-13 pounds) would be more likely for the Yangtse area. 9 or 9.5 catties a head, however, given the 20% adulteration of the Liang Huai salt, imply only about 7.5 catties of clean salt, again a figure close to the minimum needed for health. The rate he calculated for Northern Anhwei (receiving salt along the Huai River, sold retail there for prices much lower than those for salt traded along the Yangtse) was much higher, at 11.9 catties per head, (15-16 pounds: about 10 catties, 12 pounds, when discounted for adulteration): he noted that salt-trade in this area did not suffer the "stagnation" of the Yangtse area, and the much cheaper retail rate in force in Northern Anhwei would have encouraged higher consumption rates there.

The Nanking Report merely assumes the standard 3 mace a day (6.8 catties, 9-10 pounds) figure, although the writer points out that this consumption rate does seem to fit the population (30 million) and overall (official) salt import figures. This, however, rather underestimates the amount of smuggled salt consumed. The figure of 3 mace a day would broadly equate with the 7.2 catties a year calculated from official statistics at Wuhu. The Nanking figures should not be seen, therefore, as necessarily pointing to any different rate of consumption from the figures estimated from Wuhu.

Taking the Yangtse Basin as a whole, therefore, the figures suggest that generally total salt consumption (when adjusted to discount the Liang Huai adulteration) was probably only about 7-9 catties per head per year in total (9-12 pounds), with two-thirds or more of that figure coming from free-salt, but only here and there reaching figures above that, and then not by much. This is very close to the basic minimum levels on intake for health. The North Anhwei figures, however, strongly suggest that this was a restrained rate of consumption, and that, where the price of salt allowed it, consumption would quickly rise to much higher rates, even as high as 10 catties (12 pounds), even after discounting for adulteration. Given the estimated normal consumption rates for South China of about 10 catties (14 pounds), this is very likely.

#### *Consumption-Levels: Conclusions*

It should be assumed, therefore, that, in China generally, salt would be consumed at the rate of about 10-11 catties per head per year (12-15 pounds) except where the tax regimen was such that this was restrained and a lower figure, closer to 7-9 catties (9-11 pounds), forced on the people. Only in North China, in Manchuria, Shantung, and around Peking and Tientsin, were consumption rates significantly higher than this (above 12 catties per head per year: 16 or more pounds, even up to 20 pounds). These figures all require to be adjusted for adulteration where necessary. Throughout most of China the rate of usage of table salt seems to have been about 4-7 catties a year or a little more, with from about half as much again to as much again normally consumed in preserved foodstuffs. Only in Szechwan and perhaps in the Yangtse valley at large, does it seem that salted foodstuffs represented a relatively small percentage of the total salt intake.

It would, therefore, seem likely that consumption in China at large, after discounting for adulteration where necessary, averaged about 7-12 catties per head per year (9-16 pounds). In the areas of low tax and Likin regimes consumption was at the higher end of this range, in areas of high tax and Likin at the lower end. In the far north, especially Manchuria, consumption rates were yet higher than this. In other words, average consumption of salt in China must have been, in 1901, close to that in British India, the other great Asian nation where salt was a State Monopoly - which, at the end of the day, is about what is to be expected.

At the same time, no observers looking at China in 1901 seem to have noticed any salt-starvation there. However, despite this, in major famine situations it is likely that salt-starvation did occur in China. In India it was normally in famine years that salt-starvation became a widespread phenomenon. Where unskilled labourers had to pay huge famine prices for rice, all other staples, including salt, were cut back, and the inevitable result was salt-starvation, particularly where the real price of salt was very high, so that mild salt-deprivation was a constant factor in daily life. It is probable that the same situation would have arisen in China, at least in the areas where the real price of salt was very high. Unless observers are alerted to the risks of salt-starvation, deaths from this cause are usually merely attributed to starvation, and are so not identified as being the result of salt-starvation, and not distinguished from other famine-related mortality.

Salt-starvation may have been a particular problem for the Taiping Kingdom. Salt supply to the Taiping Kingdom must have been intermittent at best, since the Taiping were in control of no salt-producing areas, and trade between the Taiping Kingdom and salt-producing areas in Imperial hands was forbidden. Salt-starvation must have been a problem in the Taiping Kingdom as a result, no matter how much salt-smuggling into it took place, particularly during the last few years of the Taiping Kingdom, when the area was constantly ravaged by war.

