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In the time of --. King Yang of Wei (魏襄王), Shih-chi? (史記) : Shih-chi

Kim (in the Shih-chi (Records of the Grand Historian) said to the king: The way the Wei family carried out the land system was to (grant) 100 mou of land (to each farmer). (Note: The law for the taxation of land -fu-t'ien (賦田), was ~~taxed~~ based on one man's having 100 mou)(END NOTE). Only ~~x~~ in the territory of (^{Yeh} 鄴) was 200 mou of land granted, and this was because the land there was bad. Because the (^{Chang} 漳) river was in the vicinity, it could be used (to irrigate the land). Therefore, (Shih)-chi (^起 起) was made the magistrate of Yeh (^鄴 鄴 : north Honan) and he subsequently drew in the water of the Chang River (^漳 漳 : trib. of the River Wei in NE Honan and S. Chihli) to irrigate the fields of Yeh and make them rich. Within the (Yello) river in Wei, the people ~~sung~~ sang his praises, saying: Yeh has a worthy magistrate. Shih-kung (^{史公} 史公) ~~x~~ opened the waters of the Chang river and irrigate the vicinity of Yeh, and in the end the old dried up and salty (^{澆鹵} 澆鹵) fields produced rice and millet.

irrigation

Kim: () --In the state of Ch'in, a man named Cheng Kuo (^{鄭國} 鄭國) cut a channel (^鑿 鑿) for the Ching river from the Chung-shan (^{中山} 中山) mountains west to (^{滎口} 滎口) making a waterway (^渠 渠). Also from the Pei-shan (North Mountains) east, the waters flowed into the Lo (^洛 洛) river through a ~~xxxxxxx~~ ch'ü waterway that was over 300 li long. After the waterway was completed it was used to irrigate the fields. The waters of (^{He dammed} 填閘) river ^{and} irrigated ~~xxxxxxx~~ over 40,000 ch'ing of salty and dried up fields, so that they were able to harvest from every mou 1 chung (^鍾 鍾) : Kim says this was an ancient unit of measure equivalent to 6 kuo 4 tliou or in Han times equal to 1 picul or shih). Thus the area within the passes because fertile and there were no crop disaster years. Because Ch'in was wealthy and powerful it was abso to absorb the feudal lords, and this man was named Cheng Kuo-ch'ü (^{鄭國渠} 鄭國渠 : Cheng Kuo, the irrigator)

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--Li Ping (^{李冰} 李冰) was made magistrate of Shu (shu-shou (^{蜀守} 蜀守)). He dammed (^壅 壅) the waters of the river and made a pool (reservoir (^壩 壩)).

Water conservancy -2- (56) P'an'gye surok chönje hurok, kosöl, sang
 He cut a channel (ch'üan 穿) for two rivers through the middle of
 Ch'eng-tu (成都), dividing it in two, and after passing through
 the waters flowed into the lower chün (districts) in order to allow boats
 to pass through. And accordingly it irrigated the lands of the districts.*
 Thus the fields of Shu became fertile for a thousand li, and people called
 the area the continental (land) sea. (lü-hai 陸海).

--Wen-ti of the Han made Wen Weng (文翁) magistrate of Shu (Shu-chün t'ai-shou
 蜀郡太守). He channelged a * waterway at (煎波口), irrigated
 the fields and ~~made~~ made 1700 ch'ing of land productive. And the
 people harvested the abundance from it.

--In the time of Wu-ti, the Ta-ssu-neng, Cheng Tang-shih (鄭堂時)
 spoke of bringing in the Wei (渭) river and digging a water way. It
 would start ~~in~~ in Ch'ang-an, went along the base of the Nan-shan (Southern Mt.)
 to the Yellow River for over 300 li and ~~made~~ make it easy to transport grain from the Kuan-tung area.
 In addition it would also be possible to have irrigation ditches water ~~in~~
~~over~~ over 10,000 ch'ing of the people's fields. The emperor sent out
 20-30,000 workers to dig the channel, and in two years it was finished,
 and the people considered it was convenient (good for them). At the time
 the people in charge of affairs competed with one another to talk about
 (the advantages) of water conservancy (shui-ri 水利), and in the areas of

(朔方, 西河, 河西, 酒泉) they all drew in the rivers up to
 the (川谷) region in order to irrigate the fields. And in the areas
 of (輔渠) and (壘軌) in the Kuan-chung region, they drew in the waters of *
 the rivers. In the (汝南) and (九江) areas the brought in the waters
 of the Huai river. In the Tung-hai region they brought in the waters of the
 (鉅定澤). And beneath T'ai-shan they drew in the waters of the Wen river
 (汶). In all cases they bored water channels in order to irrigate the
 fields, in each case over 10,000 ch'ing of land was irrigated. In addition
 there were small waterways which pierced through the mountains
 making waterways (transportation routes)--the building of these was so great
 that it cannot be described in words.

