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CONVERSION FACTORS
METRIC TO ENGLISH - JAPANESE TO ENGLISH

Metric To English

Weight

1 gram	=	0.035 ounce
1 kilogram	=	2.205 pounds
1 metric ton	=	2,205 pounds
	=	1.102 short tons
		0.984 long tons

Volume and Capacity

1 liter	=	2.113 pints
1 cubic meter	=	35.313 cubic feet
1 cubic meter	=	282 board feet
1 kiloliter		264.178 U.S. gallons
		(6.29 barrels petroleum of 42 U.S. gallons each)

Length

1 meter	=	3.281 feet
1 centimeter	=	0.394 inch
1 kilometer	=	0.621 mile
1 millimeter	=	0.039 inch

Area

1 square meter	=	10.764 square feet
1 hectare	=	2.471 acres

Japanese To English

Weight

1 koku rice	=	330.69 pounds
1 kan	=	8.267 pounds
1 momme	=	0.132 ounce
1 kin	=	1.323 pounds

Volume and Capacity

1 koku rice	=	5.010 66-pound bushels
1 koku wheat	=	5.029 60-pound bushels
1 koku naked barley	=	5.015 61-pound bushels
1 koku barley	=	4.995 48-pound bushels
1 koku lumber volume	=	120 board feet
1 koku log volume	=	80 board feet
1 koku liquid	=	6.370 cubic feet
	=	47.654 gallons
1 koku solid volume	=	9.827 cubic feet
1 soseki koku stacked volume	=	9.827 cubic feet
1 go	=	11.008 cubic inches
1 shaku	=	0.610 fluid ounces
1 sho	=	0.4765 U.S. gallon

Length

1 sun	=	1.193 inches
1 shaku	=	0.994 foot
1 bu	=	0.119 inch

Area

1 cho	=	2.451 acres
1 tan	=	0.245 acre
1 tsubo	=	35.583 square feet
1 se	=	0.0245 acre
1 square shaku	=	0.988 square foot

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NATURAL RESOURCES SECTION

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WEEKLY SUMMARY

No 280
18-24 February 1951

GENERAL HEADQUARTERS

SUPREME COMMANDER FOR THE ALLIED POWERS

TOKYO, JAPAN

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RESOURCES UTILIZATION

1. Address on Conservation for Peace

a. The significance of conservation in Japan was the topic of an address given by Lt Col Hubert G. Schenck, chief, Natural Resources Section, at the meeting of the America-Japan Society 23 February 1951. His address follows:

CONSERVATION FOR PEACE

Five thousand years ago primitive people, few in number, inhabited these islands. They eked out a meagre existence by hunting in the hills and fishing in the bays. Floods bothered them little, for they had no paddy fields to be destroyed, no railroads or highways to be washed away, no hydroelectric reservoirs to be filled with debris. Lacking metal tools, they had no way to fell the trees in the forests. They fought continuously for subsistence survival, and they lived in fear not so much of their fellow Neolithic man as of Nature.

Today nearly 84 million people inhabit the same islands. Since the introduction of farming during the first millennium before Christ, about 15,000,000 acres of land have been placed under cultivation; today about one-half of the population depends upon the soil for existence. Since the Meiji restoration in 1868, Japan has seen the introduction of the railroad and telegraph, compulsory universal education, and modern industries, and a vast expansion of trade and commerce.

As, year by year, the country's industrial and commercial development increased and the great rise in population became more marked, the pressure upon the utilization of the domestic resources became more and more pronounced. These factors brought to the fore the urgent need to conserve the material and human wealth of the nation. This has been especially true all through the decades between the latter part of the 19th century and our day. Now it is all too obvious to anyone concerned with the welfare of Japan that the country is confronted--as never before--with the urgency to husband in the most effective way its own resources in the water, in the hills, and in the valleys. In the years immediately ahead, Japan must bend every effort to protect her natural resources, of which she has little, and her human resources, of which she has an abundance.

I welcome, therefore, this opportunity to present my own views to this distinguished audience and to solicit from you ideas on how we can best meet these problems. That they are vitally important may be judged from the fact that leaders of all forward looking nations are deeply concerned with them. Even in a country as richly endowed as the United States the battle cry for conservation has been heard throughout the land since about the turn of the century. Certainly this should be true of Japan.

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You may well ask, as have several of my friends, "What do you mean by conservation?" I was astonished by the question at first, so I sought the counsel of my esteemed friend, Dr H. Takeda, requesting him to give me the Kanji for the word "conservation". To my surprise, he told me that no single character exists. "Hoji" 1/ means to protect or to keep; this is the word a farmer would use when he tells how he and his ancestors have maintained soil fertility for hundreds of years. "Hogo" 2/ is the word for protection, as in maintaining the beautiful scenery in one of your national parks. "Hozon" 3/ is to keep; thus, when one speaks of forest conservation he says "shinrin hozon". "Isso noritsuno takai riyo-ho" 4/ is the expression for more efficient utilization. How well now I understand the difficulty my staff has had during the past five years explaining to the Japanese a commonly used definition of conservation as "keeping in a safe or entire state and preventing waste of the resources of man's physical environment".

Furthermore, the English word itself has a wide area of meaning. Prevention of the loss of fertile top soil, selective cutting of forests, irrigation of arid regions, protection of wild life, fixation of sand dunes, efficient mining operations, and prevention of over-fishing are among the activities which have been cited by one authority or another as examples of conservation. With such a range of definition, how could it be possible with one ideograph to express a complex concept?

The Japanese farmers for generations have applied sound conservation practices. They have obeyed what Dr Walter C. Lowdermilk, a world-famous authority temporarily on duty with the Natural Resources Section, calls the 11th Commandment:

"Thou shalt inherit the holy earth as a faithful steward conserving its resources and productivity from generation to generation. Thou shalt safeguard the fields from soil erosion, thy living waters from drying up, thy forests from desolation, and protect thy hills from overgrazing by the herds, that thy descendants may have abundance forever. If any shall fail in this stewardship of the land, thy faithful fields shall become sterile stony ground or wasting gullies, and thy descendants shall decrease and live in poverty or perish from off the face of the earth."

Specialists who have studied the history of Japanese farming are impressed by the successful maintenance of soil productive capacity on fields that have been in continuous cultivation for much more than a thousand years. In countless valleys throughout the Home Islands the conservation and utilization of water has been developed to a degree equalling or surpassing practices elsewhere in the world. Such cases of conservation in the "Hoji" sense serve as a beacon light of hope to neighboring countries which are confronted with similar problems.

1/ 保持
2/ 保護
3/ 保存
4/ 一層能率の高い利用法

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Next let me give an example of conservation in the "Hogo" sense by telling a story of fur seals ("ottosei"). Unsavory indeed is the beginning of the tale, and I shall omit references to the hardship, cruelty, murder, shipwreck, blood, and gore which marked the early course of fur sealing in the north Pacific. The uncontrolled slaughter was finally ended by international agreement, an agreement which was possible only because the animals had decreased so markedly that pelagic sealing was no longer a profitable business undertaking. The four-power Fur Seal Convention was signed by the United States, Great Britain, Russia, and Japan in 1911. During its 30-year life span this was one of the most successful of all international conservation treaties. The results obtained under its provisions demonstrated how a vanishing species can be saved from extermination by rigid protection and developed into a lucrative industry by wise management. The 1911 treaty was abrogated by Japan in 1941, and subsequent international discord has prevented the resumption of negotiations among the four powers concerned.

Forests too are a renewable resource, and an essential one. Japan cannot do without the products of the forests, yet failure to practice conservation threatens to destroy her domestic source of lumber, pulpwood, and charcoal. The situation in some respects is parallel to that of the fur seals when more animals were killed each year than were born. Overcutting by man and infestation by beetles together remove and destroy each year far more coniferous timber than is grown. Excessive exploitation is depleting the growing stock which is necessary for maximum sustained yields in merchantable timber. In 1950 alone the volume of timber killed by bark beetles was sufficient to supply Japan's pulpwood requirements for four months--more than enough to supply the entire annual need for railroad ties if the wood could have been salvaged for these purposes.

Fortunately many influential Japanese realize that good forestry practices will help the nation to meet the wood requirements. The post-Surrender reforestation program at long last is progressing satisfactorily. The government embargo on the export of forest products is helping to reduce the drain. An energetic campaign is underway to control the destructive insects. The task ahead is to convince all private owners that they must follow this rule: "Do not cut more wood than nature can replace through growth".

Up to this point, the examples I have given have been chosen to show that the management of a renewable resource on a sustained yield basis is conservation. When we next consider a non-renewable resource, such as iron or manganese or petroleum, the word is more difficult to explain. Insuring the maximum efficient recovery of petroleum from an oil sand by applying methods based on proved engineering principles is conservation; the prevention of waste in metallurgical plants is conservation; efficiency in processing all raw materials is conservation. Let me illustrate this concept by a statement concerning petroleum. During the last three decades Japan has never produced more than about 15 percent of her requirements; every kiloliter produced locally, however, reduces the need for imports. In the past, petroleum companies have produced the nation's oil with little or no regard

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to proper production practices, so that much of the oil that should have been made available by lifting from wells still remains trapped in the ground. Realization of this basic error has prompted the inclusion of conservation measures in the proposed new Petroleum Resources Development Law, in order that the maximum efficient recovery of oil will be attained in the future. Such measures will operate for the ultimate benefit of the oil producers, as well as that of the nation as a whole. Japanese petroleum engineers now are also beginning to apply the relatively new technique known as "secondary recovery", in order to recover more of the oil that still remains in the reservoirs and that cannot be extracted by normal methods of lifting from the oil wells. Increased recovery by better technology, therefore, is conservation in the sense of "isso noritsuno takai riyo-ho".

If time permitted, numerous other examples might be given to show the significance of conservation in stretching Japan's supply of materials. Japan today must be more seriously concerned with conservation than ever before in her history. In order to reduce the amount of imported raw materials, the Japanese must do more than merely talk about it, they must put conservation into effect. No longer can this nation afford to overexploit her resources; no longer can she draw on colonies for supplies; no longer can she excuse wasteful processing. The limited resources of the Home Islands probably can never support an over-populated industrial nation but they can be--they must be--developed and managed carefully by a conservation-minded public. The inventive genius of the researcher must be called upon to further this objective and to discover substitutes for commodities now in short supply.

Calamitous may be the consequences of failure to apply sound management principles in a mountainous country which is subject to heavy rainfall. Do you realize that the annual damage from floods in Japan approximates the total amount earned from exports during 1949? Just imagine: Flood damage in Japan, a nation smaller than the State of California, is four times the damage in all of the United States. Of course, man has not yet learned to control the primary cause of floods--the weather. Man can only reduce the amount of damage. Protection forests on watersheds, check dams in the upper courses of streams, levees in the lower courses, and contour agricultural cultivation are some of the preventive measures which can help to reduce the appalling toll now being taken by flood waters.