**Notes**

## Footnotes:

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<sup>1</sup> For studies of the salt trade in traditional China, see especially S.A.M. Adshead, *The Modernization of the Chinese Salt Administration, 1900-1920*, Harvard University Press, Cambridge, Mass, 1970; S.A.M. Adshead, *Salt and Civilization* Macmillan, London, 1992, and Kwan Man Bun, *The Salt Merchants of Tianjin: State Making and Civil Society in Late Imperial China*. S.A.M. Adshead has also produced a series of articles on the salt trade in individual areas of China.

<sup>2</sup> Because of the serious interruption to its normal functions by the British takeover of the New Territories in 1898-1899, the Kowloon Customs did not submit a Report, but most of the other Customs did. For some reason, Shanghai also did not submit a Report. This *1906 Salt Report* is a rare document. Before I deposited a photostat copy in the library of Hong Kong University, there was no copy in Hong Kong. It is not included in any of the “complete” reprints of Customs documents.

<sup>3</sup> Wuhu Report, p. 151. Placenames in this article are given as in the *1906 Salt Report*, except that, where a placename has subsequently been changed, the current name is given on first occurrence in brackets. Pinyin characters, and province are given also in Table 1 and Table 5 for most places mentioned: for other places mentioned, characters and pinyin are given in the text on first occurrence. References in the article are to the Reports submitted by the Customs of the place in question, unless otherwise noted, and detailed page and other references are not footnoted, except where there is a special need for this to be done.

<sup>4</sup> Compounded by the occasional typographical error in the Reports as compiled in the published *Report*.

<sup>5</sup> The Chinese standard for pure silver (the 1.0 standard) was less than chemically pure: it was 98.7% chemically pure, which was the purest metal usable in practice. I have found T.R. Jerningan, *China in Law and Commerce*, Macmillan, London, 1905, particularly helpful in understanding the currency of China in 1901. S. Couling, *Encyclopedia Sinica*, Kelly and Walsh, Shanghai, 1917, article “Tael” was also of help. I am glad to acknowledge the great assistance Se Yan gave me, by forcing me to confront the question of the currency fully.

<sup>6</sup> Within the Hong Kong area numerous nineteenth century land-deeds allow us to see the local exchange rates, either by quoting a price in both taels or cash and dollars, or by giving a price in cash which implies either the 1388 cash to the tael or the 1000 cash to the dollar norms. Effectively, every such land-deed uses these rates and no others.

<sup>7</sup> The copper cash were usually of a standard weight, but the *1906 Salt Report* suggests that in some places cash were minted which were lighter (e.g. at Tientsin, where the Tientsin Report speaks of “large” and “light” cash as circulating there, of which the “large” cash were standard weight at 1,000 to the dollar, and the others presumably minted to a local, lighter, weight, or on Hainan Island, where the cash seem to have been again substantially lighter than the norm).

<sup>8</sup> The difference was due to the Ku-ping scale not rounding the weight of the dollar to the nearest one-hundredth of an ounce, and not rounding the comparative weight of the dollar to the nearest percentage point.

<sup>9</sup> In part because the central Government only demanded 98% payment of dues to it, the last 2% being remitted as a gesture to the payer, so the differences between the two taels were swallowed up in this discount. In exact terms, the Sterling ounce avoirdupois weighed 437.5 Sterling grains, the silver dollar 455.7 grains, the Haikuan tael 583.3 grains of pure silver, and the Ku-ping tael 575.8 grains. Jernigan says that both the Haikuan and the Ku-ping tael were in practice traded at 579.85 grains in Shanghai in 1905, exactly half-way between the two exact weights, and states “The official tael, in which duties have to be paid, and known as the Kuping or Haikuan tael, is actually money of account, containing, whatever may be its fineness, 579.85 grains of pure silver.” (p. 301). However, Couling, in 1917, says the two exact weights were then current, and the two taels were kept as separate weights.

<sup>10</sup> These rates are given in *The Monetary History of China*, 1958, and are used in Hsiao Liang-lin *Foreign Trade Statistics of China*. I am indebted to Se Yan for drawing my attention to these books and to their tables of exchange rates.