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. Then the Chung-ta-fu of Chao (趙大夫), Pai Kung (白公) submitted another memorial for cutting out a waterway (channel) and drawing in the Ching river. The began at the tail of (谷口), and it went to the Lo-yang (潞陽), and poured into the Wei (渭) river for a distance of 200 li. It irrigated ~~xxx~~ over 4,500 ch'ing of land, and accordingly was called the Pai canal (pai-ch'ü 白渠). The people got abundant crops from it and sang its praises: "Where is the land (fields). Its in chi-yang? (池陽) and (谷口). Cheng Kuo (鄭國) (lived) in former times, and Pai-ch'ü came afterward. When he picked up his spade, it was like clouds (forming); and when he cleared a canal (waterway), it was like rain (falling). One rock (island?) in the Ching river and several t'ou of mud watered the fields and fertilized them and caused our crops to grow. We clothed and fed the ~~xxx~~ millions in the capital." This speaks of the fertilize brought about by these two waterways.

--. In the time of Yüan-ti (元帝) Chao Shin-ch'en (召信臣) was appointed magistrate of Nan-yang (南陽太守). 60 li south of Yang-hsien (穰縣) he built a reservoir called (鉅鹿陂) and piled up rocks to make a breakwater, and made 6 stone gates to regulate the flow of the water. It irrigated a broad area, and every year (the land irrigated) increased until it reached 30,000 ch'ing of land. The people obtained profit from it. Then in the Later Han dynasty, Tu Shih (杜詩) was appointed magistrate and he repaired the work. People of the time sang praises of it, saying: "Before there was Father Chao, and Later there was Mother Tu."

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--. In the Later Han dynasty in the reign of Chang-ti (章帝), Wang Ching (王景) was the Lu-chiang T'ai-shou (廬江太守). In a place called An-feng-hsien (安豐縣) there was a reservoir ~~xxxx~~ called (芍陂) that was built by Sun Shu-fang? (孫叔敖) back in the days of the state of Ch'u (楚). Prior to this time the land was ruined and abandoned, and emperor Chang rebuilt it, and the land became fertile and productive again. (It was 100 li long and irrigated 10,000 ch'ing)

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--In the time of Hsün-ti(順帝), Ma Chen(馬臻) was the Hui-kuei? t'ai-shou(會稽太守), and he first built the Ching reservoir (鏡湖) and repaired the ditch(塘) that was 310 li in circumference and irrigated over 9,000 ch'ing of fields. The people reaped the profits from it.(benefited greatly from it)

--During the time of the ~~Ts'ao~~ Ts'ao Wei dynasty(曹魏), Ssu-ma I(司馬懿) tunneled out an area and made the kuo-ch'ü(國渠) in the area within the passes. He also built the (臨晉陂), which irrigated several thousand ch'ing of land and ~~benefited the people with~~ produced full crops. The people were happy. In cheng-shih 3rd year (242 AD) Ssu-ma I was made the Ta'i-pu?(太傅) who assisted the emperor in the conduct of government and he also requested that a broad canal be tunneled out to draw the waters of the Yellow river into (汴) to irrigate the southeast. And he repaired the various dikes which (irrigated) large areas of land in the Huai-pei area(淮北). After that he also ~~built~~ expanded the canal in the Huai-yang(淮陽) to 2 100 foot waterways and repaired other ponds and dikes, irrigating 10,000 ch'ing, so that eventually in the Huai-pei areas the granaries were lined up in sight of each other.

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(Note: In the Wei dynasty, Cheng Yün(鄭渾) was appointed the (沛郡太守). The land in the area was low marshland and the area was subject to floods and the people were starving and poor. He ~~built~~ wanted to build dikes in 2 hsien and opened up land to cultivation of rice, but the people in the area all didn't like this, but he felt it would produce long-term results, so he personally led the people (into the fields) to work (carry out the construction), and the work was finished in one winter. and the crops were greater than in ordinary years. The land under cultivation increased and the tax revenues doubled. And on the basis of this success a stone stele was erected commemorating the work, and the reservoir was called the Cheng p'p(鄭陂)

Also Hsü ? (徐邈) was appointed to (涿州). There wasn't much rain in the area and the people were poor. He built reservoirs in 3 areas

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and by this means he harvested the grain of the Barbarian prisoners of war?