Yes, the natural resources of this or of any other nation must be carefully managed, but the process must not end there. Equally important, the people must conserve their fundamental human rights and privileges. In the future this problem will face the Japanese people in many aspects. Greedy persons, like the fur sealers of the past century, may try to kill your gains in democracy. Others, like the beetle, may try to destroy by boring from within. Some vested interests might like to clearcut the young trees of equal rights in the forest of government by the people and for the people. Like the oil companies who, through lack of knowledge of recent technological development, have left in the ground much of the oil that could have been extracted

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by rational production methods, there will be those who, in the rush of economic rehabilitation, will allow the prospect of quick returns to overshadow the more bountiful ultimate return that results from proper conservation control. These too are likely to forget the equally important social rehabilitation that must go hand in hand with economic rehabilitation. I most sincerely hope that the Japanese will accept the responsibilities of citizenship necessary to maintain social stability within the nation. Otherwise the balance will be upset and conservation in neither material nor spiritual matters will be possible. Beyond all doubt, conservation for peace depends upon a balance between nature on the one hand and economic and social values on the other.

I have tried to discuss conservation in both the material and the spiritual sense, in the effort to suggest that effective conservation depends upon many people in many places. It also depends upon the people's sense of well being and voluntary responsibility to the community and nation as a whole. A wise government will relentlessly pursue these aims. Stable communities in a democratic society must express their desires to their government. Scientists who carry on research in an environment of academic freedom, and who can publish uncensored reports of the results they obtain, can and should contribute to a conservation program. Diplomats must negotiate treaties to protect the productivity of international waters--and do their part in the larger struggle for human rights. Legislators must prepare and appropriate agencies must enforce modern laws. Industrialists must appreciate the need for conservation and support the recommendations of their technical staffs, as well as respecting the human needs of the people they employ. In fact, it is up to us all, it is up to individual citizens everywhere to decide whether we shall have a ravaged earth where the inhabitants fight for economic survival or whether we shall conserve our resources and human rights to mutual advantage in a peaceful world.

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LAND REFORM

1. Land Consolidation Procedures and Progress of Land Consolidation Work During 1950

a. Starting in 1950 the Ministry of Agriculture and Forestry launched a five-year plan for promotion of land consolidation in Japan. The details of the plan are summarized in the following table.

FIVE-YEAR PLAN FOR PROMOTION OF LAND CONSOLIDATION

Year	Number of Projects to be Initiated	Area to be Benefitted (cho)
1950	920	184,000
1951	1,260	230,750
1952	2,880	515,500
1953	3,115	467,000
1954	2,600	317,750
TOTAL	10,775	1,715,000

b. Under the Land Improvement Law, Law No 195 of 1949, land consolidation projects may be initiated and carried through by agricultural land commissions, land improvement districts, or agricultural cooperative associations. The procedures are parallel for the three types. Those outlined in the following table apply specifically to projects undertaken by land commissions, which comprise more than 90 percent of the total.

PROCEDURES FOR INITIATION AND COMPLETION OF LAND CONSOLIDATION PROJECTS

Step	Action
1	(Optional) Prefectural authorities may survey an area and decide to propose to a land commission that a project be initiated.
2	(a) Two or more promoters propose that an area consider a consolidation project or (b) the local land commission decides to propose consideration of a consolidation project.
3	One-half of those to be affected by the project must vote to consider it.

(Cont'd)

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PROCEDURES FOR INITIATION AND COMPLETION OF
LAND CONSOLIDATION PROJECTS (Cont'd)

Step	Action
4	The local land commission drafts a preliminary consolidation plan.
5	Two-thirds of those to be affected must vote to accept the plan drafted by the Commission.
6	The plan so accepted must be publicly displayed for 60 days, and objections heard by the local land commission.
7	The local land commission decides within the next 60 days whether or not to adjust for objections raised.
8	Persons not satisfied with local land commission adjustments may appeal within 10 days to prefectural commissions.
9	Prefectural commissions must resolve appeals within 60 days.
10	The prefectural governor must consider and approve the consolidation plan in order to validate it.
11	Actual operations under the plan may be undertaken.

c. During 1950 a total of 923 consolidation projects were started to benefit an estimated 202,925 cho. Of this area, approximately 65 percent is paddy land, 31 percent is upland, and the remaining four percent is grassland or pasture. Progress of these projects as of 1 January 1951 is shown in the following table.

PROGRESS OF LAND CONSOLIDATION PROJECTS INITIATED DURING 1950
As of 1 January 1951

Status	Number
Initiated in accord with Step 1 (no further action)	33
Initiated in accord with Step 2 (no further action)	37
Completed through Step 3	672
Completed through Step 5	114
In Steps 6-9	20
In Step 10	13
Completed through Step 11 except for title registration	10
Status unknown	23
TOTAL	923

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AGRICULTURAL COOPERATIVE ASSOCIATIONS

1. Liquidation of Nogyokai and Practice Associations as of 31 January 1951

LIQUIDATION OF NOGYOKAI AND PRACTICE ASSOCIATIONS
As of 31 January 1951.

Type	Local	Prefectural
Nogyokai		
Dissolved	10,721	46
Transfer of assets approved	10,624	46
Registration of assets transfers completed	8,701	20

Type	Agricultural	Sericultural
Practice associations		
Dissolved	144,596	34,450
Liquidation completed	144,596	34,450

SOURCE: Agricultural Cooperative Assn Division, Ministry of Agriculture and Forestry.

FOOD POSITION AND COLLECTION

1. Collection of 1950 Staple Crops as of 20 February 1951

COLLECTION OF 1950 STAPLE CROPS AS OF 20 FEBRUARY 1951
(1,000 metric tons brown rice equivalents)

Crop	Cumulative Amount Collected	Delivery Quota	Percent of Quota Fulfilled
20 February 1951			
Rice and rice subs	4,284.4	4,326.4	99.0
Wheat and barley a/	1,248.4	1,244.7	100.3
Total	5,532.8	5,571.1	99.3
20 February 1950			
Rice and rice subs	4,385.5	4,481.8	97.9
Wheat and barley a/	1,218.4	1,000.0	121.8
Total	5,603.9	5,481.8	102.2
20 February 1949			
Rice and rice subs	4,617.8	4,592.9	100.5
Wheat and barley a/	974.3	950.5	102.5
Total	5,592.1	5,543.4	100.9

a/ As of 31 January; collection reported at end of month only.
SOURCE: Food Agency, Ministry of Agriculture and Forestry.

2. Collection of 1950 Rice and Rice Substitutes as of 20 February 1951

a. Collection of 1950 rice and rice substitutes by percent of quota and quantity as of 20 February 1951 are shown in the charts on page 11 with comparisons for 1949 and 1948.

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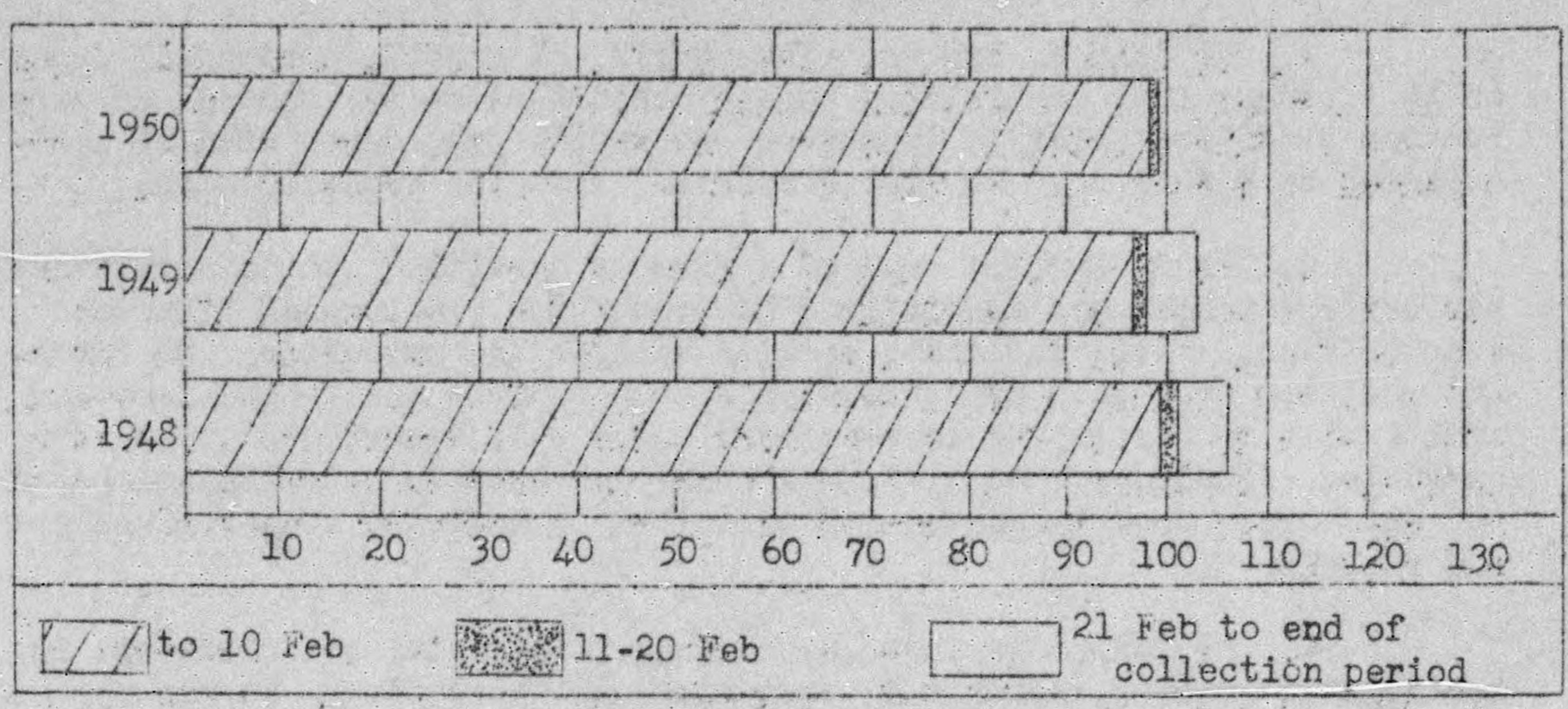
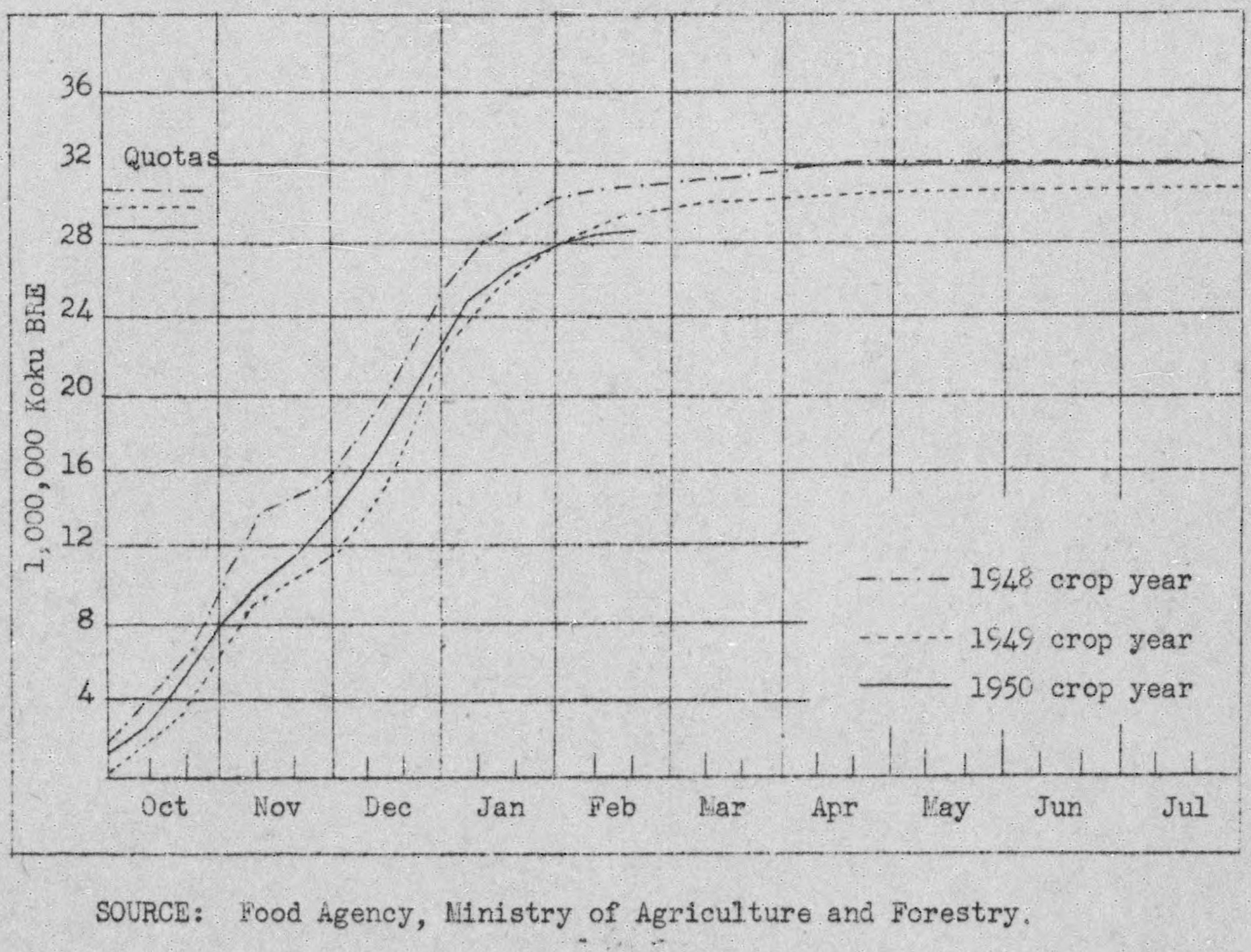
COLLECTIONS OF 1950 RICE AND RICE SUBSTITUTES AS OF 20 FEBRUARY
WITH COMPARISONS FOR 1949 AND 1948

