

## DIKE CONSTRUCTION IN CHING-CHOU

A Study Based on the "T'i-fang chih" Section of the *Ching-chou fu-chih*

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*The Scale of Dikes in Ching-chou fu*

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Appendix

Protection of lives and property of the people in Ching-chou 荊州 prefecture depended greatly upon the solidity of the dikes built along the Yangtze River and its tributaries that flowed through the area. In addition to the rivers there were also lakes; people living near them struggled constantly to wrest more cultivable land from their waters. As a result dikes were built for production as well as for protection. In a country with a vast system of waterways, properly maintained dikes were often a matter of life and death; the economic devastation resulting from flooding is a familiar statistic in Chinese history. Therefore the dike system was a carefully administered and closely integrated aspect of much of Chinese society. This paper, in the nature of a case study, will focus on the problems of dike works in Ching-chou, an area located in the south of the present day Hupei province. The distance of the area from east to west was 540 li 里 (1 li = 0.576 km) and that from north to south 210 li.

First, the scale of the dikes will be described in terms of location, length, and shape. Then I will deal with the role of the local officials involved in the dike works, before taking up the question of financing. Next, the organization responsible for the upkeep of the dikes will be presented and finally, techniques related to the dike works will be mentioned briefly. Because this paper is based primarily on the "T'i-fang chih" 隄防志 (Treatise on water conservancy) section of the *Ching-chou fu-shih* 荊州府志 (Gazetteer of Ching-chou prefecture) it may not present the whole picture. Yet the information that does appear can be used for comparison with data concerning similar hydraulic works in other area. In this way a clearer idea of the role of dikes in China can be gained.

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## *The Scale of Dikes in Ching-chou fu*

Three major dike (*t'i* 隄<sup>1</sup>) systems are mentioned in the “*T'i-fang chih*”: Wan-ch'eng *t'i* 萬城隄, *Shun-chiang t'i* 順江隄 and *yüan t'i* 院隄 (or *wan t'i* 垸隄). Wan-ch'eng *t'i* was located in Chiang-ling hsien 江陵縣 on the north bank of the Yangtze River. This dike system was considered the most important dike work in Ching-chou because of its location in the upper valley and because the city of Ching-chou prefecture was also located on the north bank. *Shun-chiang t'i* literally means the dikes along the Chiang 江, that is, the Yangtze River. It was used by the gazetteer compilers to refer to all the dikes except the Wan-ch'eng *t'i* along the Yangtze River and its tributary, the Hu-tu River 虎渡河. As for *Yüan t'i*, it referred to dikes built around the farming land.

Along the north bank of the Yangtze River there were dikes in Chiang-ling hsien and Chien-li hsien 監利縣. The dikes in Chiang-ling were originally named Chiang-pei ta-t'i 江北大隄, that is, the main dike system on the north bank of the Yangtze River.<sup>2</sup> The name Wan-ch'eng, derived from the name of a city and originally used to refer to only a small part of the dike, was adopted as the name for all 67 works of this system from 1788 on.<sup>3</sup> Construction of dikes on the north bank of the Yangtze River began in the Eastern Chin dynasty (317-420).<sup>4</sup> Further developed during the Sung dynasty (960-1279) and the Ming dynasty (1368-1644), and the dikes in Chiang-ling totaled 32,255 *chang* 丈 (1 *chang* = 10 *ch'ih* 尺, 1 *ch'ih* = 0.32 meter) in the Yung-cheng period (1723-1735). By the beginning of the Kuang-hsü period (1875-1908), the length had increased to 39,211 *chang*.<sup>5</sup> The dike in Chien-li hsien included 111 works and had a length of 67,192 *chang*.<sup>6</sup> Altogether the dikes of Chiang-ling and Chien-li on the north bank of the Yangtze River covered 106,430 *chang* by 1875 – an increase for more than 57,000 *chang* since 1757.

Wan-ch'eng *t'i* was not the longest dike system, but it was the most important construction in Ching-chou not only because of its location but also because special work had been undertaken to increase its solidity. Consequently Wan-ch'eng *t'i* also became more magnificent than other dike constructions. For example, there were 10 stone dikes (*shih-chi* 石磯) built at places where the danger of flooding was greatest.<sup>7</sup>

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<sup>1</sup> The character 隄 can be pronounced as *ti* or *t'i*; in order to distinguish it from “*ti-fang-chih*” 地方志 (local gazetteer), *t'i* is used in this paper whenever dike is concerned.

<sup>2</sup> *Ching-chou fu-chih* (1880 ed.), 18:1a.

<sup>3</sup> *Ibid.*, 18:6a. Two of the 67 works were added in later period, see 1a-3a.

<sup>4</sup> *Ibid.*, 18:2a. The first dike was known as Chin-t'i 金隄 (Golden dike) which was constructed when Huan Wen 桓溫 was Ching-chou tz'u-shih 荊州刺史 (Prefect of Ching-chou) in 345-347.

<sup>5</sup> *Ibid.*, 18:1a, 2b-5a.

<sup>6</sup> *Ibid.*, 19:12b-17a.

<sup>7</sup> *Ibid.*, 18:11b-12a.

Moreover, nine iron oxen (*t'ieh-niu* 鐵牛) and an iron beast (*t'ieh-shou* 鐵獸) were set up at important places along the dike to act as symbols against the flood.<sup>8</sup>

Among the *Shun-chiang t'i* on the south bank of the Yangtze River, there were dikes in Chiang-ling, Kung-an 公安, Shih-shou 石首, and Sung-tzu 松滋. The following table includes the number and length of the dikes in these districts:<sup>9</sup>

Location	Length ( <i>chang</i> )	No. of works
Chiang-ling upper part	9,268	16
Chiang-ling lower part	5,820	12
Kung-an	21,665	47
Shih-shou	8,875	18
Sung-tzu	12,332	99
Total	47,960	192

As for dikes in Chih-chiang 枝江, although they were built on the sand banks of the Yangtze, there is no record for their length.

Along the Hu-tu River, a tributary of the Yangtze running southward to Tung-t'ing Lake (洞庭湖), there were also dikes on both the east and the west banks. The following table shows the length of dikes along the Hu-tu River in Chiang-ling and Kung-an:<sup>10</sup>

Location	Length ( <i>chang</i> )	No. of works
West bank Chiang-ling	3,020	6
Kung-an	8,500	22
Total	11,520	28
East bank Chiang-ling	4,190	7
Kung-an	7,750	22
Total	11,940	29

In addition to the main dikes (*ta-t'i* 大隄), there were also secondary dikes known as *yüeh-t'i* 月隄, or moon-shaped dikes. The function of the moon-shaped dikes was to protect the main dikes.<sup>11</sup> In Ching-chou, moon-shaped dikes were built

<sup>8</sup> *Ching-chou fu-chih* (1880 ed.), 17:6a-b, 18:12b-13b. The idea that the iron ox could guard against a flood was related to the theory of the "five elements" (*wu-hsing* 五行).

<sup>9</sup> *Ibid.*, 19:1a-b, 5b, 8b-9a, 20a, 25b.

<sup>10</sup> *Ibid.*, 19:1a-b, 6a-b.

<sup>11</sup> Lien-sheng Yang, "Economic Aspects of Public Works in Imperial China," in *Excursions in Sinology* (Cambridge, Mass.: Harvard University Press, 1969), p. 241; *Chung-kuo ho-kung ts'u-yüan* 中國河工辭源 (A glossary of terms of the water conservancy in China; Nanking, 1936), pp. 49-50.

in places where there had been breaches in the main dikes. Along the Wan-ch'eng dike system there were 28 moon-shaped dikes that had been built during the period of 1697-1845 with a total length of more than 6,682 *chang*.<sup>12</sup> Moon-shaped dikes were also built in Chien-li,<sup>13</sup> and on the south bank in Kung-an but there is no record of the length of the latter.<sup>14</sup> In Sung-tzu there was only one moon-shaped dike.<sup>15</sup> Even along the Hu-tu River moon-shaped dikes were built both on the east and the west banks.<sup>16</sup> Moreover, a *tzu-tien* 子埧, a small dike built on top of the main dike to add to its height, was built at Li-chia pu 李家埠, one of the Wan-ch'eng dike works, in 1844.<sup>17</sup>

Although records are insufficient to determine the height of every dike in detail, some impression of their size can be gained from the following example. The Chou-kung t'i 周公隄 (Dike in memorial of Sir Chou) constructed in 1733 was 316 *chang* long and 1.7 *chang* high. It was 16 *chang* wide at the bottom and 4 *chang* wide at the top. This dike was included later in the Wan-ch'eng dike system.<sup>18</sup> The *Wan-ch'eng-t'i chih* 萬城隄志 (Treatise on the Wan-ch'eng dike) mentioned a method known as "erh-wu shou-fen fa" 二五收分法. According to this method, when one *ch'ih* of earth has been piled up and tamped hard as a layer, the next layer should be decreased in width on both sides by 0.25 *ch'ih*.<sup>19</sup> Apparently, most dikes sloped inward on both sides.

In addition to the main dikes and the moon-shaped dikes that were along the river, there were also smaller dikes known as *yüan-t'i*, which the farming people built around their cultivated fields.<sup>20</sup> These *yüan* dikes were either near the rivers or near the lakes.<sup>21</sup> While the main dikes and the moon-shaped dikes were mainly for protection against flood, the *yüan* dikes with sluice gates and dams (*cha* 閘 and *yen* 堰; in Ching-chou, they are also known as *tang* 塘 or *tou* 埭), and channel (*tou-shui* 剝水)<sup>22</sup> served not only for the purpose of protection but also for irrigation. A

<sup>12</sup> *Ching-chou fu-chih* (1880 ed.), 18:10b-11b. There were only two works without records of length. In the 1757 edition of the prefecture gazetteer, one comment notes that construction of moon-shaped dikes had already become important in the Ch'ien-lung period (16:22b-23a).

<sup>13</sup> *Ching-chou fu-chih* (1880 ed.), 19:13a-15b.

<sup>14</sup> *Ibid.*, 19:8a-b.

<sup>15</sup> *Ibid.*, 19:21a.

<sup>16</sup> *Ibid.*, 19:1b-2a.

<sup>17</sup> *Ibid.*, 17:11b-12a; 18:6a.

<sup>18</sup> *Ibid.*, 18:6a.

<sup>19</sup> *Wan-ch'eng-t'i chih* (1876 ed.), 9:41a.