Also he expanded the irrigated fields and mobilized poor people for cultivation so that every family had more than enough to eat and the granaries were filled to overflowing. Also with the surplus from the grain reserved for military expenses he traded for gold, silk, horses and oxen and applied it to the expenditures of the Middle & Kingdom. Thus the tribute (tax) revenues and the trade in merchandise in the Western Region was all due to the accomplishments of Hsü Miao? (徐邈) .'

--/ In the Eastern Chin dynasty at the time when Chang (張闓) was the Chin-ling nei-shih (晉陵內史), the four hsien under his jurisdiction were all wasteland because of drought. He then established two reservoirs (曲阿塘)(新豐塘) which irrigated over 800 ch'ing of land and every year the crop was abundant. (葛洪) praised him and subsequently appointed him to be Ta-ssu-neng. (Agr. minister)

--In the Sung dynasty, during the reign of Hsiao-tsung (1163-1190), there was a great famine in eastern Chekiang province. Chu Hsi was appointed ti-chün (提舉) and he requested that the starving people be recruited to repair the ~~watex~~ irrigation system. The court decided it was too difficult to do. He made a second request, saying: Because of several years of drought the state has issued grain from the reserve granaries in order to provide relief to the people. If in addition to the regular quotas (of tax?) an additional amount was collected in order to provide for the expenses of mobilizing people to do the construction work on irrigation facilities, then we would be able to solve both the problems of providing relief from the drought and building the irrigation facilities at the same time killing two birds with one stone. What I have ~~sp~~ personally seen wherever I go the fields are gloomy and desolate. Only where there are dikes and reservoirs do the rice plants flourish and bear fruit no different from a bumper crop year. From this I therefore know even more that the irrigation facilities must be repaired. If ~~at~~ we order every village and pao (mutual

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surveillance unit) each to have their own dikes and ponds, then the people will never ~~leave~~ leave their homes and fear ~~of~~ starving to death, and the state will always never be short of ^{of} (finances) and will be able to cut down on the costs grants of loans and relief.

--. At the end of the kan-dao period in the reign of Hsiao-tsung (1165-1174)

the officials discussed the successive years of drought in the Kiangsi area and the fact that they could not construct irrigation facilities in advance as a means of preventing drought. As a result the emperor handed down an edict which said: I am concerned about the crop disasters caused by drought and flood. ~~This is a very serious matter.~~ At the great times of the sage emperors Yao (堯 :T'ang Yao 唐堯) and Tang T'ang (湯 :Yin T'ang 殷湯) they couldn't avoid natural disasters, but the reason why the people never

reported that they were in suffering was because (the sage emperors) prepared districts of the in advance for it. At the present time in te/I-chang (豫章) area

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it ~~is~~ is only in the areas where the boundaries of the fields are close to water that the rice plants grow and bear fruit. But on the high grounds (which is not close to water), if the rain doesn't happen to fall at the right time, the rice plants dry up, and the reason for this is that the irrigation facilities are not in repair and we have lost what is needed to prepare against ~~drought~~ drought. In the T'ang dynasty, Wei Tan (韋丹) was made the Kuan-ch'a-shih (Kwanch'alsa)(Governor) of Kiangsi and he built dikes and ponds in 598 places and irrigated 12,000 ch'ing of land ~~xxxxxxx~~.

~~benefits were as great as this.~~ This was one way to do it, but ~~it~~ the benefits were as great as this. How much more so in the empire which is so great (interritory). Agriculture is the root (basis) of life, and the use of the ~~the~~ flowing water from streams for irrigation is what causes the 5 grains to grow. At the present time there are basically many famous mountain streams in the provinces (circuits), but the people do not know how to use the water (for irrigation). Is it not the job of the governors and magistrates (kamsa, suryöng--used for Chinese?) to open up waterways and dikes? On my behalf they should act in accordance with the upland hills and

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and lowland marshes, to encourage agriculture and sericulture, and exhaust the productive potential of the land (by using irrigation), and on the flat places draw in the water ~~without losing time (for cultivating the fields)~~ without losing time (for cultivating the fields) ~~to prevent the possibility of drought~~. So that even ~~if~~ if there should be drought, those ~~people~~ people who work on the fields would not have to sit with folded hands and suffer disaster. This is also a principle for both Heaven and man being in mutual cause and effect relationship (by which both the forces of nature and man's affairs are in a mutual causal relationship) I in the future will investigate whether (the officials) are diligent or lazy and either reward or punish them.

(The above section deals with water conservancy)