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INSPECTION REPORTS

	DATE	SUBJECT	ISSUING HEADQUARTERS & INDORSEMENTS
1.	27 Jul 1948	Inspection Report on charcoal & fire-wood and pine bark beetle damage	SCAP

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A-11-T

GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
Natural Resources Section

NR 532 (27 Jul 48)F6

HGS/HBD/HRM/FJS/bc
27 July 1948

MEMORANDUM FOR: Record

SUBJECT: Visit to Osaka, Tottori, Kyoto, and Shiga Prefectures to inspect industrial uses of charcoal and firewood and to confer with military government and local prefectural officials regarding reforestation and pine bark beetle damage.

1. Authorization:

CP Order No. 184-6, 2 July 1948.

2. Mission:

a. To inspect actual industrial uses of charcoal in various type factories, to determine the necessity for its use, and to determine the possibility of a future reduction of its industrial use.

b. To investigate, by conference, the extent of pine beetle damage in the prefectures visited, the methods of control being practiced, and the results being obtained.

c. To investigate, by conference, what reforestation is necessary in the prefecture visited, what the present plans are, and what progree is being made.

3. Personnel Making the Trip:

Mr. Frank J. Spinar, Forest Products Economist, Forestry Division.
Mr. Fujimoto, Fuel Section, Bureau of Forestry, Japanese National.
Mr. K. Sudo, Fuel Section, Bureau of Forestry, Japanese National.

4. Summary of Results:

a. While charcoal is necessary for some industrial use it seems that it is also being allocated as a substitute for coal. To be sure, it is necessary that essential industry maintains full production, but it does not seem that charcoal vitally needed for household use should be used in lieu of coal. A more careful screening should be done by prefectural officials before an allocation is authorized to be sure that only charcoal will suffice for the intended operations and to prevent its misuse.

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b. Progress is being made on pine bark beetle control. Osaka Prefecture has the situation well in hand and Kyoto Prefecture is launching a heavy eradication program. No infestation of pine bark beetle occurred in Tottori and Shiga Prefecture. A shortage of funds, and in some cases of seedlings, is handicapping the reforestation program. A reforestation program to the extent of the monies available is being carried out.

5. Detailed Discussion:

a. Industrial Uses of Charcoal

(1) Osaka Prefecture

(a) The Fuso Metal Industries, Ltd., located in Osaka, Osaka Prefecture, makes iron castings and also produces steel by the open hearth method. The manufacmtured products consist mainly of railway rolling stock such as wheels, wheel centers, axles, small locomotive frames and parts of automobiles and mining and industrial machines. The factory and buildings cover 559,000 scuare meters and employs 5,832 people.

(b) In 1947, the company had a reported consumption of 1,446.9 metric tons of charcoal of which 22.4 metric tons was used as substitute for coke as a source of carbon in the open hearth and electirc furnaces. During 1948 approximately 1,261.5 metric tons will be allocated of which 526.3 metric tons will be in the open hearth furnace. None is being contemplated for use in the electir furnace.

(c) In operation the charcoal is placed in a trough-shaped bucket, inserted into the furnace by means of a hydraulic ram operating on an electric crane and dumped onto the molten mass. Soft charcoal produced from red pine is preferred for this purpose. It was stated that because of its specific gravity, this charcoal remains in suspension in the molten mass whereas other quality charcoal sinks to the bottom.

(d) Besides being used in the open hearth and electric furnaces, charcoal is used to preheat the ladles by igniting several bales

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inside the ladle and several bales under the ladle before tapping. It is similarly used to preheat ingot cases and for drying molds and cores. Charcoal is used for tempering steel, for forging, blacksmithing, for operation of transportation equipment and for cooking and heating. All of these used are allocated under the classification of industrial use. The various uses and amounts of each are shown in Table 1.

(e) During the interview, it was stated by the company officials that the use of coal and coke would be preferred for their operations primarily because it was cheaper and secondly becuase they were all aware of the shortage of charcoal and its acute need for home use. However, the coke would have to contain less than 0.5 percent sulfur for satisfactory use. It was further stated that monthly departmental meetings were being held at which ways and means of reducing the amount of charcoal used are discussed.

(f) During the observations of the operations, while the company officials stated that coal or coke could not be used in some of the operations because of the make-shift or antiquated equipment, it seemed that coal or coke can be used entirely or that other easily converted methods can be used. It was also the private opinion of some of the forestry officials that the company which produces some of its own charcoal in the Kochi area, Shikoku Prefecture, uses more charcoal than it reported.