<sup>20</sup> *Ching-chou fu-chih* (1880 ed.), 20:1a.

<sup>21</sup> *Ibid.*, 20:5a-b. P'eng K'uei 彭葵, the governor of Hupei, in his memorial on the prohibition of illegal *yüan* noted that people built dikes near the lakes and rivers. See also Hu Tsai-k'o 胡在恪, "Chien-li t'i-fang k'ao 監利隄防考 (A survey of the history of dikes in Chien-li)," *Ching-chou fu-chih*, 19:12b. Hu's essay reveals that *yüan* were built in Chien-li in the early Ming period for the first time.

<sup>22</sup> *Ching-chou fu-chih* (1880 ed.), 20:6a.

farming settlement inside the surrounding *yüan* dikes was called a *yüan*. From the number of these farming settlements we may get an impression about the scale of the *yüan* dikes. The following table shows the number of *yüan* settlements in each district.<sup>23</sup>

District	Number of <i>yüan</i>
Chiang-ling	179
Kung-an	47
Shih-shou	42
Chien-li	498
Sung-tzu	36
Chih-chiang	17

In Kung-an there were also *tzu-yüan* 子垵 or secondary *yüan* dikes, but they had been ruined by floods by 1874.<sup>24</sup>

The records show that in Chiang-ling there were 16,581 *chang* of the *yüan* dikes along the tributaries of the Han River 漢江 and around lakes. These dikes were known as Hsiang-ho t'i 襄河隄, though in actuality they were not along the Hsiang River.<sup>25</sup> Records of length of *yüan* dikes in other districts are not included in the "T'i-fang chih" section; however, the 1757 edition of the *Ching-chou fu-chih* records that in Sung-tzu the dikes of the T'ai-lai *yüan* 泰來院 had a length of 2,225 *chang* and those of the T'ai-p'ing *yüan* 泰平院 had 5,091 *chang*.<sup>26</sup>

The *yüan* dikes were built mainly to reclaim land for cultivation. In theory newly exploited shore lands all belonged to the government; therefore, unless government permission had been obtained, the *yüan* dikes were considered to be illegal. In particular, *yüan* dikes built near the main dikes were considered very harmful to the solidity of the main dikes, and in 1789, they were ordered to be destroyed.<sup>27</sup> In Chiang-ling seven illegal *yüan* dikes were destroyed and two others had been investigated and in Kung-an one illegal *yüan* dike had been investigated. In Sung-tzu there were 34 illegal *yüan*, only four of which were permitted to remain. In Chien-li, the cases of three illegal *yüan* were taken to court and another one was adjudged not harmful to the main dikes. In Sung-tzu, among the total 36 *yüan* only eight of them were considered legal.<sup>28</sup>

<sup>23</sup> *Ching-chou fu-chih* (1880 ed.), 20:3a-4b; 6b-7b; 13a-17a; 17b-18a; 19a-20a. The names of *yüan* were also names of farming settlements.

<sup>24</sup> *Ibid.*, 20: 6b. Also see *Kung-an hsien-chih* 公安縣志 (Gazetteer of Kung-an district; 1874 ed.), 3:48b.

<sup>25</sup> *Ching-chou fu-chih* (1880 ed.), 20:1a-b.

<sup>26</sup> *Ching-chou fu-chih* (1757 ed.), 16:35b.

<sup>27</sup> *Ching-chou fu-chih* (1880 ed.), 20:5b-6a. Also see *Wan-ch'eng-t'i chih*, 8:12b.

<sup>28</sup> *Ching-chou fu-chih* (1880 ed.), 20:4b-5a; 7b; 11b-12a; 17a; 18a-b.

The scale of sluices and dams was rather small as can be seen from the following examples. In Shih-shou a stone sluice (*shih-tou* 石剝), which was built in 1870, was 5 *ch'ih* wide, 6 *ch'ih* high and 12 *ch'ih* long.<sup>29</sup> In Sung-tzu there were several dams (*tang* 墻) for irrigation. The smallest dam could provide water for irrigating one *ch'ing* 頃 (1 *ch'ing* = 100 *mou*畝)<sup>30</sup> of land and the largest one could provide water for irrigating six *ch'ing* of land.<sup>31</sup> Some sluices were used for drainage as well as for irrigation purposes.<sup>32</sup> The time for opening and closing the sluice gates were regulated so that the sluices could be used without causing damages to neighboring *yüan*. In Chien-li a regulation was made by the governor-general of Hu-Kuang 湖廣 in 1807 that on the fifteenth of the tenth month the Hsin-t'i-cha 新隄閘 was to be opened and then on the twentieth the Fu-t'ien-ssu-cha 福田寺閘 was to be opened; on the fifteenth of the third month the Fu-t'ien-ssu-cha was to be closed and then the Hsin-t'i-cha was to be closed on the twentieth.<sup>33</sup>

According to Ku Yen-wu 顧炎武 (1613-1682), prior to the Sung dynasty no serious inundation had occurred in Ching-chou.<sup>34</sup> The dike construction became necessary because the rivers were gradually silted up and the land had become cultivated. In Ch'ing times building dikes was considered to be more important than dredging the rivers, as was pointed out by Juan Yüan 阮元 (1764-1849) and Yü Ch'ang-lieh 俞昌烈 (magistrate of Chiang-ling in 1850).<sup>35</sup> Although efforts were made to struggle against natural calamities, floods still occurred frequently.<sup>36</sup>

### *The Role of Local Officials in the Dike Works*

The local officials acted as initiators and supervisors, and as the authority for raising funds for financing the dike works. Except for a few cases mentioned in the "T'i-fang chih," the original initiators for building dikes are not usually listed. However, since the magistrates and the prefects and sometimes the provincial treasurer and the intendant in Ming and Ch'ing times were usually identified as the persons who constructed and repaired dikes, the local official may logically be

<sup>29</sup> *Ching-chou fu-chih* (1880 ed.), 20: 12b.

<sup>30</sup> The measurement of *mou* changed from time to time. See Wu Ch'eng-lo 吳承洛, *Chung-kuo tu-liang-heng shih* 中國度量衡史 (A history of measurement of length, capacity and weight in China; Shanghai, 1937), pp. 75-76, 98, 310-314. A fiscal *mou* was different from an actual *mou*; see Ping-ti Ho, *Studies on the Population of China, 1368-1911* (Cambridge, Mass., 1959), pp. 103-123. Generally, 6.6 *mou* = 1 acre.

<sup>31</sup> *Ching-chou fu-chih* (1880 ed.), 10:18b.

<sup>32</sup> *Ibid.*, 20:6-b; 20b.

<sup>33</sup> *Ibid.*, 20:17b.

<sup>34</sup> *Ibid.*, 18:12a.

<sup>35</sup> *Ibid.*, 19:3b-4a; 9a.

<sup>36</sup> *Ibid.*, chüan 76. Also see Ping-ti Ho, pp. 228-230 and Appendix IV. The natural calamities occurring in Hupei included frequent floods.

considered as the initiator of the dike work.<sup>37</sup> This role is not unusual because the local officials in Ming and Ch'ing times had authority over almost every aspect of local affairs and it was natural for them to pay attention to the dike works that were important in the area.<sup>38</sup>

In the case of Wan-ch'eng t'i, prior to 1788 the responsibility for repairs fell upon the hsien magistrate and assistant magistrate of Chiang-ling. However, a regulation for annual repair (*sui-hsiu chang-ch'eng* 歲修章程) was adopted in 1788 by the suggestion of A-kuei 阿桂 (1717-1797), who was sent by the Ch'ien-lung Emperor to investigate an inundation that had occurred in that year. According to the regulation, the Ching-nan *tao* 荆南道 (the intendant of Ching-nan) and the Ching-chou *chih-fu* 荊州知府 (the prefect of Ching-chou) were to take charge (*tu-pan* 督辦) of the annual repairs, and the Ching-chou *shui-li t'ung-chih* 荊州水利同知 (the sub-prefect in charge of water conservancy in Ching-chou) was to undertake (*ch'eng-pan* 承辦) annual repairs of the Wan-ch'eng dike. The responsibility of the Ching-chou sub-prefect was to investigate personally, with the hsien magistrate of Chiang-ling, dikes that should be repaired and to estimate the cost of repairs. After this he had to urge the hsien magistrate to collect the necessary money from the people.<sup>39</sup> In 1832 Lu K'un 盧坤 (*chin-shih* 進士, 1799), the governor-general of Hu-Kuang 湖廣, suggested that the prefect of Ching-chou should be assigned to take over the duty of the sub-prefect because the latter was only a subordinate official (*tso-tsa hsien-yüan* 佐雜閒員) and was not efficient enough in undertaking the responsibility of urging the collection of money. The suggestion of Lu K'un was accepted by the throne and from 1832 on the prefect of Ching-chou had direct responsibility for the Wan-ch'eng dike.<sup>40</sup>

Moreover, a decision was made in 1788 to divide the whole dike into three sections and to entrust the dike administration to the Chiang-ling *hsien-ch'eng* 江陵縣丞 (the assistant district magistrate of Chiang-ling), the Sha-shih *hsün-chien* 沙市巡檢 (the sub-district magistrate at Sha-shih), and the Hao-hsüeh *hsün-chien* 郝穴巡檢 (the sub-district magistrate at Hao-hsüeh).<sup>41</sup>

Another important regulation made the officials in charge of the Wan-ch'eng dike repairs responsible for guaranteeing the solidity of the dike works for a 10-year period (*pao-ku shih-nien* 保固十年). If the dike broke within 10 years after it was

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<sup>37</sup> *Ching-chou fu-chih* (1880 ed.), 18: 3a-b; 4a-b; 5a-b; 19: 7b-8a.

<sup>38</sup> For the role of local officials in Ming and Ch'ing times, see Lien-sheng Yang, "Ming Local Administration," in Charles O. Hucker, ed., *Chinese Government in Ming Times* (New York: Columbia University Press, 1969), pp. 15-21; and Ch'ü T'ung-tsu, *Local Government in China under the Ch'ing* (Cambridge, Mass.: Harvard University Press, 1962), especially pp. 155-156.

<sup>39</sup> *Ching-chou fu-chih* (1880 ed.), 18: 7a-b.

<sup>40</sup> *Ibid.*, 17: 8b; 18: 8b-9a.