Percent of Quota Collected



Cumulative Collection by 10-Day Periods



SOURCE: Food Agency, Ministry of Agriculture and Forestry.

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GENERAL

1. Visiting Expert on Cooperative Accounting

a. Mr John C. Essene, Minneapolis, Minnesota, arrived in Japan on 18 February 1951 as visiting expert consultant on the Natural Resources Section staff to assist in improving accounting procedures used by agricultural cooperatives. He will remain in Japan for about 90 days.

b. Mr Essene, as head of a firm of certified public accountants for several years, has specialized in accounting problems of Minnesota cooperatives. While in Japan, he will analyze the accounting and internal auditing practices of agricultural cooperatives and federations and will assist in developing improvements which will contribute to greater operating efficiency. He also will study and prepare recommendations on the procedures used by government officials in auditing cooperatives and federations.

c. Mr Essene is a graduate of the University of California in Los Angeles where he majored in economics and accounting. He was in the Army during World War II and in 1946 was stationed in Tokyo as an officer in General Headquarters, Supreme Commander for the Allied Powers.

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FISHERIES DIVISION

GENERAL

1. Minister of Agriculture and Forestry Issues Statement on The Economic Crisis Facing Japan's Coastal Fishermen and a Five-Point Program for Its Solution

a. The Minister of Agriculture and Forestry has issued a statement on the five-point program for meeting the economic crisis facing Japan's coastal fishermen. This program was discussed in a recent press statement made by the chief of Fisheries Division, Natural Resources Section (see Weekly Summary No 279). A translation of the Minister's statement follows:

"A statement was made public by the Natural Resources Section of the General Headquarters of the Supreme Commander for the Allied Powers today concerning 'The Economic Crisis Facing Japan's Coastal Fishermen and a Five-Point Program for Its Solution'.

"This program clarifies that although the physical rehabilitation program of Japan's fishing industry has been largely accomplished, the solution of the economic crisis now facing Japan's coastal fishermen will require an immediate preparation of a drastic long-range program, and the enforcement of the following Five-Point Program is strongly requested to meet the crisis as the minimum requirements:

Point 1. Stop further expansion in overfished fisheries and accomplish needed reduction in fishing intensity.

Point 2. Develop sound conservation regulations for various fisheries.

Point 3. Establish strong departments in the Fisheries Agency and prefectures for enforcement of fishery regulations.

Point 4. Increase the fishermen's profits.

Point 5. Establish a sound financing program.

"And it is pointed out that this Five-Point Program will require much careful thought and planning to work out the practical details, and it is emphasized that these measures must be placed all round in effect as 'a single well-coordinated program'.

"This year appears to be a very important year in Japan's fishing industry because outside of the country our fishing industry may

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be allowed to return to international fishing grounds through the peace treaty close at hand and the epoch-making Fisheries Reform will be accomplished at home.

"At the beginning of such an important year, the General Headquarters favored us with a very opportune Five-Point Program. Let me express my hearty thanks for the great kindness of the General Headquarters, and at the same time let me appeal to our fishermen throughout the country and to all our people over the country for your understanding and cooperation in this program. We shall all be determined to expedite various measures strongly along the line of this program and to establish a sound organization of fishing industry as a link in the chain of Japan's self-supporting policies."

FISHERIES RIGHTS

1. Fisheries Rights Reform Information and Education Program

a. The Fisheries Agency, Ministry of Agriculture and Forestry, notified Natural Resources Section that the wall newspaper "The Fishing Grounds Planning is the Basis of the Fisheries Reform" was shipped to prefectures 15 February 1951. This wall newspaper is part of the information and education program carried on by the Fisheries Agency to assist in the implementation of the fisheries rights reform program. The wall newspapers are to be distributed to municipalities, fisheries cooperatives, secondary and elementary schools, Sea Area Fisheries Adjustment Commissions, and fishermen for posting in public places. The distribution by prefectures follows:

DISTRIBUTION OF WALL NEWSPAPER ON FISHING GROUNDS PLANNING

Prefecture	Number of Copies	Prefecture	Number of Copies
Hokkaido	3,585	Ishikawa	1,629
Aomori	1,658	Fukui	1,461
Iwate	1,169	Yamanashi	426
Miyagi	1,241	Nagano	2,506
Akita	2,289	Gifu	2,676
Yamagata	1,452	Shizuoka	1,788
Fukushima	784	Aichi	1,507
Ibaraki	2,392	Mie	1,923
Tochigi	911	Shiga	978
Gumma	458	Kyoto	1,462
Saitama	373	Osaka	729
Chiba	1,811	Hyogo	2,451
Tokyo	907	Nara	358
Kanagawa	983	Wakayama	1,344
Niigata	1,517	Tottori	1,523
Toyama	812	Shimane	2,135

(Cont'd)

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DISTRIBUTION OF WALL NEWSPAPER ON FISHING GROUNDS PLANNING (Cont'd)

Prefecture	Number of Copies	Prefecture	Number of Copies
Okayama	1,150	Saga	985
Hiroshima	2,199	Nagasaki	2,851
Yamaguchi	1,546	Kumamoto	1,643
Tokushima	834	Oita	1,380
Kagawa	1,207	Miyazaki	867
Ehime	1,910	Kagoshima	1,795
Kochi	1,220		
Fukuoka	1,253	TOTAL	64,000

AQUATIC PRODUCTION

1. Catch Statistics of Third Mother Ship-Type Tuna Expedition

a. Final reports on amount and composition of catch on the third tuna expedition have been compiled by the Fisheries Agency after unloading was completed at various landing ports in Japan.

b. The expedition consisted of a 500 gross ton mother ship and six 140 ton class catcher boats. It operated from 1 December 1950 to 7 January 1951 in the vicinity of 4°N latitude and 137°E longitude.

c. Total catch was 589,653 pounds, of which 463,429 pounds were tuna and 85,104 pounds were spearfishes. The mother ship, Tenryu Maru, brought 68,938 pounds back to Japan in frozen condition, and the remainder of 520,715 pounds was transported in ice in the holds of the catcher boats. All of the catch was sold for consumption in Japan.

d. The fish were classified into four grades by the receiving agencies for retail purposes. These grades give an indication of the condition of the fish and the efficiency of the expedition as regards preservation of the catch. Breakdown of the total catch by grades is 44 percent Class A, 29 percent Class B, 12 percent Class C, and 14 percent Class D. All grades are edible except some of Class D, which is used for fertilizer. The condition of the catch varied with the insulation and refrigeration equipment on the catcher boats. The best load was delivered by the Seisho Maru, which had a record of 75 percent Class A fish and only one percent Class D. The Azuma Maru No 11 delivered the poorest load, consisting of 21 percent Class A and 39 percent Class D. The Fisheries Agency maintains records of performance of the various catcher boats with the intention of eliminating the more inefficient boats from participation in future expeditions.

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e. The following table shows the catch by species.

LANDINGS OF THIRD TUNA EXPEDITION BY SPECIES

Species	Catch (pounds)
Tuna	
Yellowfin tuna	395,889
Big-eyed tuna	58,279
Albacore	8,027
Skipjack	1,234
Total	463,429
Spearfish	
Black marlin	72,609
White-striped marlin	5,493
Striped marlin	190
Sailfish	3,156
Broadbill swordfish	3,656
Total	85,104
Sharks	37,025
Others	4,095
TOTAL	589,653

SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry.