(g) According to the charcoal consumption data supplied by company, in th F.Y. 1947, 48 percent of the industrial allocation of charcoal or 696.5 metric tons was consumed for other than industrial uses, being used for transportation and cooking and heating. The charcoal used for cooking and heating is equivalent to 3.05 bales per employee whereas the charcoal distribution in the Osaka area was approximately 3 bales per family of five persons. Just why 18.8 metric tons of charcoal are necessary to keep oxygen bottles warm was not ascertained.

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(h) The Japan Edges Mfg Co. K.K. (Nippon Hamono Sikaku Sho) in Osaka, Osaka Prefecture, manufactures industrial cutting tools such as slitters for paper machine, shaping knives for woodworking machinery, paper cutter knives and knives for steel cutting shears. Formerly, before a part of the factory burned, circular and band saws were also manufactured. The company's products are manufactured from steel ordered to their specifications and after fabrication the cutting edges are tempered by the company's special patented process using charcoal and a charcoal and coal mixture. The products being tempered are first heated in an open top furnace using the charcoal-coal mixture and finally immersed into an open bed of charcoal coals for approximately 1/2 hour until it is uniformly heated a bright cherry red. Then it is either oil or water quenched depending upon the item processed. This method of tempering has been employed by the company since its inception many years ago and it is claimed by the officials that because the tempering is done in a charcoal fire, a superior product is obtained. At the present production rate 29 metric tons of charcoal were consumed during F.Y. 1947.

(2) Tottori Prefecture

(a) In Tottori Prefecture, the industrial units are small and not too numerous. While these are small units individually, they are repeated many times in Japan and the aggregate consumption ~~in~~ the of charcoal is large. One of the larger consumers in the area is the Nakashima Wheat Mill which has a reported charcoal consumption of approximately 100 bales yearly. The charcoal is used to dry wheat after it is steam sterilized prior to being pressed into flames on steam heated rolls. The charcoal heats a small vertical oven through which the wheat kernels pss before being pressed into flakes. As the equipment is old and small, it does not seem feasible to convert into coal or firewood.

(b) The Maeda Machine Mill which manufactures and assembles agriculture implements, utilizes charcoal to ignite the gas coke used in their forges. A small amount is used, the reported consumption brings only 20 bales yearly.

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(c) At the Kimitoukasa Brewery Co. charcoal is used to maintain a minimum temperature of 28°C., in their incubation chamber used in conjunction with their shoyu-sauce manufacture. No other provision for heating of this chamber is made. Their reported consumption of charcoal is 10 bales per year. As this incubation chamber is approximately 20 x 20 x 10 feet and while it appears to be well built, it does not seem possible to provide sufficient heat throughout the winter with just 10 bales of charcoal to maintain the necessary temperature as Tottori is subject to cold winters descending from Siberia and to an abundant snow fall.

(d) In the Tottori area live many Koreans and repatriates who have difficulty obtaining employment. To provide a livelihood these people resort to illegal production of firewood and charcoal. As the fuelwood is produced illegally, it cannot be marketed through regular channels and consequently is sold on the illegal market at a reduced price. At the present time when the legal price for pine firewood is ¥27.40 per bundle, the illegal consumer price in this area is ¥10.00 per bundle. Illegal prices for charcoal were not obtained. Because the illegal prices are lower than the government consumer prices, it may be that the companies visited have a much higher consumption of charcoal than is shown by the reported allocation.

(3) Shiga Prefecture

(a) The Masuzawa Ceramic Co. in Fukawa, Shiga Prefecture, in addition to manufacturing the usual ceramic vases, pitchers, and bowls, manufactures large ceramic tray units used in the preparation of the silk worm cocoons on a silk filament winding machine. These ceramic units are large, measuring approximately 6 x 2 x 0.5 feet and present rate of production is 800 units per month. The kilns are vertical inclined kilns rising on a hillside and are designed to utilize firewood. Pine firewood is preferred because it burns with a longer flame. No charcoal is used. In fiscal year 1947, 232,000 bundles of firewood

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were consumed or approximately 42 bundles per unit produced. The planned allocation for fiscal year 1948 is 252,000 bundles of firewood. According to the company officials, the firewood is obtained from Shiga and Mie Prefecture. Inasmuch as according to the Central Government distribution plan, firewood produced in Mie Prefecture is not to be exported to Shiga Prefecture, that firewood used by the Masuzawa Ceramic Co. obtained from Mie Prefecture must come through illegal channels and the consumption must be greater than the reported allocation. Based on the company's statement that 42 bundles of firewood are required per unit and the reported production rate of 800 units per month, the required consumption is 403,200 bundles of firewood annually excluding that consumed for the small amount of the other articles produced.

(b) In addition to the firewood, 16,800 coal briquettes are consumed annually. These are placed in a "hibachi" type burner and spotted around in a chamber used for drying the molded forms before the first firing.