<sup>41</sup> *Ibid.*, 18: 7b-8a. For the organization of the hsien government, see Ch'ü T'ung-tsu, pp. 8-9.

repaired, the responsible officials would be compelled to repay the amount used (*p'ei-hsiu* 賠修).<sup>42</sup> This rule made it clear that the central government retained supervision over the dike works in Ching-chou, especially when Wan-ch'eng dike was concerned, just as it had supervisory control over the dike works of Yellow River.

In the *Wan-ch'eng-t'i chih*, another rule for having officials to repay the cost of repairs is mentioned. This rule states that the officials who originally undertook the repairs had to repay 60 per cent of the cost and the incumbent officials had to repay 40 per cent of the cost if a dike broke during his term.<sup>43</sup> As a result of this rule Ch'eng I-mei 程伊湄 (*chin-shih*, native of Chekiang), the prefect of Ching-chou in 1842, was ordered to repay 28,300 taels for repairing a breach at Shang-yü pu-t'ou 上漁埠頭, one of the official constructions of the Wan-ch'eng dike system.

The dikes along the Yangtze River in each district and the dikes along the Hu-tu River were the responsibility of each district magistrate; in practice the responsibility was sub-divided among the local assistant officials. For example, the dikes in Chien-li came under the control of the Yao-ch'i *hsün-chien* 窑圻巡檢 (sub-district magistrate at Yao-ch'i), the *hsien-ch'eng* 縣丞 (the assistant district magistrate), the Chu-ho *chu-pu* 朱河主簿 (second deputy magistrate at Chu-ho), and the Pai-lo *hsün-chien* 白螺巡檢 (sub-district magistrate at Pai-lo).<sup>44</sup> In districts where there were grain transport stations (*wei* 衛), officials of these stations shared part of the responsibility with the district magistrate.<sup>45</sup>

Although the *yüan* dikes were constructed by the local farming people, they were not automatically under the authority of the local people. From 1748 on orders were issued to investigate whether the *yüan* dikes were legal or illegal. Since in theory the land belonged to the government, people who built *yüan* dikes privately without permissions of the government were considered to be acting illegally. Furthermore, since some of the *yüan* dikes were considered harmful to the main dikes, they were ordered to be destroyed, as we have seen. In this manner both the local government and the central government exercised authority over the *yüan* dikes. Moreover, in the cases of Chiang-ling and Chien-li, the *yüan* were directly controlled by several subordinate officials in charge of river administration (*hsün* 汛).<sup>46</sup> In Chih-chiang hsien, an unusual situation existed in which the dikes were not under the control of local officials from 1716 on. For this reason there were no records kept about the

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<sup>42</sup> *Ching-chou fu-chih* (1880 ed.), 18: 7b. For the concept of *pao-ku* 保固, see Lien-sheng Yang, "Public Works," p. 246. A memorial of A-kuei included in the *Wan-ch'eng-t'i chih* notes that officials responsible for the Wan-ch'eng dike since 1779 were investigated and punished (7: 5a-10b).

<sup>43</sup> *Wan-ch'eng-t'i chih*, 7: 10b-11a.

<sup>44</sup> *Ching-chou fu-chih* (1880 ed.), 19: 13b-15b.

<sup>45</sup> *Ibid.*, 19: 22a-b.

<sup>46</sup> *Ibid.*, 20: 3a-4b; 13a-17b.

length of dikes and the illegal *yüan* dikes there.<sup>47</sup>

When a major construction or repair was to take place, a high ranking local official was assigned by the throne to take charge of the work. For example, in 1788 Pi Yüan 畢沅 (1730-1797) was appointed governor-general of Hu-Kuang to take charge of the Wan-ch'eng dike construction. In 1842 and 1844 the governor-general of Hu-Kuang, Yü-t'ai 裕泰 (Manchu, appointed governor-general in 1840 and again in 1844), took charge of three repairs of the Wan-ch'eng dike.<sup>48</sup>

### *Sources for Financing Annual Repairs and Other Construction*

An edict of the Yung-cheng Emperor in 1727 indicated that the dikes in Ching-chou belonged to the people (*min-t'i* 民隄), and were to be repaired by local residents. Although imperial funds had been granted to repair the dikes in that year, the emperor would not change their names to "imperial dike" (*ch'in-t'i* 欽隄) because he was afraid that once the name was changed, local people would no longer consider dike repairs to be their own business. In this edict the emperor also ordered the governor-general of Hu-Kuang and the governor of Hupei to discuss regulations concerning supervision of the dike works and the guarantee of the solidity of the dike works by local officials. However, records of the "T'i-fang chih" do not show that any such regulations were made in 1727.<sup>49</sup> Edicts of the Ch'ien-lung Emperor in 1788 still mentioned that the dikes were repaired by the people according to precedent (*li-kuei min-hsiu* 例歸民修).<sup>50</sup> In that year, after great calamity was caused by floods, regulations regarding the annual repair of the Wan-ch'eng t'i were circulated.<sup>51</sup> Although the term *sui-hsiu* 歲修 (annual repair) was used in the regulations, it does not necessarily mean that every dike was repaired annually. The *Wan-ch'eng-t'i chih* records that some dikes were repaired annually (*lei-nien ku-hsiu* 累年估修), while others were repaired every other year (*lei-nien chien-pu* 累年間補).<sup>52</sup>

In 1788, the Wan-ch'eng dike system was divided into the official works (*kuan-kung* 官工) and the people's works (*min-kung* 民工). The official works included 27 constructions stretching from Twei-chin-t'ai 堆金台 to Heng-t'i 橫隄; the people's works included 40 constructions between Juan-chia-wan 阮家灣 and T'o-mao-pu 拖茆埠. The main difference between the official works and the people's works was that

<sup>47</sup> *Ching-chou fu-chih* (1880 ed.), 19: 24a-25b. Also see *Chih-chiang hsien-chih* (1866 ed.), 3: 2b-3a.

<sup>48</sup> *Ching-chou fu-chih* (1880 ed.), 19: 24a-25b. Edicts contained in *chüan* 17 indicate that works in these three years were major ones.

<sup>49</sup> *Ibid.*, 17: 1a-b.

<sup>50</sup> *Ibid.*, 17: 2a; 3a.

<sup>51</sup> *Ibid.*, 18: 7a-b.

<sup>52</sup> *Wan-ch'eng-t'i chih*, 1: 1b-9a. In the *Chung-kuo ho-kung tz'u-yüan*, the term *sui-hsiu* means that dikes should be repaired annually. It also means to repair dikes by using an annual funds. See p. 75.

the former were repaired by the government funds and therefore the officials had to guarantee the strength of the dikes and report their expense accounts to the Board of works; the latter were repaired with an “earth fee” (*t'u-fei* 土費) collected from the people of Chiang-ling who were living on the north bank of the Yangtze River, and the officials were not required to report the account nor to guarantee the strength of the works, although they were responsible for supervising them.<sup>53</sup>

According to one of the regulations made in 1788, if the repair work required more than 500 taels, funds could be borrowed from the provincial treasury (*fan-ssu* 藩司). The sub-prefect in charge of water conservancy and the magistrate of Chiang-ling hsien had to investigate and estimate the necessary cost for repair every year after the autumn flood (*chiu-hsün* 秋汛). A report was sent to the prefect who examined it and sent it onward to the intendant. The intendant re-examined it and then sent it to the provincial treasury from which the funds could be obtained. The expenses for repair work were to be reported to the Board of Works. The borrowed funds were to be repaid by the people who received the benefits of the repairs by distributing the cost in proportion to the quota of their land tax.<sup>54</sup> According to *Wan-ch'eng-t'i chih*, the borrowing of funds from the provincial treasury had not been carried out frequently.<sup>55</sup>

In 1792 the prefect of Ching-chou, Ts'ui Lung-chien 崔龍見, suggested that the people's works should continue to be repaired by the people, but should be supervised by the officials. The earth fee used for annual repairs was estimated by the sub-prefect and the hsien magistrate, but three or four local gentry and elders (*shen-ch'i* 紳耆) were “elected” by the people (*kung-chü* 公舉) to manage the receipt and spending of the fee.<sup>56</sup> The collection of the earth fee was also based on the principle of allotting the cost among the people who received the benefits.

The “T'i-fang chih” did not provide information concerning the scale of the earth fee and the method of collection. This information can be found in the *Chiang-ling hsien-chih* 江陵縣志 (Gazetteer of Chiang-ling district), the *Wan-ch'eng-t'i hsü-chih* 萬城隍續志 (Additional treatises on the Wan-ch'eng dike).

The earth fee was counted by *fang* 方 or cubes of earth. The measurement of a *fang* in the Yellow River dike works was one *chang* long, one *chang* wide and one

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<sup>53</sup> *Ching-chou fu-chih* (1880 ed.), 18: 7a-b. Also see *Wan-ch'eng-t'i chih*, 6A: 3a: “*Min-kung pu-chieh-t'ang, pu-tsou-hsiao, pu-pao-ku* 民工不借帑，不奏銷，不保固” (As for the people's dikes, there is no regulation for borrowing funds, reporting the expenses, and guaranteeing the solidity of dikes.) The “T'i-fang chih” section does not explain clearly when the Wan-ch'eng dike system was divided into *kuan-kung* and *min-kung*. Since the 1757 edition of *Ching-chou fu-chih* does not record such types of division and since the dike works included in *kuan-kung* were works repaired with the imperial funds in 1788, I assume that the division began in 1788.

<sup>54</sup> *Ching-chou fu-chih* (1880 ed.), 18: 7a-b.

<sup>55</sup> *Wan-ch'eng-t'i chih*, 6A: 1b.

<sup>56</sup> *Ibid.*, 6A: 2a-b.

*chang* high.<sup>57</sup> In *Chien-li hsien-chih* 監利縣志 (Gazetteer of Chien-li district), a *fang* was one *chang* long, one *chang* wide and 2.5 *ch'ih* high.<sup>58</sup> Since the measurement of a *fang* was not recorded in the “T’i-fang chih” and other records concerned with the Wan-ch’eng dike, the exact measurement of the *fang* used in the Wan-ch’eng dike works cannot be ascertained. It is possible that the standard of the Yellow River works was used.