<sup>11</sup> 139 standard cash would have equalled one mace at 1388 cash to the tael. The Report gives calculations which suggest rates of 139-144 cash to the *tiao*, but 139 was probably the normal figure: all these rates would equal one mace if rounded to the nearest candareen.

<sup>12</sup> The use of the Swatow Scale seems to have been authorised by a Viceroy about 1700. The Kang Hsi Emperor had unilaterally raised the taxes on salt from Kwangtung, but without raising the price to be paid by the end consumer, but had over-done it, and pushed all the Kwangtung salt merchants out of business. The Viceroy had been forced to have the salt conveyed from the salt-fields to Canton, and then from Canton up-river to the various prefectures and counties by Government boats. The Viceroy saw the need to moderate the prices, but apparently did not dare to question the Emperor's decision. By authorising the use of the Swatow Scale, the Viceroy thus, while keeping published prices per catty to the Emperor's stated figure, by increasing the weight of the catty by 11.2%, had effectively dropped the real price sharply. Some other adjustments may well have been made at the same time, dropping the price by about a quarter overall. Similar adjustments, using non-standard scales to ensure that prices were effectively discounted without effecting the published price per catty were agreed for the Tientsin region (see Kwan, op. cit. p. 46).

<sup>13</sup> This may have been another of the Viceroy's adjustments of about 1700. The rationale given for the 5% Summer discount was that the salt soaked up dampness in the wet Summers, so weighing heavier for the same amount of salt. In addition to this allowance for damp, there was an agreed tare for spillage, ullage, damage, and loss. In Kwangtung, and in many other areas of China, this tare allowance was 10%. This meant that a Bag leaving Canton weighing nominally 185 catties, would, in fact, weigh 203.5, including the tare allowance for spillage and ullage, and nearly 213 in the Summer, including the 5% tare allowance for damp. In addition, it was, it would seem, usual in Kwangtung only to take action for smuggling against a merchant if he was found to be carrying more than about 5% above allowances, thus making the 185 catty Bag in practice about 213 catties in the Winter, and 223.6 catties in the Summer, although all the papers would state that the weight was 185 catties (in other words, in the Summer the Bag would, quite legally, weigh almost 21% above what the manifest stated). Spillage and ullage usually came to far under 10%. The tare allowances generally seem to have been approved in most cases as ways of discounting the price without actually changing the published per-catty rates formally.

<sup>14</sup> The author would like, emphatically, to make this comment his own: while every effort to ensure accuracy has been made, errors, given the extreme complexity of the figures in the *1906 Salt Report*, there will be, although, hopefully, only marginal ones. The indulgence of readers is thus besought in advance.

<sup>15</sup> There were no quotas for those parts of China which were still barely settled in the Sung, when the quota system was set up, especially for Manchuria and the far west of Kwangtung.

<sup>16</sup> Especially in Kwangtung and Fukien, where the huge commercial fishing industry (which had not existed at the time the quotas were set up) used vast quantities of salt over the quotas.

<sup>17</sup> Mostly, these payments made on removal of the salt from the Salt Depot were not made at the Salt Depot, but at the Salt Tax Office, often some distance away (in Canton, the Salt Tax Office was within the city walls, but the Salt Depot was some miles outside the walls, down river). The Salt Tax Office would issue chopped receipts which would have to be presented at the Salt Depot before any salt could be removed.

<sup>18</sup> The figures given for the total of tax paid, and the costs of production, have been rounded up, and the income to the workers is more likely to have been nearer 1 cash the catty than 0.6 cash the catty.

<sup>19</sup> The price of salt ex-saltfields in Hong Kong is given in the District Officer's Annual Reports (in the *Hong Kong Government Administrative Reports, sub anno*): throughout the period between 1912 and 1935 the price varied between 63 cents and 80 cents a picul (6.3 – 8 cash a catty), normally between 6.3 and about 7 cash the catty. It is believed that the price of salt at the Hong Kong salt-fields had not increased between 1901 and 1912.