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FORESTRY DIVISION

GENERAL

1. NR Representative Addresses National Prefectural Foresters' Annual Meeting

a. The National Prefectural Foresters' Annual Meeting was held at Ueno, Tokyo, on 22 February. A representative of Natural Resources Section spoke to the group, which comprised approximately 250 foresters. Three Japanese forestry leaders also addressed the meeting, emphasizing the need for national planning and reforestation and the importance of a sound national forest policy.

b. Following the address by the Natural Resources Section representative, questions were raised by the foresters concerning timber imports and improvement in the land reclamation program. The group acknowledged that Japan cannot delay putting sound forestry practices into effect. They recognized not only that some reduction in cut will be necessary in the initial stages of implementing a sound forest management program, but that furthermore sound action programs must be effected this year because of Japan's rapidly deteriorating forests. Several Japanese representatives stated that undoubtedly end-use controls would have to be instituted to insure the highest use of wood and that further research should be encouraged in order to eliminate the extensive waste in processing.

c. The Natural Resources Section representative addressed the meeting as follows:

"Since the end of hostilities, there has arisen a general recognition of the problems confronting foresters and of the services that can be rendered by foresters. You have proven by your actions that professional foresters make capable administraters. I am particularly glad to see that the Forestry Bureau has been raised to an agency and that in most prefectures the forester enjoys the same status as his agricultural associate. I am glad, too, that Japan, like other countries whose forest problems are urgent, is placing more and more responsibility for administration and policy in the hands of men technically trained in forest work. This is as it should be.

"As a matter of fact, you have done too thorough a job insofar as increasing the supply of forest products is concerned. In your desire to satisfy the demand for wood, you have dealt over-generously with the forest resource. Unrestricted cutting in the private forests has led to widespread denudation, soil erosion, serious floods, and now a shortage of timber. The problem now confronting both you and Japan is how to restore the private forests and increase the production of wood.

"Japan has reached the point where it can no longer delay requiring all forest owners to set about restoring their forests to maximum

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productivity and managing them on sustained yield. Liquidation of the remaining stands must be stopped and improved cutting practices put into effect.

"It is part of your professional responsibility to convince the wood users that in this way and this way alone can they hope for a continuing supply of raw material. It is part of your professional responsibility to convince the forest owner associations that unless forest management is made compulsory, their organizations will cease to exist within five years or less and all the aspects of Japan's economy that depend on wood products will be headed for bankruptcy.

"To avoid this, there are certain fundamentals that I believe should be included in the Forest Law. First, it should be based on a firm statement of forest policy which establishes the responsibility of the central government for the protection and wise utilization of the forest resources and recognizes that the public welfare requires the rehabilitation, protection, and continuous management of forest lands for the purpose of conserving water, prevention or mitigation of floods and control of soil erosion, improvement of wildlife and recreation, and provision for a continuing and increasing supply of forest products essential to the economy of the country.

"Second, the Forest Law should provide for managing private forests on a sustained yield basis. The reduction of cut on private forest land to a volume equivalent to growth will not be made voluntarily by forest owners because it will mean present sacrifices for the public welfare. Only the central government can establish and maintain long-range, comprehensive forest development programs designed to contribute the maximum possible to the public welfare. Central government supervision of the management of private forests will be ineffective, however, unless supported by provisions in the law which (1) prohibit clear-cutting of immature stands but encourage their periodic thinning as silviculturally necessary to maintain an optimum rate of growth, (2) prohibit clear-cutting of mature stands on steep slopes, (3) require partial cutting methods of harvest on steep slopes to maintain an adequate forest cover as protection from erosion, (4) require reforesting of allowable clear-cut areas immediately after cutting, and (5) authorize regular central government field inspection of private forest operations to assure satisfactory implementation of the Forest Law and expenditure of subsidies.

"In the administration of such a law, there are certain opportunities you cannot afford to overlook. The simple practice of thinning the timber stands would largely supply the immediate demand for pulpwood, mine props, railway ties, and telephone poles. Compulsory application of sound forestry practice would reverse the present trend toward forest degradation and start them toward full recovery. In a relatively short period of time, the entire wood requirements of the nation could be met.

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"But let me emphasize above all else the fact that compulsory management of private forest lands is the very essence of this law. Unless that provision is enforced without fear or favor and with absolute professional honesty, there is little hope either for the forests of Japan or for the forest owner associations or for the profession of forestry.

"I realize as well as any of you that it is not an easy thing to withstand the pressures that are brought upon you by a wood-hungry industry. But the forests must be made to serve the national welfare and foresters must broaden their horizon beyond the demands of the individual owners. You must learn to say 'No' when the greater interest of the nation is at stake, for your loyalty from beginning to end must be to the national welfare.

"I am not pointing out to you any easy way. There is no easy way. Yours is a situation that must be met with courage and a clear knowledge that the forester has but one duty--to see to it that his forests render their highest benefits to the nation as a whole.

"One thing more. Today Japan is at the crossroads with respect to its forest resource. It can take the steep courageous road that leads up, to restore the forests and maximize growth. Or it can take the road downhill to forest exhaustion. But decide it must--and soon. To hesitate, to delay, is failure in itself. And on you foresters may depend to a very great extent what road Japan will take. It is a very grave responsibilty. Be equal to it !"

RESOURCES

1. Preliminary Study on Forest Insect Control in Japan

a. Natural Resources Section Preliminary Study No 45, Forest Insect Control in Japan, published in February 1951, was written by Mr Robert Furniss, forest entomologist and visiting expert consultant in Forestry Division, Natural Resources Section. The preliminary study is based upon observations of the pine forests of Japan made by the writer in two visits to Japan, the first in 1949-50 and the second in 1950-51. The study reviews the progress and accomplishments which were made during the year's interim, subsequent to the writers initial recommendations made in January 1950. These accomplishments, together with suggestions for improvements still needed, are listed in Weekly Summary No 274.

b. The preliminary study describes the infestation situation during 1949-50, gives in detail the progress and problems of forest insect control during 1950-51, and makes additional recommendations for improving the forest insect control program in the future. Law No 53, Law

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for Exterminating and Preventing Pine Bark Beetles and Other Similar Borers, and Other Destructive Forest Pests and Diseases, appears as an Appendix to the study. This insect control law was promulgated 31 March 1950.

c. The following additional recommendations were made by the visiting expert consultant after his second comprehensive examination of the pine forests of Japan to improve further the pine bark beetle and other forest pest control programs:

(1) Such changes in the forest pest control law as may be necessary should be made slowly and only after the application of the law in its present form has been fully tested.

(2) Subsidies from the central government for bark beetle control should be kept to the minimum compatible with the general welfare of the people at large. Subsidies should not be expended for trivial or purely local projects.

(3) The staff of the Pine Bark Beetle Control Office should be brought up to its full complement, and adequate funds provided to insure the proper planning, supervision, and conduct of control projects upon which funds of the central government are spent.

(4) Survey and control activities on the national forests in general should be investigated, and, where necessary, action should be taken to raise the quality of the work at least to the level of that in the more enlightened prefectures.

(5) The use of airplanes for detection and delineation of forest insect outbreaks should be investigated when the operation of airplanes for civil purposes becomes possible in Japan.

(6) Survey and control measures in most prefectures should be improved still further, especially in Okayama, Nagasaki, and Yamaguchi prefectures. The procedures developed in Kagoshima and Miyazaki prefectures should be studied by prefectures in need of improvement.

(7) Comprehensive research should be undertaken to increase the effectiveness and decrease the costs of direct control. Special emphasis should be given to the problem of determining which species of insects are really destructive and which are only secondary. Once that information is available, control should be restricted to the destructive species.

(8) Research should be undertaken to develop methods for the lasting control of bark beetles and other forest insects through improved forest management practices and thereby reduce the necessity for direct control expenditures. Early implementation of the forest management plan program is a logical first step toward attaining indirect control of bark beetles through improving the vigor of the host trees.

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(9) The program of training forest insect research specialists and practicel control men should be continued and intensified.

PRODUCTS

1. Reported Bamboo Production and Stockpiles, October-December 1950

a. The production of "moso" (large-sized bamboo) during the third quarter of the 1950 fiscal year 1/ was 666,500 pieces. This is 167.8 percent more than during the second quarter of the 1950 fiscal year and 3.7 percent more then during the third quarter of 1949. Production of smaller bamboo was 2,577,500 bundles or 142.0 percent more than during the second quarter of the 1950 fiscal year and 2.6 percent more than during October-December 1949.

b. The stockpile of bamboo, following the usual seasonal trend, increased during the third quarter. The amount of "moso" at the end of the quarter was less than at the end of the same quarter in 1949.

c. Production and stockpiles of bamboo during October, November, and December, as reported by the Forestry Agency, Ministry of Agriculture and Forestry, are shown in the following table.

REPORTED BAMBOO PRODUCTION AND STOCKPILES, OCTOBER-DECEMBER 1950

Month	Production		Stockpiles	
	Moso Bamboo (pieces)	Other Bamboo (bundles)	Moso Bamboo (pieces)	Other Bamboo (bundles)
October	234,400	812,800	94,200	512,100
November	219,700	828,000	125,700	581,800
December	212,400	936,700	151,700	606,400

SOURCE: Forestry Agency, Ministry of Agriculture and Forestry.

1/ Japanese fiscal year, 1 Apr 50-31 Mar 51.

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MINING AND MILLING

1. Technical Examination of Exploration and Mining Practices at Hitachi Mine

a. Natural Resources Section personnel made an examination of exploration and mining practices at Hitachi mine, Nippon Mining Co, Ibaraki Prefecture.

b. Production and Reserves: The Hitachi mine produces 20,000 tons of crude ore monthly. An increase of 10,000 tons monthly is planned for 1951, but it may be possible to double present production when new flotation cells are installed in the mill. A new shaft will facilitate transportation. The average grade of the ore is 1.3 percent copper and 16 percent sulfur. Copper concentrates from the mill contain 16 percent copper; the pyrite concentrates average 48 percent sulfur. Proved and probable ore reserves are estimated at 7,000,000 tons of crude ore. The chance of finding additional ore appears to be excellent.

c. Geology

(1) Ore Bodies: Cupriferous pyrite and, locally, pyrrhotite are in steeply dipping lenses, ranging from small uneconomic bodies to bodies several hundred meters long and up to more than five meters wide.

(2) Mapping: A surface map was made mainly by the Geological Survey. It is probably a fair representation but does not show structural features such as faults and fold axes. All of the underground levels have been mapped, but work prior to 1950 is poor. Parts of three levels were well mapped in detail during 1950. Current geologic mapping is good and, if continued, will help solve many mining and exploration problems. Such mapping already indicates that ore is enveloped in sericite schist, biotite schist, and chlorite schist. These rocks are valuable indicators.

d. Mining: Stopes are between two and five meters in width. The cut-and-fill method of mining is used, with sink and float tailings utilized as filling. Small cars distribute the fill from the waste, and raise and move the ore to chutes spaced at 20-meter intervals. Workings in the sericite zones are held open with difficulty, and heavy timbering is necessary.

e. Milling: The flotation mill is a modern, efficient plant. The only serious deficiency noted was the transportation and dumping system over the coarse ore bin: small one-ton cars are detached and routed singly over a complicated switch system and dumped by hand in a rotary dump. Primary crushing by gyratory is followed by short-head cone crushers, but only one-half the crushing equipment is utilized. The pulp from the ball mill is conditioned and chalcopyrite floated first. Tailings from the copper circuit go to the pyrite section, and the pyrite is floated after conditioning with copper sulfate and hydrochloric acid. The copper concentrates are briquetted and sent to copper blast furnaces; pyrite concentrates go to the sulfuric acid plant. Pyrite cinder may be used for iron blast furnace feed.