Prior to 1801 each *fang* required payment of 0.12 taels of silver. In 1801 the price was converted to 160 *wen* 文 (copper cash) in order to relieve the burden of the people.<sup>59</sup> Generally, no more than five *fang* were to be assigned to one tael of silver paid for land tax. However, the rate varied from time to time and was determined by the officials. Records show that in 1842, 50 *fang* were assigned to one tael of land tax.<sup>60</sup> In that year the prefect of Ching-chou, Ch’eng I-mei, was ordered to repay the outlays for repair, so the high rate of the earth fee was an attempt to collect necessary funds. According to *Wan-ch’eng-t’i chih*, in most of the years during the period 1857-1883, 28-29 *fang* or even more than 32 *fang* were assigned to one tael of land tax.<sup>61</sup> As a result the burden of the earth fee was considerably heavier in the late Ch’ing.

Although this fee was managed by the local gentry and elders, it was quite difficult to collect enough money to begin the repair works. Therefore, the local officials always had to arrange for an advance of money in different ways. Here it is necessary to mention that the method of collecting the earth fee had also been changed. From 1832 on, the local gentry and elders who managed the earth fee were selected by the local official instead by the local people. During Ch’eng I-mei’s term as the prefect of Ching-chou (1841-1844), the yamen clerks were entrusted to collect the fee.<sup>62</sup> In 1860 a new formula was decided by the prefect, T’ang Chi-sheng 唐際

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<sup>57</sup> E-tu Zen Sun, *Ching Administrative Terms* (Cambridge, Mass.: Harvard University Press, 1961), p. 335.

<sup>58</sup> *Chien-li hsien-chih* (1872 ed.), 3: 10a-b.

<sup>59</sup> The “ideal” official exchange rate of coin and silver was 1000:1, but the market value of coin had fallen by 1850. See Frank H. H. King, *Money and Monetary Policy in China* (Cambridge, Mass.: Harvard University Press, 1965), pp. 133-143. If the convert payment really could relieve the burden of the people as the record claimed, it was apparent that the price of silver had already been increased by 1801. Although the coin-silver exchange rates of the Ching-chou area are still unknown, those of the Peking area can be found in Yen Chung-p’ing 嚴中平 and others, *Chung-kuo chin-tai ching-chi-shih t’ung-chi tzu-liao hsuan-chi* 中國近代經濟史統計資料選輯 (A collection of statistical materials on the modern economic history of China; Peking, 1955), p. 37; and Ch’en Chao-nan 陳昭南, *Yung-cheng Ch’ien-lung nien-chien yin-ch’ien-pi-chia pien-tung* 雍正乾隆年間銀錢比價變動 (The movement of ratio between silver and cash during the period of Yung-cheng and Ch’ien-lung, 1723-1795; Taipei, 1966), p. 12. In the period 1787-1801, one tael was more than 1,000 *wen*. (I am indebted to Professor L. S. Yang for reminding me of these two references.)

<sup>60</sup> *Chiang-ling hsien-chih* (1876 ed.), 8: 45b-46a.

<sup>61</sup> *Wan-ch’eng-t’i chih*, 6A: 12b-13a.

<sup>62</sup> *Ibid.*, 6A: 3b.

盛 (native of Hunan, prefect of Ching-chou in 1858-1862). Six bureaus for receiving the earth fee were established in the city and surrounding villages. The time for paying the fee was fixed as follows:<sup>63</sup>

1. From the first day of the second month to the end of the third month, a cube of earth was to be paid for by 120 *wen*.
2. From the first day of the fourth month to the end of the sixth month, a cube of earth was to be paid for by 140 *wen*.
3. From the seventh to the ninth month, a cube of earth was to be paid for by 160 *wen*.

People were to pay the fee at the bureau by themselves and they were encouraged to pay it as early as possible. This method was still followed in the Kuang-hsü period.

In Sung-tzu hsien, similar practices for collecting funds for the repair of dikes were followed. Prior to 1788 the dikes there were repaired by officials (*kuan-hsiu* 官修). Since the official entrusted the yamen clerks with the collection of funds, there were hundreds of cases of corruption. In 1788, however, the local gentry (*i-shen* 邑紳) of Sung-tzu, including a certain Mr. Ts'ui 崔 and others, petitioned that the dikes should be repaired by people with official supervision (*kuna-tu min-hsiu* 官督民修). Two local gentry members who were just as well as wealthy were selected as *tsung-chü* 總局 (heads of the bureau) to handle the receipts and expenditures of the earth fee. Two other gentry members who were just and familiar with the affairs of dikes were selected *tsung-chien* 總監 (head supervisors). Their duty was to investigate the dikes and estimate the cost with the cooperation of the hsien magistrate in the tenth month of every year. Records were made and given to the *san-chien* 散監 (secondary supervisors) who directed laborers in the repair works.

There was a *ts'ui-fu* 催夫 (fee expediter) in each *tu* 都 (unit of village). The earth bill (*t'u-tan* 土單) was given to the *ts'ui-fu* who appointed a *tan-shou* 單首 (head of the bill), the person who paid the largest amount of the fee. The *ts'ui-fu* urged the *tan-shou* and the *tan-shou* urged the *wan-hu* 散戶 (miscellaneous households) to pay the fee.

Under this system, all those responsible from the heads of the bureau to the fee expediter were elected by local people at the end of every year. The yamen clerks had nothing to do with this system, which was considered the best and most efficient method for dike repair. This unofficial operation was carried out until the Kuang-hsü period except for a short interruption from 1832 to 1848. In 1832 one of the head supervisors misused the funds, which caused the bureau to cease functioning. However, from 1848 on the system was adopted again.<sup>64</sup>

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<sup>63</sup> *Chiang-ling hsien-chih*, 8: 45b.

<sup>64</sup> *Ching-chou fu-chih* (1880 ed.), 19: 22b-23a.

In Chien-li, since the territory was divided into upper, middle, and lower parts, the collection of the earth fee was also divided into three separate bureaus.<sup>65</sup> The “T’i-fang chih” does not include records about the collection of fee, but in the *Chien-li hsien-chih*, it is reported that earth bureaus (*t’u-chü* 土局) were set up by the magistrate T’ang Shu-i 唐樹義 (native of Kweichow, magistrate of Chien-li in 1831-1833) and some *wu-sheng* 武生 (military licentiate) and *sheng-yüan* 生員 (licentiate) in 1835. There were heads of bureau (*chü-shou* 局首) who took charge of the bureaus, and collectors of earth fee (*t’u-chang* 土長).<sup>66</sup>

In the case of Chih-chiang, the repairs of the dikes of Shang-pai-li-chou 上百里洲 had been managed by local people since early Ch’ing times. The *Chih-chiang hsien-chih* 枝江縣志 (Gazetteer of Chih-chiang district) mentioned that regulations were carved on a stone. An elder in charge of record (*ts’e-lao* 冊老) and four heads of dike affairs (*tsung-yü* 總圩 [yü also refer to village in some locality, but here I think it refers to dike]) were “elected” from among people who owned much land and had had experiences in local affairs.<sup>67</sup> Although the details are not clear, collection of the earth fee was probably similar to that of other districts.

In case of Kung-an, one finds an interesting phenomenon. According to the “T’i-fang chih,” most of the names of dikes in 1880 were different from those of the 1828 record. Although the previous names of the dikes are unavailable, the lists given in the “T’i-fang chih” shows that certain surnames were used as the names of dikes. There were names containing three surnames, such as Tu-Yang-Liu 杜楊劉, Hsü-Liu-Chou 許劉周, and P’ang-Yang-Lin 龐楊林. There were also names containing two surnames, such as Ts’ai-Yin kung 蔡尹工, Kao-Li kung 高李工, and Chang-Yang kung 張楊工.<sup>68</sup> My supposition is that these dikes perhaps were repaired by people of these clans. Probably, their farming settlements were located near the dikes and they therefore shared the expenses for repairing them. If records concerning the village settlements and clan distribution of this area were available, our understanding of the dikes might become clearer.

In addition to the official dike constructions in the Wan-ch’eng dike system and the people’s dikes, there were also several dikes known as *chün-t’i* 軍隄 (military dikes) in Chiang-ling, Kung-an and Sung-tzu. Among these were Ching-tso-wei pai-miao-erh-t’i 荊左衛白廟兒隄 in Chiang-ling, Ching-tso-wei pai-chia-wan-t’i 荊左衛白家灣隄 in Kung-an, and Ching-yu-wei ch’i-li-miao-t’i 荊右衛七里廟隄 in Sung-tzu.<sup>69</sup> A report of the hsien magistrate of Chiang-ling in 1868 stated that since

<sup>65</sup> *Ching-chou fu-chih* (1880 ed.), 19: 14a.

<sup>66</sup> *Chien-li hsien-chih*, 3: 2b-3a.

<sup>67</sup> *Chih-chiang hsien-chih*, 3: 2b-3a.

<sup>68</sup> *Ching-chou fu-chih* (1880 ed.), 19: 5a-6b.

<sup>69</sup> *Ching-chou fu-chih* (1880 ed.), 19: 1a-b; 5a-6b; 20b-21b.

the grain transport station owned land at Pai-miao-erh, it was necessary to assign them a share of the cost of repairs to be fair to the other local people.<sup>70</sup> Dikes located in certain places were under the responsibility of stations that had land in the vicinity. Of course, it is necessary to point out here that the grain transport stations in Ch'ing times were not really units of the military force.

Moreover, there were *t'un-t'i* 屯隄 (agricultural-settlement dikes) in Sung-tzu. Whether the agricultural settlements in Sung-tzu belonged to the people (*min-t'un* 民屯) or to the military forces (*ch'un-t'un* 軍屯) is not clear, but these dikes must have been repaired by a sharing of costs among some type of agricultural settlers. Another interesting fact is that in some cases the people's dikes, the military dikes, and the agricultural settlement dikes shared the same place name. For example, there were Ch'i-li-miao chün-t'i 七里廟軍隄 and Ch'i-li-miao min-t'i 七里廟民隄; Ho-chia-chou min-t'i 河夾洲民隄 and Ho-chia-chou t'un-t'i 河夾洲屯隄; Huang-mu-ling min-t'i 黃木嶺民隄, Huang-mu-ling chün-t'i 黃木嶺軍隄, and Hunag-mu-ling t'un-t'i 黃木嶺屯隄.<sup>71</sup> Apparently, regardless of what type of land holding was involved, if they were in an area affected by the dikes, their owners were expected to share in the costs of dike building and repair.