<sup>20</sup> One such area was Hong Kong, where there were, in 1901, a number of salt-refiners, at least one of which continued to operate until very recently. The process involved grinding ordinary, solar-evaporation salt by hand between two millstones, to a fine powder. This was then dissolved in a hot saturated saline solution, and left to stand. As the water cooled down, salt would form by crystallisation around the rim of the tub, and any impurities would sink to the bottom of the tub. The first salt to crystallise would be very fine, and was removed as soon as it formed. Then a slightly coarser salt would crystallise in turn, and be removed. The remaining thick saline solution was sold off to bean-curd makers. Such salt was much cleaner and finer than the salt from which it was made. Similar salt-refiners would have been found wherever boiled salt was not easily available, in Canton, for instance, Macao, and elsewhere. See *Hearts and Minds: Hong Kong's Traditional Trades and Crafts*, Urban Council of Hong Kong, 1996, pp. 126-127.

<sup>21</sup> From about 1915 onwards, the introduction of steam-driven pumps and drills was to reduce the production costs of salt produced in Yunnan and Szechwan significantly.

<sup>22</sup> According to Kwan Man Bun (op. cit.p. 45) the Tientsin Viceroy after 1903 raised the Likin levied on salt sharply: by 1911 to about 3.5 times the Salt Tax, so increasing the total taxes on salt from about the 6 or 7 cash the catty of 1901 to about 20 cash the catty.

<sup>23</sup> S.A.M. Adshead, personal comment.

<sup>24</sup> We do not have figures for the retail price of salt in this part of Shantung. It would have been higher than the prices quoted for the coastal cities, probably in the range 15-20 cash the catty.

<sup>25</sup> The figures in the Newchwang Report (the only Report in the *1906 Salt Report* from Manchuria) are difficult to understand in detail. They suggest a retail price of 8.9 cash the catty, but may well be intended to suggest a figure of 7.2 cash the catty, which would seem more reasonable, given the quoted ex-saltfield prices.

<sup>26</sup> There was no legal export of salt, but some was smuggled.

<sup>27</sup> The best reference to the retail price of loose salt in Hong Kong is a reference of 1908, in which the District Officer states that the price was then \$1.20 a picul (12 cash the catty): see file CSO 3429/1908, Public Records Office, Hong Kong. This figure is supported by a remark in the Samshui Report, in the *1906 Salt Report*, to the effect that salt sold from Chinese salt-fields in Hong Kong sold there for \$1 a picul wholesale (10 cash a catty). This would imply a retail price of about 12 cash a catty. The Lappa Report states that the Hong Kong wholesale price was 40-50 cents a picul (4-5 cash a catty), but it is likely that this was based on very out-of-date figures. The annual Hong Kong Government statistical digest, the *Hongkong Blue Book* includes a price for salt, but this was clearly for the ultrafine imported product, sealed "in a 2 pound jar": it cost 12.5 cents the pound in 1901: see section "Agriculture", p. T4.

<sup>28</sup> Salt was shipped from Swabue ostensibly for the great Salt Depot at Canton, but was instead off-loaded at Hong Kong. This was a feasible operation because the low salt consumption quotas in Kwangtung allowed the Swabue salt-merchants to meet their quota requirements by the shipping to Canton of only a small percentage of their annual output, the rest of which could, therefore, be sent to Hong Kong.

<sup>29</sup> S.A.M. Adshead, personal comment.

<sup>30</sup> S.A.M. Adshead, personal comment.

<sup>31</sup> This figure can only be reached if it is assumed that the Kwangsi Likin was 3 cash a catty.

<sup>32</sup> The Reports note that the General commanding the Kwangsi army (the officer in charge of policing the Provincial border and collecting Likin), had bought the largest salt-field at Yamchow, and charged his own salt only half of the Likin he charged salt from other salt-fields.

<sup>33</sup> The Report adds, however, 'except in examination years'. The Provincial-level Imperial examinations for Kwangsi were held at Keilin, and candidates from South Kwangsi travelled there by boat – down-river to the West River, and then up the West and Li Rivers to Kweilin. By custom, as a gesture of respect for the examinations, the baggage of candidates was not inspected at the barriers. As a result, each South Kwangsi candidate seems routinely to have taken in his 'baggage' a full boat-load of salt, the profits of which must easily have paid for the trip. The amount smuggled in this way every third year was thus very great.

<sup>34</sup> But an essential one, as these copper bars were used by the Canton Viceroy for minting the Canton cash.

<sup>35</sup> The Shasi report suggests that taxes imposed in Szechwan on Hupeh-bound salt were only about 1.4 cash the catty, probably a typographical error for 7.4 cash the catty.