(c) The Showa Industrial Co. Ltd. located in Shiga Prefecture is the second largest producer of carbon disulfide in Japan, presently producing 120 metric tons per month. Of this production, 98 percent is used by the rayon industry. Beside the carbon disulfide the company produces a small amount of viscose adhesive used for manufacturing plywood, accelerators for rubber manufacture, and supplies a small amount ofthe carbon disulfide for the manufacture of carbon tetrachoride.

(d) Charcoal is used as a raw material for a source of carbon. The charcoal is loaded into retorts each containing 750 kilograms and heated to 1050° by means of coal. Molten sulfur introduced through the bottom of the retort reacts with the incadescent charcoal forming carbon disulfide vapors which passes off the top and through three watercooled condensers into a collection tank. As the crude carbon disulfide contains approximately 7 percent free sulfur, it is further refined by indirect steam distillation,

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the steam being supplied from coal-fired boilers. The finished product is 99.9 percent pure.

(e) To produce a ton of carbon disulfide requires 375 kilograms of charcoal. For fiscal year 1948, the planned production is 2,700 tons which require 1,012.5 tons of charcoal of which 740 tons have been allocated. A "hard" charcoal is used which is imported from Shimane prefecture as no "hard" charcoal is produced in Shiga Prefecture. The company is receiving a sufficient amount of coal.

b. Pine Beetle Damage and Control and Reforestation

(1) Osaka Prefecture

(a) The Osaka Prefectural Forestry Section is cognizant of the dangers of the pine bark beetle and are taking steps for its control and eradication. Early in 1947 a survey disclosed 22.370 infected trees having a volume of 40,000 koku and covering an area of 400 cho. Of these 18,656 trees having a volume of 25,606 koku have been cut during fiscal year 1947, and in April and May 1948, an additional 1,061 trees having a volume of 5,170 koku have been cut.

(b) As most of the diseased trees are under private ownership the profectural govermnt is encouraging the farmers to cooperate with the control program by furnishing kilns for the conversion of the wood into charcoal and is giving aid by means of subsidies.

(c) Of the 118,874 cho in Osaka Prefecture, 63,987 cho are forest lands of which 7,480 cho are public forests and 867 cho are National Forest. At the present time, approximatel6 6,000 cho are in need of reforestation which the officials plan to reforest at the rate of 1,200 cho per year under the five year reforestation plan. During fiscal year 1948, the Prefectural Forestry Section plans to distribute 1,500,000 seedlings of which 900,000 will be obtained locally and the balance will be imported from the Kyushu and Kanto districts.

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(d) Only three of the "Green Week" posters were received in Osaka so the forestry officials, showing good initiative, had the poster reproduced as slides and had the slides shown in five theatres in Osaka and in 25 others throughout the prefecture.

(e) The ~~re~~ forestry officials show considerable enthusiasm regarding reforestation. The program being somewhat handicapped by a lack of funds which they hope will be supplied in part by the central government. At first, the fear of a Forest Land Reform Act hampered reforestation but since last December, the officials, being assured by the Central Government that none was contemplated, were able to disseminate this information and this opposition is no longer as obstacle.

(2) Tottori Prefecture

(a) Tottori Prefecture does not seem to be affected by the pine bark beetle and surveys made by the Prefectural Forestry Officials on Military Government's instruction failed to show any infected trees. A constant surveillance will be maintained.

(b) Forest lands occupy 238,135 cho or 70 percent of the prefecture and the ownership is divided as follows:

State forest	25,735 cho
Public	92,672
Private	119,231
Shrine and temple	497
Total	238,135 cho

At the present time there are 5,096.4 cho of land in Tottori Prefecture which requires reforestation, the distribution of which is as follows:

Cut-over land	3,788.97 cho
Eroded area	241.70
Sand coast (dunes affixation)	1,065.74
	5,096.41 cho

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During fiscal year 1948, 1,520 cho of land are planned to be reforested. The ownership of this area is as follows:

Prefectural Forest	500 cho
Public-owned(Village, town, community)	200
Private owned	800
Private owned (special types)**	20
Total	1,520 cho

** Special type trees such as camphor, tung etc.

The prefectural assembly has voted a fund of ¥7,380,526 for the fiscal year 1948 reforestation program and is encouraging reforestation by paying part of the cost. With the assistance of the central government, the part of the cost of reforestation of 720 cho of land will be subsidies with the costs divided as follows:

1,520 cho

720 cho

500 cho
pref. owned
reforestation cost
40% central government
60% prefectural "

200 cho
community owned
reforestation cost
40% central govern.
40% prefectural "
20% owner

800 cho private-owned
100% paid by owner

20 cho (special type trees
privately owned
reforestation cost
40% central government
10% prefectural "
50% owner

The subsidies percentages paid by the Central and Prefectural governments are based on the first ¥10,000 per cho cost. Any different increase in reforestation cost which is now approximately ¥20,000 per cho must be paid by the owner. The prefectural forest section has 2,860,000 seedlings available for planting this year which, if planted at the rate of 3,000 seedlings per cho, will be insufficient. However, they have a nursery extention program under way which should supply sufficient seedlings by next year.