Besides the earth fee collected from the people, there were other sources for financing dikes repairs. For the Wan-ch'eng dike, a special fund known as *Hsiao-hsing sheng-hsi-yin* 蕭姓生息銀 (Hsiao's money for producing interest) was used for annual repairs. An investigation by A-kuei indicated that the 1788 flood in Ching-chou resulted from a certain Hsiao family planting reeds in Chiao-chin-chou 簪金洲 (a shoal in the Yangtze River), which caused a sand bar to build up so much that the current was prevented from flowing freely and eventually led to the breaking of dikes. The Ch'ien-lung Emperor, aware of the people's suffering and the Hsiao's illegal occupation of the shore land, ordered that the Hsiao's property be confiscated and sold. The money was to be reserved for relief purposes and for the repairs of dikes in Ching-chou.<sup>72</sup> Although the "T'i-fang chih" does not record the amount of this fund and its usage, information can be gained from the *Wan-ch'eng-t'i chih*.

According to a report of Pi Yüan in 1789, the value of the land held by the Hsiao family was estimated at 80,165 taels. Since few people could buy land after serious damage by the flood, Pi Yüan suggested that the confiscated land continue to be cultivated by the tenants who formally rented lands from the Hsiao family. The rent paid to the government was to be reserved in the provincial treasury for relief purposes and dike repairs. Moreover, the Hsiao family's house, jewels, clothing, and

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<sup>70</sup> Ibid., 19: 1b.

<sup>71</sup> Ibid., 19: 20b-21b.

<sup>72</sup> Ibid., 17: 4a-b; 5b.

miscellaneous articles were estimated and sold.<sup>73</sup> A record of 1798 showed that the clothing and jewels were sold for 12,579.462 taels and the houses were sold for 31,303.0896 taels, although it did not give the exact year for the sale. These amounts were entrusted to well-off pawnshops, which were to produce an interest of 6,319.76 taels per year.<sup>74</sup> The interest was enough for covering the annual repairs prior to 1853. However, by this year the principal was exhausted partly because of corruption and partly because it had been used for purposes other than dike repairs.<sup>75</sup>

Using interest as a source for financing dike repairs was a common practice in Ming and Ch'ing times.<sup>76</sup> In Ching-chou, the confiscated property of the Hsiao family was not the only fund that produced interest for the dike repairs. For example, Yü-t'ai reported in 1842 that in addition to the Hsiao fund, the *shang-chüan t'i-ho sheng-hsi* 商捐隄河生息 (interest from a fund contributed by merchants), and *Sha-yang-t'i-kung sheng-hsi* 沙洋隄工生息 (interest from a fund for the Sha-yang dike works) were appropriated from the provincial treasury for repairing a beach and other constructions at Yüeh-chia-tsui 岳家嘴.<sup>77</sup> Again, in 1844, the interest from the merchants' fund and the *Chiang-han shu-chün yao-kung pei-yung hsi-yin* 江漢疏濬要工備用息銀 (interest from a fund reserved for the dredging of the Yangtze River and the Han River) were used to construct dikes at Li-chia-pu.<sup>78</sup> The reports of Yü-t'ai also said that the funds advanced would be repaid by allotting the costs among the people who had received the benefits of repairs, or by raising contributions.

Before discussing fundraising as a means for financing the dike works, it seems possible to establish that the merchant's fund mentioned above was not contributed by local merchants but by the Liang-Huai 兩淮 salt merchants. Although there are no records which can be used to prove this point directly, an essay by Wang Chih-i 汪志伊, the governor-general of Hu-Kuang, revealed that the Liang-Huai salt merchants contributed 500,000 taels in 1807 for the construction of dikes and dredging of the rivers in Hupei.<sup>79</sup>

As for the other contributions mentioned in the "T'i-fang chih", the contributors were local officials, local gentry, merchants at Sha-shih 沙市, and other local people. Chou Chung-hsüan 周鍾瑄 (prefect, 1730-1733), contributed a large amount of

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<sup>73</sup> *Wan-ch'eng-t'i chih*, 6B: 1b-2a.

<sup>74</sup> *Ibid.*, 6B: 8b-9a.

<sup>75</sup> *Ibid.*, 6B: 19b; 9a-10b.

<sup>76</sup> Lien-sheng Yang, "Public Works," p. 244.

<sup>77</sup> *Ching-chou fu-chih* (1880 ed.), 18: 4b-5a.

<sup>78</sup> *Ibid.*, 18: 5b-6a.

<sup>79</sup> *Wan-ch'eng-t'i chih*, 9: 40a-b. The record said that since there was no *hsia-fei* 匣費 (chest fee) left, that salt merchants contributed an amount of 500,000 taels for usage of river works. As for *hsia-fei*, see Ping-ti Ho, "the Salt Merchant of Yang-chou," *Harvard Journal of Asiatic Studies*, 17 (1954), pp. 142-143 and the note on p. 142.

money to build a dike and therefore the dike was called Chou-kung t'i 周公隄.<sup>80</sup> There were also some cases in which the local officials contributed their salary or supplementary salary (*chiian-feng* 捐俸 or *chiian-lien* 捐廉).<sup>81</sup> As for local gentry, the term used in the “T’i-fang chih” was *sheng-ch’i* 紳耆. The broad interpretation of “local gentry” by Ch’ü T’ung-tsu, that is, “a power group which controlled local affairs by means of informal power,”<sup>82</sup> might be used to refer to this group of people. They contributed to construct stone dikes in 1843 and 1859. As for merchants, 13 merchant guilds in Sha-shih (*Sha-shih shih-san pang* 沙市十三幫) are listed. In the “T’i-fang chih”, they were included with local gentry under the term *shen-shang* 紳商. The *shen-shang* contributed to the construction of stone banks in 1850 and 1873. The amount contributed in 1873 was 22,500 taels. The stone banks were not only for strengthening the dike but also for the convenience of anchoring boats. This was one reason why merchants were called upon by local officials to contribute money.<sup>83</sup> As for other local people, the “T’i-fang chi” mentioned both people living in the city (*shih-hu* 市戶) and people living in the village (*li-jen* 里人).<sup>84</sup> Since honors were conferred upon them by the government, the contributors thus maintained their prestige in society.<sup>85</sup>

In some cases imperial government funds were provided to repair or construct dikes. There were examples of *fa-t’ang* 發帑 (granting government funds) or *ch’ing-t’ang* 請帑 (requesting government funds) for general repairs or for emergency repairs (*wan-hsiu* 挽修) in 1716, 1727, 1728, 1788, 1850, 1869, and 1870.<sup>86</sup> The largest of these grants was the one granted in 1788 amounting to 2,000,000 taels. The short preface of the “T’i-fang chih” section indicated that the funds were from the *nei-t’ang* (inner treasury). However, edicts preserved in the *Wan-ch’eng-t’i chih*, which were omitted in the *Ching-chou fu-chih*, reveal that initially the Ch’ien-lung Emperor ordered the Hu-pu 戶部 (Board of Revenue) to send an amount of 2,000,000 taels to Ching-chou for the repairs of breaches in the Wan-ch’eng dike and for flood relief, but finally only half of the amount was sent by the Hu-pu and the other half was sent from the provincial treasury of Honan. The amount sent by the Honan provincial treasury belonged to the *ti-ting-yin* 地丁銀

<sup>80</sup> *Ching-chou fu-chih* (1880 ed.), 18: 6a. The original text says, “pa-ch’ien-yü-chin 八千餘金 (more than eight thousand taels). *Chin* 金 is a literary unit; see Lien-sheng Yang, “Number and Units in Chinese Economic History,” in *Studies in Chinese Institutional History* (Cambridge, Mass.: Harvard University Press, 1961), p. 77.

<sup>81</sup> *Ching-chou fu-chih* (1880 ed.), 19: 24b-25a, and *Wan-ch’eng-t’i chih*, 6B: 19b-20a.

<sup>82</sup> Ch’ü T’ung-tsu, pp. 169-170.

<sup>83</sup> *Wan-ch’eng-t’i chih*, 4: “shih-kung 石工,” p. 10b-12b.

<sup>84</sup> *Ching-chou fu-chih* (1880 ed.), 18: 12a-b. In *chiian* 56, several cases of contribution by local people can be found.

<sup>85</sup> *Wan-ch’eng-t’i chih*, 6B: 5a-6b.

<sup>86</sup> *Ching-chou fu-chih* (1880 ed.), 18: 3b; 4a; 6b; 19: 4b; 10b; 17b; 22b.

(land-and-labor-service tax) which normally would have been sent to the Board of Revenue.<sup>87</sup> Therefore, the funds provided in 1788 were not from the emperor's purse but from imperial government treasury.<sup>88</sup> The Wan-ch'eng t'i repaired by imperial funds was thenceforth called Ch'in-kung t'i 欽工隄 (imperial dike), and a moon-shaped dike in Chien-li hsien was also known as Ch'in-kung yüeh-t'i 欽工月隄 because it was built with an imperial grant in 1850.<sup>89</sup>

There was also a method of financing known as *hsieh-chu* 協築 (to assist the construction). An inscription written by Chang K'o-ch'ien 張可前 (*chih-shih*, 1652) reveals that there was an agreement between the Ching-chou prefecture and its neighboring prefecture, An-lu 安陸, by which they agreed to assist each other with funds for construction of dikes along the Yangtze River and the Han River. The first agreement was made in 1567. The *shu-huan* 贖緩 (literary term for *tsang-fa-yin* 贓罰銀, silver collected as fines) of the two prefectures were used to construct a dike along the Han River in An-lu prefecture. In 1655 an agreement was made that Mien-yang hsein 沔陽縣 (one district in An-lu) would provide 30 per cent of the necessary cost to Chien-li for repairing a dike that broke year after year. In 1672 an agreement was made that An-lu should give Ching-chou 4,000 taels for a large scale dike work at Shih-t'ou wan 石頭灣. An inhabitant of Chiang-ling, Chu K'uang 朱匡, did not consider 4,000 taels enough and appealed to the Board (*k'ung-pu* 控部). The governor-general of Hu-Kuang and the governor of Hupei then investigated the issue and decided that afterwards the two prefectures should construct their dikes independently, without assisting each other. This decision seemed to be effective, because in 1877 a request for an exchange of funds between Chien-li and Mien-yang was avoided by quoting the precedent.<sup>90</sup>

These examples show that mutual assistance between two localities for dike works was difficult. Therefore the responsibility for dikes affecting two localities tended to be divided. For example, in Chien-li there were several dikes which were designated as "by precedent repaired by Pa-ling" (*hsiang-kuei Pa-ling hsiu-li* 向歸巴陵修理).<sup>91</sup> In Chiang-ling, the Yin-hsiang-ch'eng t'i 陰湘城隄, located between Chiang-ling and Tan-yang 當陽, and a decision was made in 1848 that the earth fee of the three *li* 里 (village unit) of Tan-yang should be collected by Chiang-ling.<sup>92</sup>

The local officials always had to raise money from different sources for major

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<sup>87</sup> *Ching-chou fu-chih* (1880 ed.), chüan 17, short preface; also see *Wang-ch'eng-t'i chih*, "chüan-shou 卷首", p. 7b; 17a, 20a-b.