<sup>36</sup> The Salt Depot was not actually in the city of Yangchow, but a little outside it, on the banks of the Yangtse, where the Grand Canal entered the Yangtse, at the small town of Shih-erh-wei (十二圩).

<sup>37</sup> At the same time, the breakage of the canal meant that the vital grain supply for Peking and the North had to be diverted to steam-ships running along the coast. These were, in the event, found to be so much more efficient, and so much cheaper, than the old canal boats that, after the Canal was rehabilitated, it was found impossible to use it for grain transport any more since the Peking consumers demanded continuing access to the much cheaper grain the steam-ships provided.

<sup>38</sup> The per catty figures are worked out in the Reports by division of sums originally per Bag, and involve rounding up, and so 5.1 and 5.2 cash per catty should be taken as essentially identical.

<sup>39</sup> The fee was, it would seem, charged in salt, which was then sold by the Inspection Bureau.

<sup>40</sup> *1906 Salt Report*, pp. 203-204.

<sup>41</sup> See D. Faure, *The Rural Economy of Pre-Liberation China: Trade Increase and Peasant Livelihood in Jiangsu and Guangdong 1870 to 1937*, Oxford University Press, East Asian Historical Monographs Series, Hong Kong, 1989, Table 4.5, p. 71.

<sup>42</sup> Traditionally, the Ichang salt-vendors sold salt at a rate of 24 taels to the catty. Exactly how this affected the retail price per standard catty is unclear.

<sup>43</sup> And this 10% may well be a tare for spillage and ullage, an acknowledged 'extra' carried above the manifest, and thus not smuggling strictly so called.

<sup>44</sup> Wuhu Report, p. 150.

<sup>45</sup> The Haikwan Tael (equalling 1388 cash) was worth 3/3½ (39½ pennies) in 1906, or 35 cash to the penny, and this exchange rate was more or less stable throughout the period 1901-1906.

<sup>46</sup> Most of the information on wage-rates in this section was provided by Se Yan from his as yet unpublished doctoral dissertation, "Real Wages and Wage Inequality in China, 1860-1936", 2008, University of California, Los Angeles (UCLA). Most of the data were taken by Se Yan from the China Maritime Customs Archives, 679(1)-323, 679(2)-823, 679(2)-1682, 679(2)-3354, 679(2)-3356, 679(2)-6088. Hong Kong average wages are taken from the *Hongkong Blue Book for 1901* (the Hong Kong Government annual official digest of statistics), "Agriculture" section, confirmed by numerous references in Hong Kong newspapers of the period. Se Yan also used figures in *Historical Materials of Modern Industry in China, 1895-1914*, Vol. 2, for Shanghai, Wuchang (Wuhan), Tientsin, Hankow (Wuhan), coal-miners in North China and Manchuria, coal-miners in Kiangsi, Chefoo, Dairen, Peking, and Chihli. Se Yan's generosity in sharing his findings in advance of publication of his thesis, and his helpfulness with comments and queries in general are gratefully acknowledged.

<sup>47</sup> The silk-weavers were skilled labourers, and a coolie's wages at Soochow would have been, at best, two-thirds of the silk-weavers wages, so probably about 125 cash a day.

<sup>48</sup> Assuming a ten-hour working day.

<sup>49</sup> Assuming the salt-price to be as at Newchwang, and the labour wage-rate as at Chinwangtao and Dairen.

<sup>50</sup> The Lappa wage-rates would have referred to Macau and the Macau border.

<sup>51</sup> China Imperial Maritime Customs, No. 1, Statistical Series Nos 3 and 4, *Returns of Trade and Trade Reports, 1906*, published by order of the Inspector-General of Customs, Shanghai, 1906. The *Mengtse Trade Report*, notes that, as a consequence of the building of the Kunming-Hanoi railway, all available labour had been soaked up by the railway, leading to the cost of living doubling. After the railway had forced up the daily rates for labour they had reached 40-45 cents a day (400-450 cash). The implication would seem to be that the normal rate was about half that, or about 200 cash the day. However, this figure is, clearly, suspect, and the normal wage-rates, before the coming of the railway works, may well have been below 200 cash the day.