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(c) Tottori contains some virgin timber stands which are being exploited at present. The rate of cutting has been increased and is exceeding transportation facilities. Just prior to my visit, the Commanding Officer, MGT, had sent in a request for 5,080 freight cars in addition to his regular allotment to move logs and lumber which is accumulating throughout the prefecture.

(3) Kyoto Prefecture

(a) The Kyoto forestry official estimates that they have between 50 - 80,000 koku of beetle damaged pine in the prefecture most of it occurring in the northern section near the villages of Maizuru and Miyazu. About 80 percent occurs on private-owned forest and 20 percent on national and state-owned forest. Even though the prefectural officials have been aware of the epidemic a year ago, not much has been done because of lack of funds, and employees, and because they claim they did not realize the extent of the damage. However, this condition has been rectified and a cutting program is to be started 20 July 1948 and completed by the end of August 1948.

(b) Approximately 13,000 cho of land needs reforestation in Kyoto Prefecture at present and because of the increased cutting rate and a slow reforestation rate after five years approximately 20,000 cho will need reforesting. The fiscal year 1948 reforestation plan calls for the planting of 1,500 cho. The area planned is necessarily low because of a lack of funds and a shortage of seedlings. In reforesting the cost of planting is divided as follows: 40 percent Central Government, 40 percent Prefectural Government, and 20 percent owner. This division is based on a reforestation cost of ¥10,000 per cho, whereas the actual cost is ¥20,000. The additional ¥10,000 is to be paid by the owner.

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(c) Only two "Green Week" posters were received by the Prefecture. However, to emphasize reforestation, the Prefectural Forestry Section had a poster contest receiving entries from all parts of the prefecture. A prize was offered for the best reforestation poster submitted and as a further recognition, the prize winning poster will be the official poster for next year's "Green Week". The winner of the contest has not yet been decided.

(4) Shiga Prefecture

(a) The pine bark beetle has not yet reached Shiga Prefecture. As a precautionary measure, importation of wood from areas of know infection is not authorized and a constant inspection is maintained of railroad yards, s awmills and wood yards to prevent its importation.

(b) Forest lands cover about 66 percent of the land in the Prefecture, 6,879 cho are national and state owned forest, 3,050 cho are ¥¥ good private forest and 205,330 cho are fair private forests. The area recuiring immediate reforestation totals ~~area recuiring immediate reforestation totals~~ 5,900 cho but unless the central government issues a considerable subsidy not much can be done this year because of a shortage of funds, labor and seedling. Like the other prefectures, Shiga has a five-year reforestation plan during which time 14,400 cho will be reforested of which 5,760 cho will be by natural reforestation. The prefectural officials plan that 30 percent of the cost will be paid by the central government, 30 percent by the prefectural government and 40 percent by the owner. These percentages are based on the reforestation estimate of ¥10,000 per cho. The difference between the estimated cost of ¥10,000 per cho and the actual cost of ¥ 20,000 per cho is to be paid by the owner.

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(c) The section of Shiga Prefecture around Otsu-machi and adjacent to Lake Biwa is seriously in need of reforestation. An area of approximately 3,000 cho consisting mostly of steep slopes is badly gashed and eroded showing many bare-faces. The Forestry officials are aware of the situation but are handicapped by the lack of funds to do much about it and are awaiting central government subsidies for aid.

(d) As no "Green Week" posters were received in Shiga Prefecture, the Prefectural forestry section had 2,000 of their own design printed and distributed throughout the Prefecture.

c. Conclusion

(1) In general, it seems that the Economic Officers in Military Government have too many items to handle and duties to perform to apply more than a small amount of their attention to forestry and forestry problems. However, they would be glad to lend their assistance to any situation brought to their attention and will carry out any directive submitted to them.

(2) The prefectural officials are, in most cases, fully aware of the forestry situation and are quite enthusiastic regarding reforestation and are only handicapped by a lack of funds from carrying out their programs. The indication are that unless their enthusiasm wanes or some unforeseen factors occur, a serious effort will be made to fulfil the reforestation program.

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/s/ Frank J. Spinar
/t/ FRANK J. SPINAR
Forest Products Economist
Forestry Division

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