<sup>88</sup> For a general discussion of the distinction between the emperor's purse and the empire's purse, see Lien-sheng Yang, "Notes on Dr. Swann's Food and Money in Ancient China," in *Studies in Chinese Institutional History*, pp. 89-90.

<sup>89</sup> *Ching-chou fu-chih* (1880 ed.), 18: 6b; 19: 17a.

<sup>90</sup> *Ibid.*, 20: 1b-2a. For biography of Chang K'o-ch'ien, see 47: 25b-26a.

<sup>91</sup> *Ibid.*, 19: 15a.

<sup>92</sup> *Ibid.*, 20: 2a-b.

repair and construction. The report of Yü-t'ai on the repairs of Yüeh-chia-tsui t'i in 1842 and Li-chia-pu t'i in 1844 are good examples. In both cases, in addition to the interest from different funds, money contributed for military supplies and surplus funds from other dike works were also drawn upon.<sup>93</sup> In the late Ch'ing there were two major sources from which a local official could arrange to transfer funds for the dike repairs. As pointed out in the *Wan-ch'eng-t'i chih* after the principal and interest from the sale of the confiscated Hsiao's property were used up in 1853, funds were transferred from the salt tax and the likin in 1858, 1859, and 1873.<sup>94</sup> It seems that this practice became even more important in the Kuang-hsü period, as pointed out in the *Wan-ch'eng-t'i hsü-chih*.<sup>95</sup>

### *Organization for the Upkeep of the Dike*

Generally speaking, responsibility for the upkeep of the dikes was given to the local people under the supervision of the local officials, but from 1789 on a small part of the military force was also assigned to take part in the upkeep.

The people's organization for the upkeep of the dikes was the *t'i-chia fa* 隄甲法 (the system of the dike headman) established in 1567 by Chao Hsien 趙賢, the prefect of Ching-chou. Under this system, a *t'i-lao* 隄老 (elder of the dike) was appointed to be in charge of every thousand *chang* of the dike; a *t'i-chia* 隄甲 (head of the dike) and 10 laborers (*fu* 夫) were appointed to take care of every 500 *chang* of the dike.<sup>96</sup> According to the 1757 edition of the *Ching-chou fu-chih*, there were 66 *t'i-lao* and *t'i-chia* in Chiang-ling, 77 in Shih-shou, Kung-an, and Sung-tzu, and 80 in Chien-li.<sup>97</sup> People living near the dikes had to take turns serving as *t'i-lao* and *t'i-chia*. Their duty was to look after the dikes in summer and autumn and to repair them in spring and winter. Since these people had been living in the area for generations and were familiar with the nature of floods, the system was considered a good one by Hu Tsai-k'o 胡在恪 (native of Chiang-ling, *chih-shih*, 1655).<sup>98</sup>

The system was continued in Ch'ing times with certain modifications. In 1789 a decision was made that the upkeep of the Wan-ch'eng t'i should be under the supervision of the sub-prefect. Four *t'i-chang* 隄長 (head of dikes) and four *yü-chia* 圩甲 (secondary head of dikes) were appointed to take care of every 500 *chang* of the dike. They were appointed annually from among the local people. Moreover, Guard

<sup>93</sup> *Ching-chou fu-chih* (1880 ed.), 18: 4b-5a; 5b-6a.

<sup>94</sup> *Wan-ch'eng-t'i chih*, 6B: 16b; 17a; 17b.

<sup>95</sup> *Wan-ch'eng-t'i hsü-chih* (compiled by Pai Shu-hui 白舒惠, 1894 ed.), 6: 4a-9a.

<sup>96</sup> *Ching-chou fu-chih* (1880 ed.), 18: 3b.

<sup>97</sup> *Ching-chou fu-chih* (1757 ed.), 16: 14a.

<sup>98</sup> *Wan-ch'eng-t'i chih*, 9: 13b-14b.

houses (*k'a-fang* 卡房) were built on top of the dike to add to the efficiency of the upkeep.<sup>99</sup> It seems that the numbers of *t'i-chang* and *yü-chia* sometimes varied. For example, another record notes that for each of the 65 dike works of the Wan-ch'eng t'i there were one *t'i-chang*, five *yü-chia* and 25 laborers. The duty of the dike headman and the secondary headman was to patrol and inspect the condition of the dikes. The duty of the laborers was to pile up earth for emergency use (the pile of earth was known as *t'u-niu* 土牛 [earth ox]), and to plant willows and reeds for protecting the dikes. Certain land called *yü-chia t'ien* 圩甲田 (land for the heads of dikes) was used to provide food and money for the necessary services rendered by people who assumed the duty of the heads and the secondary heads of dikes. Contrasts were also arranged with the laborers. However, after the *yü-chia t'ien* had been sold several times it became hopeless to try to figure out whether they belonged to the government or to private people. From 1844 on, no names were entered in the register for laborers and the expenses of piling up the earth oxen and planting willows were extorted from local people. Although details of the operation of this system and the process of its obsolescence are not clear, the record shows that in 1874 the laborers were eliminated and only the heads of dikes and the secondary heads remained to take care of the dikes.<sup>100</sup> In the early Kuang-hsü period, there were 387 persons assuming these two kinds of services and the upkeep of the Wan-ch'eng t'i. Instruments for taking care of the dikes and the oil for burning at night were provided to them by the official fund. Meals were not provided, but in 1876 a decision was made that each of them should be exempted from paying the fee of 10 *fang* of earth.<sup>101</sup> The people's organization was also used in Sung-tzu in Ch'ing times.<sup>102</sup> But records are lacking for the other districts.

In Chiang-ling another system was practiced by people of the *yüan* settlements for taking care of the *yüan* dikes. There were *yüan-tsung* 院總 (head of the *yüan*), whose position was passed down by heredity within certain clans. The hereditary nature of this system was obviously different from that of system of dike headmen in which people took turns to serve as the dike headman or secondary headman. The *yüan* system also utilized several laborers known as *yüan-fu* 院夫. Because those served as *yüan-tsung* were often corrupt in their management of the dike repairs, the position was abolished after 1788.<sup>103</sup>

In addition to the organizations of the local people, there was a small military force assigned in the upkeep of the official works of the Wan-ch'eng t'i. In 1789, Pi

<sup>99</sup> *Wan-ch'eng-t'i chih*, 5: 1a-b.

<sup>100</sup> *Ibid.*, 5: 1b-2a; 15b-16b; 24b-25a.

<sup>101</sup> *Ibid.*, 5: 24a, 33b-34b.

<sup>102</sup> *Ching-chou fu-chih* (1880 ed.), 19: 22a.

<sup>103</sup> *Ibid.*, 20: 2a.

Yüan suggested that the Ching-chou shui-shih-ying 荊州水師營 (the marine battalion in Ching-chou) should be assigned the responsibility for the upkeep of the dikes. Along the official dike works of the Wan-ch'eng t'i, one guard house was built every two li 里 (1 li = 0.576 km) and two soldiers were deputed to each guard house. At first 55 soldiers were assigned to take care of the dikes; gradually the number increased to more than 90.<sup>104</sup> In 1869 the Ch'ang-chiang shui-shih-ying 長江水師營 (marine battalion of the Yangtze River) was established. Tseng Kuo-fan 曾國藩 (1811-1872) suggested that the Ching-chou marine battalion should be abolished, but Ma Hsin-i 馬新貽 (1821-1870) suggested that one *shou-pei* 守備 (second captain) and 92 petty officers and soldiers be retained for the upkeep of the dikes. In 1874 the governor-general of Hu-kuang, Li Han-chang 李翰章 (1821-1899, elder brother of Li Hung-chang 李鴻章), suggest that the Ching-chou marine battalion be abolished and a division for the upkeep of the dike (*t'i-fang-ying* 隄防營) should be established. This suggestion was approved by the throne in 1876.<sup>105</sup>

The organization of the division was as follows: One *ch'ien-tsung* 千總 (lieutenant) was placed in charge of the upkeep of the whole dike. He had seven personal soldiers (*ch'ing-ping* 親兵) under him. Under the lieutenant was a *wai-wei* 外委 (corporal) who was in charge of the upkeep of 18 dike works and who had four personal soldiers and 36 regular soldier under him. Beside the corporal, there was an *e-wai wai-wei* 額外外委 (lance corporal) who was in charge of the upkeep of nine dike works and three stone dikes and who had four personal soldiers and 37 regular soldiers under him.<sup>106</sup> From the point of view of organization, the division adopted the military pattern. However, according to the record of the prefectural yamen (*fu-ts'e* 府冊) quoted by the *Ching-chou fu-chih*, the 92 soldiers were selected from the local laborers.<sup>107</sup> The compilers of the "Wu-pei chih" 武備志 (Treatise on military defense) section were right in saying that after the division replaced the Ching-chou marine battalion, it mainly concentrated on the upkeep of the dikes and no longer was involved in military affairs.<sup>108</sup>

The soldiers of the division garrisoned the guard houses during the period of summer and the autumn floods (*hsia-ch'iu erh-hsün* 夏秋二汛). When a dike was in danger of breaking, they had to make emergency repairs. Whenever ant-hills (*i-hsüeh* 蟻穴), badger tunnels (*huan-tung* 獾洞), and eroded places caused by rain were discovered they had to be taken care of immediately. After the flood periods were over, each soldier had to pile up 10 earth oxen and plant willows and reeds at places 10

<sup>104</sup> *Ching-chou fu-chih* (1880 ed.), 18: 8a-b; *Wan-ch'eng-t'i chih*, 3: 12a.

<sup>105</sup> *Ching-chou fu-chih* (1880 ed.), 18: 9a-b.

<sup>106</sup> *Ibid.*, 25: 9b.

<sup>107</sup> *Ibid.*, 25: 10a.

<sup>108</sup> *Ibid.*, 25: 9a.