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f. Smelting and Refining: The first process in smelting utilizes a vertical blast furnace, fired by coal and tapped from a Beehive annex. The matte may be moved in a ladle to the converters, or poured in molds when converter capacity is insufficient. The refinery treats blister copper in the conventional manner used by electrolytic refineries in the United States.

g. Natural Resources Section personnel made recommendations to the mine manager and mine technical personnel, as follows:

(1) Epidiabase should be sought in exploration, as existing maps show that the ore in part follows epidiabase dikes along their contacts with schist.

(2) Structural studies should be stressed a bit more, as the ore is in two zones of shearing, along the epidiabase zone. Indications of other favorable zones can be noted. The ore seems in part to be localized in the shearing along cross folds. The axial planes of these cross folds should be projected to intersect other zones of shearing.

(3) The surface should be remapped to locate favorable folds and possible continuations of the mineralized zone.

(4) Cross sections should be made.

(5) Scrapers, instead of cars, should be installed in the stopes.

(6) Larger (four-ton) cars, similar to the Granby type, should be installed in order to eliminate a transportation bottleneck that will develop when production is increased.

(7) Density in the flotation circuit should be increased from 22 percent solids to 35 percent solids.

(8) Precious metal losses in cupellation should be investigated.

(9) The possibility of replacing the copper blast furnaces with reverbatory furnaces should be studied.

HYDROLOGY

1. Water Resources Policy for the United States

a. Ir Walter C. Lowdermilk, visiting expert consultant on flood control-watershed management, has made available to officials of the Ministry of Construction and the Ministry of Agriculture and Forestry, Japanese Government, extracts from The Report of the President's Water Resources Policy Commission, Volume I, A Water Policy for the American People, embodying the water resource policy recommended for the United States. Ir Lowdermilk, who acted for the Commission as Chairman of the Committee on Basic Data, suggested

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to the Japanese representatives that certain features of the policy recommended for the United States might well serve as a pattern for a similar, critically needed policy for Japan. The extracted material supplied to the Japanese is attached to copies of the Weekly Summary for the attention of Civil Affairs regional personnel.

2. Flood Prevention, Flood Control, and Watershed Management in Japan

a. The following is a continuation of a series of articles on flood prevention, flood control, and watershed management in Japan which started in Weekly Summary No 265 and has continued weekly since that time. The material presented below continues from Weekly Summary No 275 the section entitled, "Flood Prevention, Flood Control, and Watershed Management Practices".

(5) Floods

(a) General: As brought out in earlier articles, the rapid runoff experienced in most areas of Japan causes sharp rises in river flow on the short steep rivers. The problem of rapid runoff is complicated by the torrential rainfall experienced on frequent occasions, accompanying typhoons or cold fronts and local disturbances called "hurricanes". During the course of such rains, runoff reaches such proportions that it might well be termed a "flash flood". Every gully, creek, and minor tributary becomes a torrent, often bringing down massive boulders and other debris in such quantity that the stream becomes a virtual mudflow. For this reason, the flood problem is not one requiring consideration of water alone. Agricultural areas may be seriously damaged by the debris load in the river channels which, if deposited on the farm lands, quite effectively removes them from production, in some instances permanently.

(b) Frequency and Cause: Historical data on floods are difficult to evaluate accurately. Records of floods during the early history of Japan, or any other country, are suspect because emphasis is given to floods in or near the centers of government while those in remote areas, important for planning purposes, are mentioned briefly if at all. Floods have been common in Japan through the centuries, as evidenced by the flood control works undertaken in very early times, a topic previously discussed in conjunction with the history of river development. The diversion of the Tone River to eliminate the flooding of Tokyo (Edo) was undertaken during the Tokugawa era as were numerous other flood control works. After the Meiji Restoration (1868) the flood record becomes somewhat more reliable, but the tendency to emphasize floods in the areas of political or economic importance is still present. Even up to the present, flood records do not become completely adequate because of variation in reporting procedure, but some measure of the flood problem may be obtained from a consideration of records of occurrence.

1 The Resources Council of the Economic Stabilization Board has prepared an unpublished series of notes on the history of flood control activities of the central government from 1873. Specific floods are

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noted in 1893, Chugoku District; 1896, Kanto, Kansai, Tohoku, Chubu, and Hokuriku districts; 1899, Shikoku District. No mention of the size of the floods is made, nor of the cause. That the intervening periods were not free from floods is apparent from the amount of interest in the subject between the recorded flood periods and from the frequency of floods in subsequent years.

2 A second report by the Resources Council, in this instance a published volume entitled Report on Meteorological Disasters in Japan 1/ lists all types of disasters, including earthquakes, "tsunami" (tidal waves), floods, and fires. A review of the volume for the purpose of determining the number and causes of floods has made possible a few generalizations. In abstracting the data an effort was made to eliminate all disturbances which affected only seacoast or harbor areas and to include only those which brought about flooding of an area. Because of the rather indefinite nature of some records, errors probably were made. No fair and equitable means of comparing one flood with another could be established in part because of the scarcity of information and in part because of the lack of uniformity in reporting. Comparison was made difficult by the fact that the records from which the report was obtained obviously become more and more complete as the present day was approached, except for the period during World War II. The reviewers list only 21 floods during 1900-09; 35, 1910-19; 79, 1920-29; and 129, 1930-39. However, the records showed a decrease in frequency 1940-47 when only 47 floods were listed.

3 Of the 311 floods listed for the 1900-47 period, 114 were caused by typhoons, 193 by torrential rains, and two by snow melt. The detailed breakdown is given in the table below. It will be noted that the peak month for typhoon generated floods was August with 40, while the rain storms which caused floods were most frequent in July, with 41. Floods resulting from all causes were recorded as being at a maximum in August with 76, followed by July with 60, and September with 59.

CAUSES OF FLOODS IN JAPAN, 1900-47

Month	Flood Cause			
	Typhoon	Rain a/	Snow	Total
Jan	0	6	0	6
Feb	0	4	0	4
Mar	0	4	0	4
Apr	0	15	0	15
May	0	12	2	14
Jun	4	29	0	33
Jul	19	41	0	60

(Cont'd)

1/ Report No 17, Resources Council, Economic Stabilization Board, 15 July 1949, edited by the Central Meteorological Observatory, Tokyo.

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CAUSES OF FLOODS IN JAPAN, 1900-47 (Cont'd)

Month	Flood Cause: Typhoon	Rain a/	Snow	Total
Aug	40	36	0	76
Sep	32	27	0	59
Oct	18	7	0	25
Nov	2	7	0	9
Dec	0	6	0	6
TOTAL	114	194	2	311

a/ Rain accompanying thunderstorms, cold fronts, and other atmospheric disturbances not related to typhoons.

ITEM ATTACHED TO COPIES OF THE WEEKLY SUMMARY FOR THE ATTENTION OF CIVIL AFFAIRS REGIONS

1. Water Resources Policy for the United States

a. Extracts from The Report of the President's Water Resources Policy Commission, Volume I, A Water Policy for the American People, embodying the water resource policy recommended for the United States, are attached to copies of the Weekly Summary sent to Civil Affairs Regions, as Item 1.

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EDITORIAL AND PRODUCTION BRANCH

1. Preliminary Study Completed

a. Preliminary Study No 45, Forest Insect Control in Japan, February 1951.

2. Preliminary Study in Preparation

a. Preliminary Study No 46, Japanese Fisheries Administration, March 1951.

3. Press Items

a. NR Releases

"Accounting Consultant Joins NRS" (John C. Essene)

b. Published Items

"Presented Commendation" (W. C. Herrington)

"Accounting Expert Here" (John C. Essene)

"Conservation for Peace" (Lt Col H. G. Schenck)

Hubert G. Schenck

HUBERT G. SCHENCK
Lt Col CE
Chief, Natural Resources Section

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CONVERSION FACTORS
METRIC TO ENGLISH - JAPANESE TO ENGLISH

Metric To English

Weight

1 gram	= 0.035 ounce
1 kilogram	= 2.205 pounds
1 metric ton	= 2,205 pounds
	= 1.102 short tons
	0.984 long tons

Volume and Capacity

1 liter	= 2.113 pints
1 cubic meter	= 35.313 cubic feet
1 cubic meter	= 282 board feet
1 kiloliter	264.178 U.S. gallons
	(6.29 barrels petroleum
	of 42 U.S. gallons each)

Length

1 meter	= 3.281 feet
1 centimeter	= 0.394 inch
1 kilometer	= 0.621 mile
1 millimeter	= 0.039 inch

Area

1 square meter	= 10.764 square feet
1 hectare	= 2.471 acres

Japanese To English

Weight

1 koku rice	= 330.69 pounds
1 kan	= 8.267 pounds
1 momme	= 0.132 ounce
1 kin	= 1.323 pounds

Volume and Capacity

1 koku rice	= 5.010 66-pound bushels
1 koku wheat	= 5.029 60-pound bushels
1 koku naked barley	= 5.015 61-pound bushels
1 koku barley	= 4.995 48-pound bushels
1 koku lumber volume	= 120 board feet
1 koku log volume	= 80 board feet
1 koku liquid	= 6.370 cubic feet
	= 47.654 gallons
1 koku solid volume	= 9.827 cubic feet
1 soseki koku stacked volume	= 9.827 cubic feet
1 go	= 11.008 cubic inches
1 shaku	= 0.610 fluid ounces
1 sho	= 0.4765 U.S. gallon

Length

1 sun	= 1.193 inches
1 shaku	= 0.994 foot
1 bu	= 0.119 inch

Area

1 cho	= 2.451 acres
1 tan	= 0.245 acre
1 tsubo	= 35.583 square feet
1 se	= 0.0245 acre
1 square shaku	= 0.988 square foot

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NATURAL RESOURCES SECTION

WEEKLY SUMMARY

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1. Address on Conservation for Peace

a. The significance of conservation in Japan was the topic of an address given by Lt Col Hubert G. Schenck, chief, Natural Resources Section, at the meeting of the America-Japan Society 23 February 1951. His address follows:

CONSERVATION FOR PEACE

Five thousand years ago primitive people, few in number, inhabited these islands. They eked out a meagre existence by hunting in the hills and fishing in the bays. Floods bothered them little, for they had no paddy fields to be destroyed, no railroads or highways to be washed away, no hydroelectric reservoirs to be filled with debris. Lacking metal tools, they had no way to fell the trees in the forests. They fought continuously for subsistence survival, and they lived in fear not so much of their fellow Neolithic man as of Nature.

Today nearly 84 million people inhabit the same islands. Since the introduction of farming during the first millennium before Christ, about 15,000,000 acres of land have been placed under cultivation; today about one-half of the population depends upon the soil for existence. Since the Meiji restoration in 1868, Japan has seen the introduction of the railroad and telegraph, compulsory universal education, and modern industries, and a vast expansion of trade and commerce.