<sup>52</sup> China Imperial Maritime Customs, No. 1, Statistical Series Nos 3 and 4, *Returns of Trade and Trade Reports, 1906*, op.cit.

<sup>53</sup> Yeh-chien Wang, "Secular Trends of Rice Prices in the Yangzi Delta 1638-1935", in Thomas G. Rawski and Lillian M. Li *Chinese History in Economic Perspective*, 1992, pp. 35-68.

<sup>54</sup> For Shanghai prices see D. Faure, *The Rural Economy of Pre-Liberation China*, op. cit., Table 4.2 p. 65, and for Soochow and Shanghai see Yeh-chien Wang, "Secular Trends of Rice Price in the Yangzi Delta 1638-1935", in Thomas G. Rawski and Lilian Li, *Chinese History in Economic Perspective*, Table 1.1. The prices for Soochow are in column 2 of this Table, and those for Shanghai are in column 4 of this Table: both sets of prices as given there need to be reduced by 10% to bring them to standard Haikwan taels, op.cit.

<sup>55</sup> The retail price quoted is 5,000 cash the *shih*, but the *shih* in question is probably one of 150 catties. A *shih* of 150 catties was used to weigh rice at Wuhu.

<sup>56</sup> This loose rice, sold from barrels in the traditional manner, is the cheapest available on the market. Pre-packed rice of the basic quality sold in Supermarkets cost about \$11 a catty.

<sup>57</sup> Again, this salt, made in the traditional manner by hand, and sold loose from a barrel, is the cheapest available in Hong Kong. In Supermarkets even the cheapest grade of "Cooking Salt" cost \$2.65 a catty, and the pre-packed ultra-fine salt (the normal salt as used in Europe or the USA) cost about \$12 a catty.

<sup>58</sup> The price differential for pre-packed rice and pre-packed cooking-salt in the Hong Kong supermarkets comes to 1 : 0.24, which is similar to the price differential for the loose product.

<sup>59</sup> Hong Kong average retail prices are taken from the *Hongkong Blue Book for 1901* (the Hong Kong Government annual official digest of statistics), "Agriculture" section. The price for pork is confirmed in the "Report of the Committee on Food Supply" of 1901, see *Sessional Papers: Hong Kong for 1901*.

<sup>60</sup> The danger of high salt intake is that it increases the risk of hypertension and heart attack, at least in those individuals already at risk because of other underlying factors, although it is questionable how much, if at all, high salt intake is a risk where a generally healthy individual without any pre-disposition to heart problems is in question. As a result of the great difficulty modern man has of escaping salt intake in pre-processed food, medical opinion is greatly divided on what is a healthy salt intake of free-salt (table-salt).

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Expert estimates range from 6½ ounces a year to 6½ pounds, a range which makes it immediately clear that there is no medical consensus on the issue.

<sup>61</sup> For salt starvation generally see D. Denton, *The Hunger for Salt: An Anthropological, Physiological and Medical Analysis*, Springer, Berlin, 1984. For salt-starvation in India see Roy Moxham, *The Great Hedge of India*, Constable, London, 2001, and “Salt Starvation in British India – Consequences of High Salt Taxation in the Bengal Presidency, 1765 to 1878”, *Economic and Political Weekly* (Mumbai), Vol. XXXVI, No. 25, 2001, or on-line at <<http://www.rmoaxham.freeserve.co.uk/salt%20starvation.htm>>.

<sup>62</sup> These figures for minimum safe salt intake were for people acclimatised to the heat, who sweated much less than newcomers to the area. Where outsiders were concerned, having to do strenuous work in the full sun, and hence sweating profusely, far higher levels of salt intake were needed. It was thus found that British soldiers in India needed no less than the equivalent of 24 pounds of salt a year, of which three pounds was naturally present in the food they ate, but of which the bulk of the rest had to be taken as salt-tablets, if they were to avoid the lassitude and exhaustion of the early stages of salt-deprivation.

<sup>63</sup> Taking the Provincial borders as they were in 1901, with Pakhoi and Yamchow lying in Kwangtung.

<sup>64</sup> The figures given above for the real price of salt in Hong Kong and elsewhere assume that a man required five catties of salt a year. This is a figure for free-salt, table salt, and assumes purchase also of salted fish, salted eggs, soy sauce, etc.