*chang* beyond the dikes.<sup>109</sup>

When the soldiers of the Ching-chou marine battalion were first deputed to guard the dikes, each soldier was provided five *ch'ien* 錢 (mace) of silver per month to pay for lightening materials and meals (*teng-huo fan-shih yin* 燈火飯食銀). The money was paid from the Hsiao fund. Later, since the price of food increased, the stipend was also increased. All together about 260 taels of silver per year were required to pay the soldiers' wages. When there was an intercalary month (*yü-jun* 遇閏), the cost was about 320 taels per year.<sup>110</sup> From 1858 on, since the Hsiao fund was exhausted the cost was paid from the earth fee. After it was formed the salary of the division was 1,320 taels per year in addition to 333 *shih* 石 (picul) of rice.<sup>111</sup>

### *Technique, Material, and Labor*

The "T'i-fang chih" provides little information about the techniques, material and labor used in the construction of dikes. Yet some terms have been mentioned which can be discussed at least briefly.

The common material for building dikes in Ching-chou was earth. A technique for tamping the earth hard was introduced to Ching-chou in the early Ch'ing. This method was the *hang-o fa* 夯礮法, that is, the method of tamping earth with rocks.<sup>112</sup> A memorial of Pi Yüan in 1789 revealed that this method had not been used previously in Ching-chou. Since the native laborers of Ching-chou did not know how to manipulate the rocks, skilled laborers (*o-fu* 礮夫) were hired from Yüeh-chou 岳州, Hunan. Moreover, since the wages offered to an ordinary laborer were not enough for a skilled laborer, the budget was necessarily increased.<sup>113</sup> According to the *Wan-ch'eng-t'i chih*, the wage of an *o-fu* was not only higher than an ordinary laborer but wine and meats were given to those who tamped the earth particularly hard. Therefore, conflicts occurred between the *o-fu* and the laborers. Dealing with native laborers and skilled laborers from other places also presented a problem for the officials in charge of the dike works.<sup>114</sup>

Another technique used in Ching-chou for the first time in 1884 was the

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<sup>109</sup> *Ching-chou fu-chih* (1880 ed.), 25:10a.

<sup>110</sup> *Wan-ch'eng-t'i chih*, 5: "fang-hu 防護", 33a.

<sup>111</sup> *Ching-chou fu-chih* (1880 ed.), 25: 10a.

<sup>112</sup> In E-tu Zen Sun's *Ch'ing Administrative Terms*, p. 355, *o* 礮 is translated as "stone roller". Since the *o* was not used to roll earth but to pound it, as is pointed out by Mrs. Sun, I think the term "stone roller" seems a little misleading. The *Wan-ch'eng-t'i chih* mentioned a common saying – "The one who is skilled in pounding with the rock (*o*) raises it high and drops it evenly" (*Ch'i-te-kao lo-te-p'ing pien-shih hui-ta-o-jen* 起得高落得平便是會打礮人) – which shows very clearly the way of operating the rock (4: "t'u-kung 土工", 14b-15a).

<sup>113</sup> *Ching-chou fu-chih* (1880 ed.), 17: 8a; *Wan-ch'eng-t'i chih*, 6B: 1a-b.

<sup>114</sup> *Wan-ch'eng-t'i chih*, 4: "t'u-kung", 14a-b.

*hsia-sao-fa* 下埽法, that is, method of lower embankment.<sup>115</sup> As pointed out by Professor L. S. Yang, *sao* was an innovation of the Sung dynasty,<sup>116</sup> but according to Yü-t'ai, the native laborers in Ching-chou were not familiar with the technique. Therefore he entrusted the hsien magistrate of Chien-li, Ch'en Chin 陳進 (native of Shun-t'ien 順天, Hopei), and a sub-ninth rank official on probation (*shih-yung ts'ung-chiu-p'ing* 試用從九品), Wang Chao-chen 王兆鎮, who were familiar with the method, to undertake the work. In 1884, the method was used to block up a breach at Shang-yü-pu-t'ou 上漁埠頭. Each bundle (*chan* 占) was 3.5 *chang* wide and 3 to 4 *chang* long. Seven bundles were fixed into the breach and reached a height 4 *ch'ih* above the surface of the water.<sup>117</sup>

The stone dikes, which were used to divert the current (*t'iao-liu* 挑溜) and to hold back the sandbar (*kung-t'an* 攻灘), were built in 1788 for the first time.<sup>118</sup> In this year, imperial funds were provided to construct two stone dikes and other stone works in the Wan-ch'eng t'i. But since this was the first time that large amounts of stone were used, there was a problem of getting material. A statement of the provincial treasurer of Hupei, Ch'en Huai 陳淮, revealed that there were stone resources at Chih-chiang and I-tu 宜都 but a shortage of stone artisans. Therefore he ordered that about 200 stone artisans be hired and sent to dig out the necessary uncrushed lumps of stone.<sup>119</sup> In 1873, when a stone bank was built in Sha-shih 沙市, the necessary lumps of stone were also bought from the vicinity of I-tu.<sup>120</sup> In addition to stone of a particular size, large amounts of smaller stone fragments were also needed to build up supporting slopes on the inner side of the dike (*sui-shih t'an-p'o* 碎石坦坡).<sup>121</sup> More and more stone works were built. For example, along the Hsiang-ho t'i 襄河隄 in Chiang-ling six stone banks were built in the Tao-kuang period (1821-1850).<sup>122</sup> At that time corruption of boatmen who had been hired to transport the stone had already become a problem.<sup>123</sup> In the beginning of the Kuang-hsü period (1875-1908), it was said that the stone fragments were almost unavailable in the upper valley and it became necessary for people to go into the mountain to get the stone. Therefore the boatmen were not as enthusiastic as before.

<sup>115</sup> *Ching-chou fu-chih* (1880 ed.), 18: 5a; also see E-tu Zen Sun, p. 330.

<sup>116</sup> Lien-sheng Yang, "Public Works," pp. 221-222.

<sup>117</sup> *Ching-chou fu-chih* (1880 ed.), 18: 5b-6a.

<sup>118</sup> *Ibid.*, 17: 6b-7a.

<sup>119</sup> *Wan-ch'eng-t'i chih*, 4: "shih-kung", 5a-b.

<sup>120</sup> *Ibid.*, 4: "shih-kung", 10b-12b.

<sup>121</sup> For example, *Ching-chou fu-chih* (1880 ed.), 18: 4b.

<sup>122</sup> *Ibid.*, 20: 1b.

<sup>123</sup> *Wan-ch'eng-t'i chih*, 4: "shih-kung", 8b-9a. In an announcement of Prefect Wang Jo-min 王若閔 "Wang-t'ai-shou chin-shih-ch'uan-wu-pi shih 王太守禁石船舞弊示 (An announcement of Prefect Wang for prohibiting corruption of the stone-transportation boats)," the corruption of boatmen was described very clearly. Wang served as the prefect for four terms (1829, 1831, 1835, 1838). See *Ching-chou fu-chih* (1880 ed.), 33: 4b, 6b-7a.

The difficulty of getting stone led to the employment of brick instead.

The first brick dike work was built at T'o-mao-pu in 1874. In 1877, brick was used with stone lumps and fragments to build a dike.<sup>124</sup> The *Wan-ch'eng-t'i chih* does not record the source of the brick but does note that the price of brick was less than that of stone.<sup>125</sup> In the Kuang-hsü period, brick was used as much as stone, according to the *Wan-ch'eng-t'i hsü-chih*.<sup>126</sup>

The technique of using wood to obstruct the violence of waves was also employed in dike construction in Ching-chou. For example, in 1708 some *mu-cheng* 木城 (wooden walls) were constructed at Ta-ho-wan t'i 大河灣隄 and Ho-chia-t'an 何家潭 in Kung-an. Although the "T'i-fang chih" did not provide information on the structure of the wooden walls, it might have been similar to the *huang-chu* 滉柱 (screen pillars).<sup>127</sup>

To sum up, in Ching-chou dikes were located along the Yangtze River and its tributaries. In addition, stone dikes were built to increase the strength of these main dikes, and moon-shaped dikes were built to protect them. There were also smaller dikes built around farming land, as well as sluices and dams for drainage and irrigation. These dikes of different sizes and functions were one of the major features of the landscape of Ching-chou and they were closely related to the economic life of the people who lived there. The strength of dikes in the face of flood waters determined the fate of lives and property. As one category of public works, dike construction in Ching-chou affected different sectors of the society. The local people had to pay earth fees, which were a major source for financing dike works. They also had to take turns in guarding against possible floods. However, except in emergencies which called for volunteer laborers, they were hired to take part in dike work. Laborers were even hired from outside of Ching-chou.

Merchants were called upon to contribute large amount of money for those dike constructions that would prove benefited for their commercial activities. By contributing money they also could maintain a certain degree of influence with local officials.

The local gentry were entrusted by the local officials to manage the earth fee. They also made contributions that served to maintain their prestige. As many general studies on the local gentry indicate, their power in Ching-chou was not unique.

Normally the yamen clerks were prohibited from interfering with the collection of the earth fees. However, at times they were still considered better than the local

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<sup>124</sup> *Wan-ch'eng-t'i chih*, 4: "shih-kung", 9a-b.

<sup>125</sup> *Ibid.*, 4: "shih-kung", 22a-b.

<sup>126</sup> *Wan-ch'eng-t'i hsü-chih*, "tsung-hsü"總序 (preface by Pai Shu-hui), 1b.

<sup>127</sup> *Ching-chou fu-chih* (1880 ed.), 19: 8a; Lien-sheng Yang, "Public Works", p. 221.

gentry, as the *Wan-ch'eng-t'i chih* pointed out.<sup>128</sup> The case of collecting earth fees provides us with an example for studying relations among the local officials, the local gentry, and yamen clerks.

The dikes were one of the major public works for which local officials had administrative responsibility. The prefect of Ching-chou was responsible for the Wan-ch'eng dike in particular, while each hsien magistrate was responsible for the dikes in his area. Even the *yüan* dikes constructed by local people were not exactly under their own management, because the government held rights over any developed land. Therefore, to build *yüan* dikes without government permission was considered illegal. The subordinate local officials had direct responsibility for supervising the dikes. A small number of soldiers were also assigned to take charge of the upkeep of the Wan-ch'eng dike.