As, year by year, the country's industrial and commercial development increased and the great rise in population became more marked, the pressure upon the utilization of the domestic resources became more and more pronounced. These factors brought to the fore the urgent need to conserve the material and human wealth of the nation. This has been especially true all through the decades between the latter part of the 19th century and our day. Now it is all too obvious to anyone concerned with the welfare of Japan that the country is confronted--as never before--with the urgency to husband in the most effective way its own resources in the water, in the hills, and in the valleys. In the years immediately ahead, Japan must bend every effort to protect her natural resources, of which she has little, and her human resources, of which she has an abundance.

I welcome, therefore, this opportunity to present my own views to this distinguished audience and to solicit from you ideas on how we can best meet these problems. That they are vitally important may be judged from the fact that leaders of all forward looking nations are deeply concerned with them. Even in a country as richly endowed as the United States the battle cry for conservation has been heard throughout the land since about the turn of the century. Certainly this should be true of Japan.

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You may well ask, as have several of my friends, "What do you mean by conservation?" I was astonished by the question at first, so I sought the counsel of my esteemed friend, Dr H. Takeda, requesting him to give me the Kanji for the word "conservation". To my surprise, he told me that no single character exists. "Hoji" 1/ means to protect or to keep; this is the word a farmer would use when he tells how he and his ancestors have maintained soil fertility for hundreds of years. "Hogo" 2/ is the word for protection, as in maintaining the beautiful scenery in one of your national parks. "Hozon" 3/ is to keep; thus, when one speaks of forest conservation he says "shinrin hozon". "Isso noritsuno takai riyo-ho" 4/ is the expression for more efficient utilization. How well now I understand the difficulty my staff has had during the past five years explaining to the Japanese a commonly used definition of conservation as "keeping in a safe or entire state and preventing waste of the resources of man's physical environment".

Furthermore, the English word itself has a wide area of meaning. Prevention of the loss of fertile top soil, selective cutting of forests, irrigation of arid regions, protection of wild life, fixation of sand dunes, efficient mining operations, and prevention of over-fishing are among the activities which have been cited by one authority or another as examples of conservation. With such a range of definition, how could it be possible with one ideograph to express a complex concept?

The Japanese farmers for generations have applied sound conservation practices. They have obeyed what Dr Walter C. Lowdermilk, a world-famous authority temporarily on duty with the Natural Resources Section, calls the 11th Commandment:

"Thou shalt inherit the holy earth as a faithful steward conserving its resources and productivity from generation to generation. Thou shalt safeguard the fields from soil erosion, thy living waters from drying up, thy forests from desolation, and protect thy hills from overgrazing by the herds, that thy descendants may have abundance forever. If any shall fail in this stewardship of the land, thy faithful fields shall become sterile stony ground or wasting gullies, and thy descendants shall decrease and live in poverty or perish from off the face of the earth."

Specialists who have studied the history of Japanese farming are impressed by the successful maintenance of soil productive capacity on fields that have been in continuous cultivation for much more than a thousand years. In countless valleys throughout the Home Islands the conservation and utilization of water has been developed to a degree equalling or surpassing practices elsewhere in the world. Such cases of conservation in the "Hoji" sense serve as a beacon light of hope to neighboring countries which are confronted with similar problems.

1/ 保 持
2/ 保 護
3/ 保 存
4/ 一層能率の高い利用法

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Next let me give an example of conservation in the "Hogo" sense by telling a story of fur seals ("ottosei"). Unsavory indeed is the beginning of the tale, and I shall omit references to the hardship, cruelty, murder, shipwreck, blood, and gore which marked the early course of fur sealing in the north Pacific. The uncontrolled slaughter was finally ended by international agreement, an agreement which was possible only because the animals had decreased so markedly that pelagic sealing was no longer a profitable business undertaking. The four-power Fur Seal Convention was signed by the United States, Great Britain, Russia, and Japan in 1911. During its 30-year life span this was one of the most successful of all international conservation treaties. The results obtained under its provisions demonstrated how a vanishing species can be saved from extermination by rigid protection and developed into a lucrative industry by wise management. The 1911 treaty was abrogated by Japan in 1941, and subsequent international discord has prevented the resumption of negotiations among the four powers concerned.

Forests too are a renewable resource, and an essential one. Japan cannot do without the products of the forests, yet failure to practice conservation threatens to destroy her domestic source of lumber, pulpwood, and charcoal. The situation in some respects is parallel to that of the fur seals when more animals were killed each year than were born. Overcutting by man and infestation by beetles together remove and destroy each year far more coniferous timber than is grown. Excessive exploitation is depleting the growing stock which is necessary for maximum sustained yields in merchantable timber. In 1950 alone the volume of timber killed by bark beetles was sufficient to supply Japan's pulpwood requirements for four months--more than enough to supply the entire annual need for railroad ties if the wood could have been salvaged for these purposes.

Fortunately many influential Japanese realize that good forestry practices will help the nation to meet the wood requirements. The post-Surrender reforestation program at long last is progressing satisfactorily. The government embargo on the export of forest products is helping to reduce the drain. An energetic campaign is underway to control the destructive insects. The task ahead is to convince all private owners that they must follow this rule: "Do not cut more wood than nature can replace through growth".

Up to this point, the examples I have given have been chosen to show that the management of a renewable resource on a sustained yield basis is conservation. When we next consider a non-renewable resource, such as iron or manganese or petroleum, the word is more difficult to explain. Insuring the maximum efficient recovery of petroleum from an oil sand by applying methods based on proved engineering principles is conservation; the prevention of waste in metallurgical plants is conservation; efficiency in processing all raw materials is conservation. Let me illustrate this concept by a statement concerning petroleum. During the last three decades Japan has never produced more than about 15 percent of her requirements; every kiloliter produced locally, however, reduces the need for imports. In the past, petroleum companies have produced the nation's oil with little or no regard

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to proper production practices, so that much of the oil that should have been made available by lifting from wells still remains trapped in the ground. Realization of this basic error has prompted the inclusion of conservation measures in the proposed new Petroleum Resources Development Law, in order that the maximum efficient recovery of oil will be attained in the future. Such measures will operate for the ultimate benefit of the oil producers, as well as that of the nation as a whole. Japanese petroleum engineers now are also beginning to apply the relatively new technique known as "secondary recovery", in order to recover more of the oil that still remains in the reservoirs and that cannot be extracted by normal methods of lifting from the oil wells. Increased recovery by better technology, therefore, is conservation in the sense of "isso noritsuno takai riyo-ho".

If time permitted, numerous other examples might be given to show the significance of conservation in stretching Japan's supply of materials. Japan today must be more seriously concerned with conservation than ever before in her history. In order to reduce the amount of imported raw materials, the Japanese must do more than merely talk about it, they must put conservation into effect. No longer can this nation afford to over-exploit her resources; no longer can she draw on colonies for supplies; no longer can she excuse wasteful processing. The limited resources of the Home Islands probably can never support an over-populated industrial nation but they can be--they must be--developed and managed carefully by a conservation-minded public. The inventive genius of the researcher must be called upon to further this objective and to discover substitutes for commodities now in short supply.

Calamitous may be the consequences of failure to apply sound management principles in a mountainous country which is subject to heavy rainfall. Do you realize that the annual damage from floods in Japan approximates the total amount earned from exports during 1949? Just imagine: Flood damage in Japan, a nation smaller than the State of California, is four times the damage in all of the United States. Of course, man has not yet learned to control the primary cause of floods--the weather. Man can only reduce the amount of damage. Protection forests on watersheds, check dams in the upper courses of streams, levees in the lower courses, and contour agricultural cultivation are some of the preventive measures which can help to reduce the appalling toll now being taken by flood waters.

Yes, the natural resources of this or of any other nation must be carefully managed, but the process must not end there. Equally important, the people must conserve their fundamental human rights and privileges. In the future this problem will face the Japanese people in many aspects. Greedy persons, like the fur sealers of the past century, may try to kill your gains in democracy. Others, like the beetle, may try to destroy by boring from within. Some vested interests might like to clearcut the young trees of equal rights in the forest of government by the people and for the people. Like the oil companies who, through lack of knowledge of recent technological development, have left in the ground much of the oil that could have been extracted

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by rational production methods, there will be those who, in the rush of economic rehabilitation, will allow the prospect of quick returns to overshadow the more bountiful ultimate return that results from proper conservation control. These too are likely to forget the equally important social rehabilitation that must go hand in hand with economic rehabilitation. I most sincerely hope that the Japanese will accept the responsibilities of citizenship necessary to maintain social stability within the nation. Otherwise the balance will be upset and conservation in neither material nor spiritual matters will be possible. Beyond all doubt, conservation for peace depends upon a balance between nature on the one hand and economic and social values on the other.

I have tried to discuss conservation in both the material and the spiritual sense, in the effort to suggest that effective conservation depends upon many people in many places. It also depends upon the people's sense of well being and voluntary responsibility to the community and nation as a whole. A wise government will relentlessly pursue these aims. Stable communities in a democratic society must express their desires to their government. Scientists who carry on research in an environment of academic freedom, and who can publish uncensored reports of the results they obtain, can and should contribute to a conservation program. Diplomats must negotiate treaties to protect the productivity of international waters--and do their part in the larger struggle for human rights. Legislators must prepare and appropriate agencies must enforce modern laws. Industrialists must appreciate the need for conservation and support the recommendations of their technical staffs, as well as respecting the human needs of the people they employ. In fact, it is up to us all, it is up to individual citizens everywhere to decide whether we shall have a ravaged earth where the inhabitants fight for economic survival or whether we shall conserve our resources and human rights to mutual advantage in a peaceful world.

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LAND REFORM

1. Land Consolidation Procedures and Progress of Land Consolidation Work During 1950

a. Starting in 1950 the Ministry of Agriculture and Forestry launched a five-year plan for promotion of land consolidation in Japan. The details of the plan are summarized in the following table.

FIVE-YEAR PLAN FOR PROMOTION OF LAND CONSOLIDATION

Year	Number of Projects to be Initiated	Area to be Benefitted (cho)
1950	920	184,000
1951	1,260	230,750
1952	2,880	515,500
1953	3,115	467,000
1954	2,600	317,750
TOTAL	10,775	1,715,000

b. Under the Land Improvement Law, Law No 195 of 1949, land consolidation projects may be initiated and carried through by agricultural land commissions, land improvement districts, or agricultural cooperative associations. The procedures are parallel for the three types. Those outlined in the following table apply specifically to projects undertaken by land commissions, which comprise more than 90 percent of the total.

PROCEDURES FOR INITIATION AND COMPLETION OF LAND CONSOLIDATION PROJECTS

Step	Action
1	(Optional) Prefectural authorities may survey an area and decide to propose to a land commission that a project be initiated.
2	(a) Two or more promoters propose that an area consider a consolidation project or (b) the local land commission decides to propose consideration of a consolidation project.
3	One-half of those to be affected by the project must vote to consider it.

(Cont'd)

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PROCEDURES FOR INITIATION AND COMPLETION OF
LAND CONSOLIDATION PROJECTS (Cont'd)

Step	Action
4	The local land commission drafts a preliminary consolidation plan.
5	Two-thirds of those to be affected must vote to accept the plan drafted by the Commission.
6	The plan so accepted must be publicly displayed for 60 days, and objections heard by the local land commission.
7	The local land commission decides within the next 60 days whether or not to adjust for objections raised.
8	Persons not satisfied with local land commission adjustments may appeal within 10 days to prefectural commissions.
9	Prefectural commissions must resolve appeals within 60 days.
10	The prefectural governor must consider and approve the consolidation plan in order to validate it.
11	Actual operations under the plan may be undertaken.

c. During 1950 a total of 923 consolidation projects were started to benefit an estimated 202,925 cho. Of this area, approximately 65 percent is paddy land, 31 percent is upland, and the remaining four percent is grassland or pasture. Progress of these projects as of 1 January 1951 is shown in the following table.

PROGRESS OF LAND CONSOLIDATION PROJECTS INITIATED DURING 1950
As of 1 January 1951

Status	Number
Initiated in accord with Step 1 (no further action)	33
Initiated in accord with Step 2 (no further action)	37
Completed through Step 3	672
Completed through Step 5	114
In Steps 6-9	20
In Step 10	13
Completed through Step 11 except for title registration	10
Status unknown	23
TOTAL	923

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AGRICULTURAL COOPERATIVE ASSOCIATIONS

1. Liquidation of Nogyokai and Practice Associations as of 31 January 1951

LIQUIDATION OF NOGYOKAI AND PRACTICE ASSOCIATIONS
As of 31 January 1951.

Type	Local	Prefectural
Nogyokai		
Dissolved	10,721	46
Transfer of assets approved	10,624	46
Registration of assets transfers completed	8,701	20

Type	Agricultural	Sericultural
Practice associations		
Dissolved	144,596	34,450
Liquidation completed	144,596	34,450

SOURCE: Agricultural Cooperative Assn Division, Ministry of Agriculture and Forestry.

FOOD POSITION AND COLLECTION

1. Collection of 1950 Staple Crops as of 20 February 1951

COLLECTION OF 1950 STAPLE CROPS AS OF 20 FEBRUARY 1951
(1,000 metric tons brown rice equivalents)

Crop	Cumulative Amount Collected	Delivery Quota	Percent of Quota Fulfilled
20 February 1951			
Rice and rice subs	4,284.4	4,326.4	99.0
Wheat and barley a/	1,248.4	1,244.7	100.3
Total	5,532.8	5,571.1	99.3
20 February 1950			
Rice and rice subs	4,385.5	4,481.8	97.9
Wheat and barley a/	1,218.4	1,000.0	121.8
Total	5,603.9	5,481.8	102.2
20 February 1949			
Rice and rice subs	4,617.8	4,592.9	100.5
Wheat and barley a/	974.3	950.5	102.5
Total	5,592.1	5,543.4	100.9

a/ As of 31 January; collection reported at end of month only.
SOURCE: Food Agency, Ministry of Agriculture and Forestry.

2. Collection of 1950 Rice and Rice Substitutes as of 20 February 1951

a. Collection of 1950 rice and rice substitutes by percent of quota and quantity as of 20 February 1951 are shown in the charts on page 11 with comparisons for 1949 and 1948.

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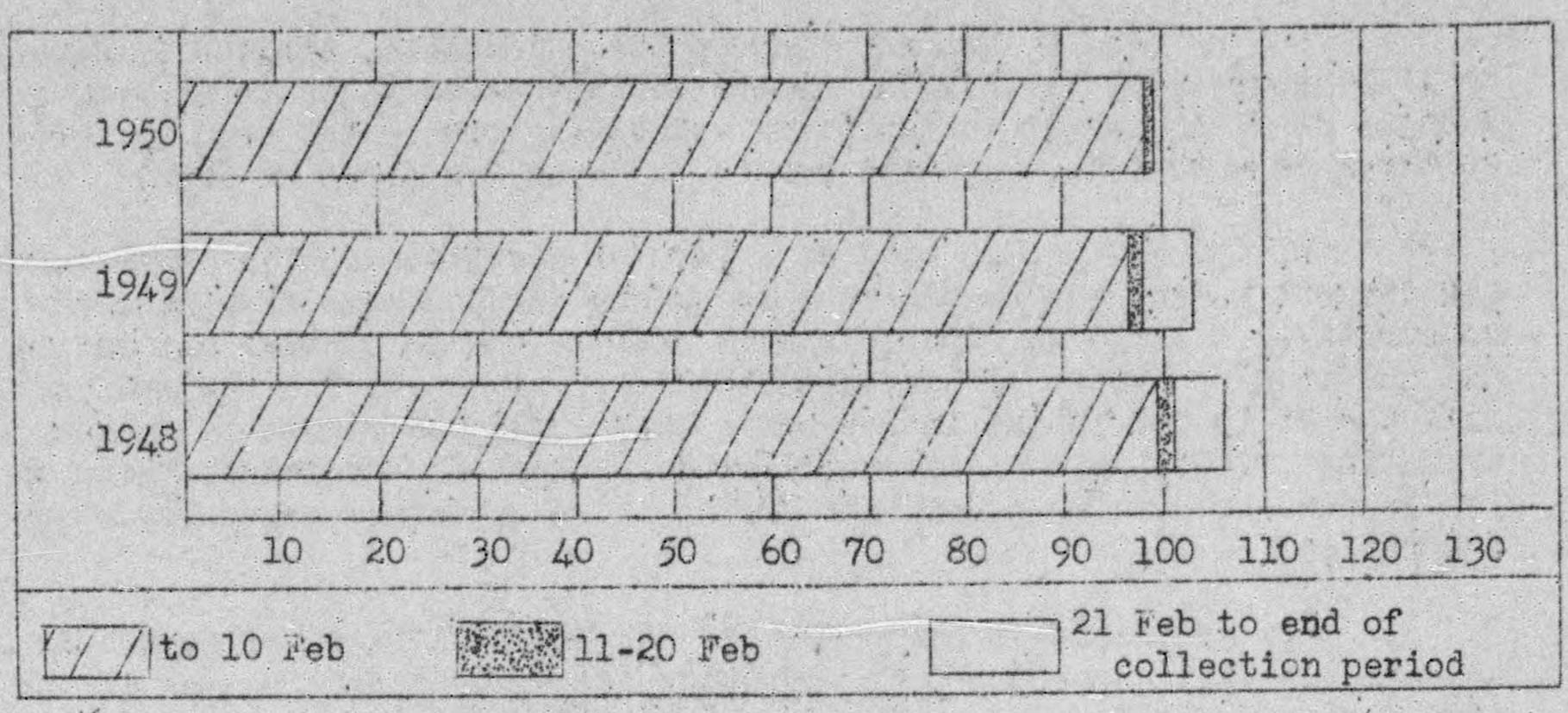
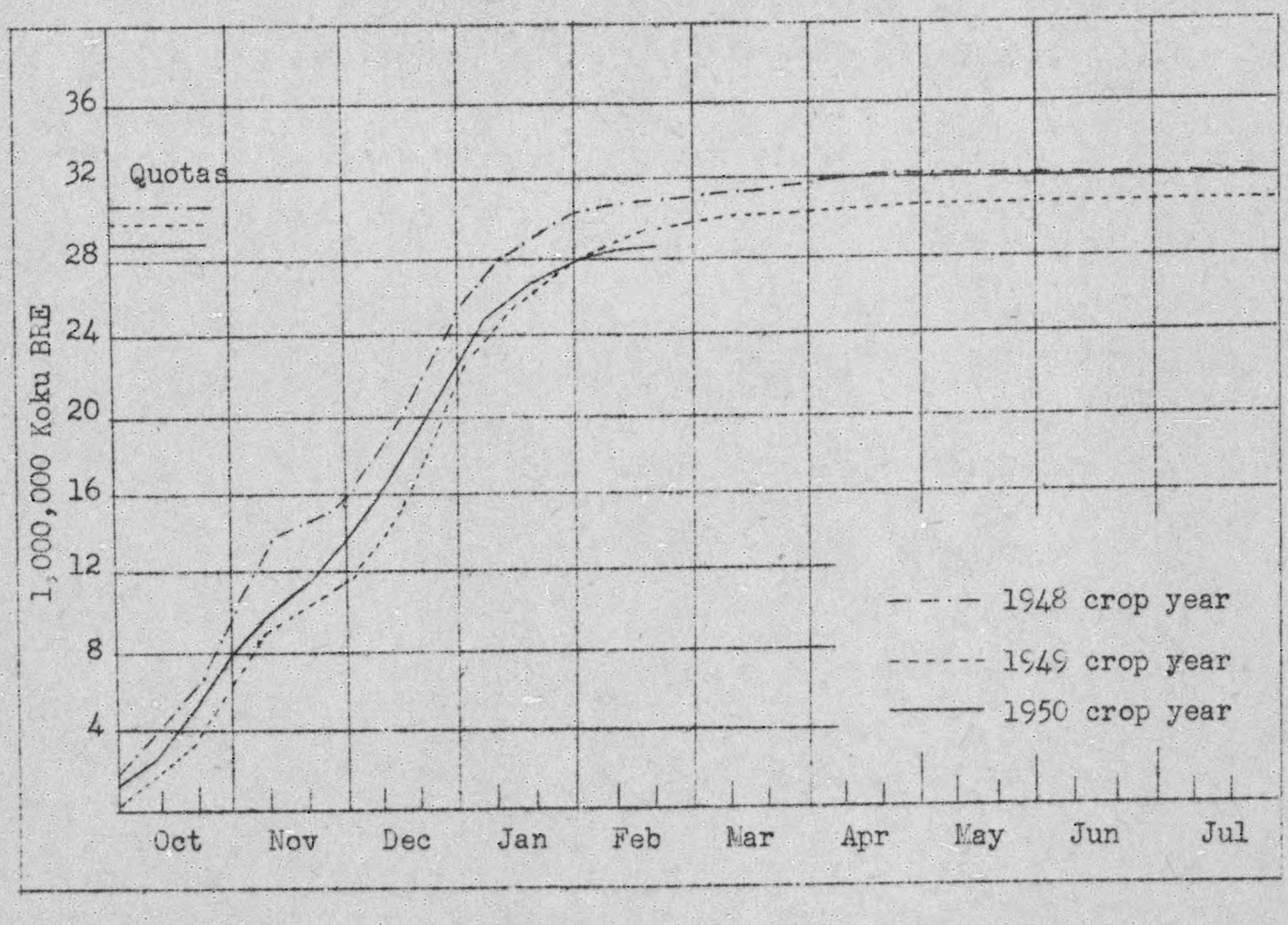
COLLECTIONS OF 1950 RICE AND RICE SUBSTITUTES AS OF 20 FEBRUARY WITH COMPARISONS FOR 1949 AND 1948

Percent of Quota Collected



Cumulative Collection by 10-Day Periods



SOURCE: Food Agency, Ministry of Agriculture and Forestry.