Although the high ranking local officials, the governor of Hupei and the governor-general of Hu-Kuang, were not directly responsible for the dike works in Ching-chou, in cases of major repair and construction they were commanded to take charge of the work, as shown by the examples of Pi Yüan in 1788 and Yü-t'ai in 1842 and 1844.

The central government of the Ch'ing paid more attention to the dikes in Ching-chou than had previous dynasties. Imperial funds were provided to construct and repair the dikes when major works were involved. By applying the principle of the 10-year guarantee for the strength of the dike, the central government also carried out closer supervision over the dike works in Ching-chou than it had previously.

## Appendix

### *Editions of the Ching-chou fu-chih*

According to Chu Shih-chia 朱士嘉, in his *Chung-kuo ti-fang-chih tsung-lu* 中國地方志綜錄 (A comprehensive catalog of the Chinese local gazetteer; revised edition, Shanghai 1958), there are four existing or partially existing editions of the *Ching-chou fu-chih*, and one *Ching-chou fu-chih-kao* 荊州府志稿 (Draft of the Gazetteer of Ching-chou Prefecture), namely:

Ming, Chia-ching 11 (1532), 12 chüan, compiled by Chu Ch'ung-huai 朱寵懷;

Ch'ing, K'ang-hsi 24 (1685), 40 chüan, compiled by Hu Tsai-k'o 胡在恪;

Ch'ing, Ch'ien-lung 22 (1757), 1+58 chüan, compiled by Shih T'ing-shu 施廷樞;

Ch'ing, Kuang-hsü 6 (1880), 1+80 chüan, compiled by Ku Chia-heng 顧嘉蘅 and

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<sup>128</sup> *Wan-ch'eng-t'i chih*, 6A: 2a; 11b-12b.

Li t'ing-shih 李廷鉞; and the *Ching-chou fu-chih-kao*, compiled by Yang Shou-ching 楊守敬 in the Kuang-hsü period (1875-1908).<sup>129</sup>

However, information contained in the general rules of the 1757 and 1880 editions of the *Ching-chou fu-chih* which are available in the Harvard-Yenching Library reveals that the Ming editions were unavailable when the Ch'ien-lung edition was compiled. On the other hand, the preface of the K'ang-hsi edition<sup>130</sup> by Hu Tsai-k'o reveals that Hu still could refer to parts of a Ming Wan-li edition (1594 ed.).

Therefore in addition to the draft, there were at least five editions of *Ching-chou fu-chih* compiled during the Ming and Ch'ing dynasties. The 1880 edition is the one that this paper is based on.

### *Compilers of the 1880 Edition*

Like most of the local gazetteers, the *Ching-chou fu-chih* also has a long list of compilers. Among them, Ku Chia-heng and Li T'ing-shih were the chief compilers (*tsung-ts'uan* 總纂). Ku was a *chin-shih* from Tung-hu 東湖, Hupei, and had served as a compiler at the Hanlin 翰林 Academy. Li was a *chin-shih* from Chihli 直隸 and had been a district magistrate in Hsien-ning 咸寧, Hupei. Information about these two compilers are lacking in biographical works of Ch'ing times.

The compiler-in-chief (*chu-hsiu* 主修) of this gazetteer was Ni Wen-wei 倪文蔚 (d. 1890). According to his biography in the *Ch'ing-shih lieh-chuan* 清史列傳 (Biographies of the Ch'ing dynasty history)<sup>131</sup>, Ni was a native of Wang-chiang 望江, Anhwei. He became a *chin-shih* in 1852. Beginning in 1872, he served as the prefect of Ching-chou for eight years. During his term, he had the responsibility for building and repairing Wan-ch'eng t'i, and had the *Wan-ch'eng-t'i chih* (1876 edition) compiled to serve as a guide for similar constructions in the future. As an initiator, he played an important role in the compilation of the 1880 edition of the *Ching-chou fu-chih*.

### *Major Content of the 1880 Edition*

The 1880 edition of *Ching-chou fu-chih* contains 80 chüan in addition to an introductory chapter containing one preface, general rules, a list of compilers, maps and table of content.

The contents are divided into 13 sections and sub-divided into 63 items. In the 80 chüan, the distribution is as follows:

Chüan 1-7 “Ti-li chih” 地理志 (Treatise on geography)

<sup>129</sup> Chu Shih-chia 朱士嘉, *Chung-kuo ti-fang-chih tsung-lu* 中國地方志綜錄 (revised edition, Shanghai, 1958), p. 203.

<sup>130</sup> *Ching-chou fu-chih* (1757 ed.), 53: 39a-40b. For a biography of Hu Tsai-k'o, see 39: 25a-b.

<sup>131</sup> *Ch'ing-shih lieh-chuan* (Taipei: Chung-hua shu-chü, 1962), 59:34b-38a.

- 8-12 “Chien-chih chih” 建置志 (Treatise on public building)
- 13-16 “Ching-cheng chih” 經政志 (Treatise on financial administration)
- 17-20 “T’i-fang chih” 隄防志 (Treatise on water conservancy)
- 21 “Hsüeh-hsiao chih” 學校志 (Treatise on school)
- 22-26 “Wu-pei chih” 武備志 (Treatise on military defense)
- 27-28 “Tz’u-ssu chih” 祠祀志 (Treatise on sacrifice and temples)
- 29-39 “Chih-kuan chih” 職官志 (Treatise on officials)
- 40-46 “Hsüan-chü chih” 選舉志 (Treatise on examinations)
- 47-73 “Jen-wu chih” 人物志 (Treatise on people of distinction)
- 74 “I-wen chih” 藝文志 (Treatise on literature)
- 75-76 “Hsiang-i chih” 祥異志 (Treatise on omens)
- 77-80 “Tsa-chi chih” 雜記志 (Treatise on miscellaneous records)

According to the preface by P’eng Tsu-hsien 彭祖賢 (native of Ch’ang-chou 長洲, Kiangsu), then governor of Hupei, this gazetteer was valuable in various ways. First, the sources used were all listed. Secondly, errors in earlier editions had been corrected. Thirdly, a strict standard was used in compiling the works of eminent local people. The methods to be followed and the major points of emphasis were pointed out in the 27 items of general rules and the short prefaces at the beginning of each section.

Although the 1757 edition was used as the basic source, many other sources were also used. In dealing with the system of the Manchu banner garrison in Ching-chou, the compilers expanded the material in the 1757 edition by using material from the “Chu-fang chih” 駐防志 (Treatise on the Manchu banner garrisons). Thus, not only was the garrison system described but also the increase of the Manchu banner-men and their custom. These records were placed in related sections. Moreover, since water conservancy played an important role in Ching-chou, the compilers added a section dealing specifically with this aspect. The additional sources used for this section will be discussed more fully below.

Other additions were also made from contemporary records and sources. During the late Ch’ing a new system of tax called likin (*li-chin* 釐金) was established and consequently in this edition records concerning the likin were included. There were also short passages added concerning tax on opium (*yang-yao-chü* 洋藥局) and trade with foreigners along the Yangtze River (chüan 10 and 15). In dealing with land tax, not only were records of the 1757 edition copied, but the compilers also added the tax records of 1876 as found in the *Kuang-hsü erh-nien o-sheng ting-ts’ao-chih-chang* 光緒二年鄂省丁漕指掌 (A guide to the land tax of Hupei province in 1876; chüan 14). By comparing the records of these two different dates, differences appear both in amounts and in items categorized.

Under the title of ferries and bridges (*chin-liang* 津樑), there were names of bridges and information such as the location, the time of building, the people who provides the sources, and the phenomenon of replacing wooden bridges with stone bridges during the early Ch'ing.<sup>132</sup> Records in other district gazetteers were used to add to the list of the 1757 edition of the *Ching-chou fu-chih*.

One feature of the 1880 edition of the *Ching-chou fu-chih* can be seen in the method of handling the material in the “I-wen chih” section. The “I-wen chih” is composed of only one chüan and is a bibliography of books written or compiled by local people. Moreover, in this edition most of the essays, poems, inscriptions, and other writings are placed in sections most closely related to their subject content instead of keeping them in the “I-wen chih”. This seems to be a good method for compiling because the reader can get all information related to his subject without having to thread his way through the “I-wen chih”.

Finally, I would like to point out that it is impossible to determine the value of each section only on the basis of the amount of space devoted to it. For instance, there are 12 chüan of *lieh-nü* 列女 (women of rank) among the 27 chüan of the “Jen-wu chih”. These 12 chüan make up six volumes or almost one-fifth of the 32 volumes of the whole gazetteer. It is a common practice to devote certain space in the local gazetteer to the *lieh-nü*, especially to those women who had honors conferred on them by the emperor. However, other than short biographies this section is only a list of names. Needless to say such lists have limited usefulness.

On the other hand, by collecting short passages scattered throughout the gazetteer some very revealing information may be gleaned. For example, by combining short passages on the commerce of Sha-shih 沙市 and other markets (chüan 4) with certain passages on fishing under the title of customs (chüan 5) with material related to products as mentioned in chüan 6, a picture of certain aspects of the economic life of the area can be gained.

My decision to concentrate on the “T'i-fang chih” section of the 1880 edition of the *Ching-chou fu-chih* is due largely to the information revealed in this section concerning dikes. The *Wan-ch'eng-t'i chih* was used as a basic source, but sources from the 1757 edition of the *Ching-chou fu-chih* and local gazetteers of related districts – Chiang-ling 江陵, Shih-sho 石首, Kung-an 公安, Chien-li 監利, Sung-tzu 松滋, and Chih-chiang 枝江 – were also use.

In comparison with the sources mentioned above (the *Wan-ch'eng-t'i chih* and the gazetteers of the six districts compiled during the T'ung-chih and Kuang-hsü period are available in the Harvard-Yenching Library), it is not surprising to find out that some detailed information is not provided in this “T'i-fang chih” section. For

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<sup>132</sup> This phenomenon has been mentioned in Lien-sheng Yang, “Public Works”, p. 220.

example, for studying a particular topic like the Wan-ch'eng dike system, a chapter in this section is not as detailed as is a corresponding section in the *Chiang-ling hsien-shih* (1876 ed.), not to mention the *Wan-ch'eng-ti chih*. However, since information of several districts is included in the "T'i-fang chih" section, it provides a broader picture and some common features of the dike works within an area as large as a prefecture.

Finally, it is necessary to state that since this paper is a study on the "T'i-fang chih" section of the *Ching-chou fu-chih*, this section was the primary source of information, with supplementary sources drawn upon only when more details were needed.