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GENERAL

1. Visiting Expert on Cooperative Accounting

a. Mr John C. Essene, Minneapolis, Minnesota, arrived in Japan on 18 February 1951 as visiting expert consultant on the Natural Resources Section staff to assist in improving accounting procedures used by agricultural cooperatives. He will remain in Japan for about 90 days.

b. Mr Essene, as head of a firm of certified public accountants for several years, has specialized in accounting problems of Minnesota cooperatives. While in Japan, he will analyze the accounting and internal auditing practices of agricultural cooperatives and federations and will assist in developing improvements which will contribute to greater operating efficiency. He also will study and prepare recommendations on the procedures used by government officials in auditing cooperatives and federations.

c. Mr Essene is a graduate of the University of California in Los Angeles where he majored in economics and accounting. He was in the Army during World War II and in 1946 was stationed in Tokyo as an officer in General Headquarters, Supreme Commander for the Allied Powers.

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GENERAL

1. Minister of Agriculture and Forestry Issues Statement on The Economic Crisis Facing Japan's Coastal Fishermen and a Five-Point Program for Its Solution

a. The Minister of Agriculture and Forestry has issued a statement on the five-point program for meeting the economic crisis facing Japan's coastal fishermen. This program was discussed in a recent press statement made by the chief of Fisheries Division, Natural Resources Section (see Weekly Summary No 279). A translation of the Minister's statement follows:

"A statement was made public by the Natural Resources Section of the General Headquarters of the Supreme Commander for the Allied Powers today concerning 'The Economic Crisis Facing Japan's Coastal Fishermen and a Five-Point Program for Its Solution'.

"This program clarifies that although the physical rehabilitation program of Japan's fishing industry has been largely accomplished, the solution of the economic crisis now facing Japan's coastal fishermen will require an immediate preparation of a drastic long-range program, and the enforcement of the following Five-Point Program is strongly requested to meet the crisis as the minimum requirements:

Point 1. Stop further expansion in overfished fisheries and accomplish needed reduction in fishing intensity.

Point 2. Develop sound conservation regulations for various fisheries.

Point 3. Establish strong departments in the Fisheries Agency and prefectures for enforcement of fishery regulations.

Point 4. Increase the fishermen's profits.

Point 5. Establish a sound financing program.

"And it is pointed out that this Five-Point Program will require much careful thought and planning to work out the practical details, and it is emphasized that these measures must be placed all round in effect as 'a single well-coordinated program'.

"This year appears to be a very important year in Japan's fishing industry because outside of the country our fishing industry may

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be allowed to return to international fishing grounds through the peace treaty close at hand and the epoch-making Fisheries Reform will be accomplished at home.

"At the beginning of such an important year, the General Headquarters favored us with a very opportune Five-Point Program. Let me express my hearty thanks for the great kindness of the General Headquarters, and at the same time let me appeal to our fishermen throughout the country and to all our people over the country for your understanding and cooperation in this program. We shall all be determined to expedite various measures strongly along the line of this program and to establish a sound organization of fishing industry as a link in the chain of Japan's self-supporting policies."

FISHERIES RIGHTS

1. Fisheries Rights Reform Information and Education Program

a. The Fisheries Agency, Ministry of Agriculture and Forestry, notified Natural Resources Section that the wall newspaper "The Fishing Grounds Planning is the Basis of the Fisheries Reform" was shipped to prefectures 15 February 1951. This wall newspaper is part of the information and education program carried on by the Fisheries Agency to assist in the implementation of the fisheries rights reform program. The wall newspapers are to be distributed to municipalities, fisheries cooperatives, secondary and elementary schools, Sea Area Fisheries Adjustment Commissions, and fishermen for posting in public places. The distribution by prefectures follows:

DISTRIBUTION OF WALL NEWSPAPER ON FISHING GROUNDS PLANNING

Prefecture	Number of Copies	Prefecture	Number of Copies
Hokkaido	3,585	Ishikawa	1,629
Aomori	1,658	Fukui	1,461
Iwate	1,169	Yamanashi	426
Miyagi	1,241	Nagano	2,506
Akita	2,289	Gifu	2,676
Yamagata	1,452	Shizuoka	1,788
Fukushima	784	Aichi	1,507
Ibaraki	2,392	Mie	1,923
Tochigi	911	Shiga	978
Gumma	458	Kyoto	1,462
Saitama	373	Osaka	729
Chiba	1,811	Hyogo	2,451
Tokyo	907	Nara	358
Kanagawa	983	Wakayama	1,344
Niigata	1,517	Tottori	1,523
Toyama	812	Shimane	2,135

(Cont'd)

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DISTRIBUTION OF WALL NEWSPAPER ON FISHING GROUNDS PLANNING (Cont'd)

Prefecture	Number of Copies	Prefecture	Number of Copies
Okayama	1,150	Saga	985
Hiroshima	2,199	Nagasaki	2,851
Yamaguchi	1,546	Kumamoto	1,643
Tokushima	834	Oita	1,380
Kagawa	1,207	Miyazaki	867
Ehime	1,910	Kagoshima	1,795
Kochi	1,220		
Fukuoka	1,253	TOTAL	64,000

AQUATIC PRODUCTION

1. Catch Statistics of Third Mother Ship-Type Tuna Expedition

a. Final reports on amount and composition of catch on the third tuna expedition have been compiled by the Fisheries Agency after unloading was completed at various landing ports in Japan.

b. The expedition consisted of a 500 gross ton mother ship and six 140 ton class catcher boats. It operated from 1 December 1950 to 7 January 1951 in the vicinity of 4°N latitude and 137°E longitude.

c. Total catch was 589,653 pounds, of which 463,429 pounds were tuna and 85,104 pounds were spearfishes. The mother ship, Tenryu Maru, brought 68,938 pounds back to Japan in frozen condition, and the remainder of 520,715 pounds was transported in ice in the holds of the catcher boats. All of the catch was sold for consumption in Japan.

d. The fish were classified into four grades by the receiving agencies for retail purposes. These grades give an indication of the condition of the fish and the efficiency of the expedition as regards preservation of the catch. Breakdown of the total catch by grades is 44 percent Class A, 29 percent Class B, 12 percent Class C, and 14 percent Class D. All grades are edible except some of Class D, which is used for fertilizer. The condition of the catch varied with the insulation and refrigeration equipment on the catcher boats. The best load was delivered by the Seisho Maru, which had a record of 75 percent Class A fish and only one percent Class D. The Azuma Maru No 11 delivered the poorest load, consisting of 21 percent Class A and 39 percent Class D. The Fisheries Agency maintains records of performance of the various catcher boats with the intention of eliminating the more inefficient boats from participation in future expeditions.

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e. The following table shows the catch by species.

LANDINGS OF THIRD TUNA EXPEDITION BY SPECIES

Species	Catch (pounds)
Tuna	
Yellowfin tuna	395,889
Big-eyed tuna	58,279
Albacore	8,027
Skipjack	1,234
Total	463,429
Spearfish	
Black marlin	72,609
White-striped marlin	5,493
Striped marlin	190
Sailfish	3,156
Broadbill swordfish	3,656
Total	85,104
Sharks	37,025
Others	4,095
TOTAL	589,653

SOURCE: Fisheries Agency, Ministry of Agriculture and Forestry.

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FORESTRY DIVISION

GENERAL

1. NR Representative Addresses National Prefectural Foresters' Annual Meeting

a. The National Prefectural Foresters' Annual Meeting was held at Ueno, Tokyo, on 22 February. A representative of Natural Resources Section spoke to the group, which comprised approximately 250 foresters. Three Japanese forestry leaders also addressed the meeting, emphasizing the need for national planning and reforestation and the importance of a sound national forest policy.

b. Following the address by the Natural Resources Section representative, questions were raised by the foresters concerning timber imports and improvement in the land reclamation program. The group acknowledged that Japan cannot delay putting sound forestry practices into effect. They recognized not only that some reduction in cut will be necessary in the initial stages of implementing a sound forest management program, but that furthermore sound action programs must be effected this year because of Japan's rapidly deteriorating forests. Several Japanese representatives stated that undoubtedly end-use controls would have to be instituted to insure the highest use of wood and that further research should be encouraged in order to eliminate the extensive waste in processing.

c. The Natural Resources Section representative addressed the meeting as follows:

"Since the end of hostilities, there has arisen a general recognition of the problems confronting foresters and of the services that can be rendered by foresters. You have proven by your actions that professional foresters make capable administrators. I am particularly glad to see that the Forestry Bureau has been raised to an agency and that in most prefectures the forester enjoys the same status as his agricultural associate. I am glad, too, that Japan, like other countries whose forest problems are urgent, is placing more and more responsibility for administration and policy in the hands of men technically trained in forest work. This is as it should be.

"As a matter of fact, you have done too thorough a job insofar as increasing the supply of forest products is concerned. In your desire to satisfy the demand for wood, you have dealt over-generously with the forest resource. Unrestricted cutting in the private forests has led to widespread denudation, soil erosion, serious floods, and now a shortage of timber. The problem now confronting both you and Japan is how to restore the private forests and increase the production of wood.

"Japan has reached the point where it can no longer delay requiring all forest owners to set about restoring their forests to maximum

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productivity and managing them on sustained yield. Liquidation of the remaining stands must be stopped and improved cutting practices put into effect.

"It is part of your professional responsibility to convince the wood users that in this way and this way alone can they hope for a continuing supply of raw material. It is part of your professional responsibility to convince the forest owner associations that unless forest management is made compulsory, their organizations will cease to exist within five years or less and all the aspects of Japan's economy that depend on wood products will be headed for bankruptcy.

"To avoid this, there are certain fundamentals that I believe should be included in the Forest Law. First, it should be based on a firm statement of forest policy which establishes the responsibility of the central government for the protection and wise utilization of the forest resources and recognizes that the public welfare requires the rehabilitation, protection, and continuous management of forest lands for the purpose of conserving water, prevention or mitigation of floods and control of soil erosion, improvement of wildlife and recreation, and provision for a continuing and increasing supply of forest products essential to the economy of the country.

"Second, the Forest Law should provide for managing private forests on a sustained yield basis. The reduction of cut on private forest land to a volume equivalent to growth will not be made voluntarily by forest owners because it will mean present sacrifices for the public welfare. Only the central government can establish and maintain long-range, comprehensive forest development programs designed to contribute the maximum possible to the public welfare. Central government supervision of the management of private forests will be ineffective, however, unless supported by provisions in the law which (1) prohibit clear-cutting of immature stands but encourage their periodic thinning as silviculturally necessary to maintain an optimum rate of growth, (2) prohibit clear-cutting of mature stands on steep slopes, (3) require partial cutting methods of harvest on steep slopes to maintain an adequate forest cover as protection from erosion, (4) require reforesting of allowable clear-cut areas immediately after cutting, and (5) authorize regular central government field inspection of private forest operations to assure satisfactory implementation of the Forest Law and expenditure of subsidies.

"In the administration of such a law, there are certain opportunities you cannot afford to overlook. The simple practice of thinning the timber stands would largely supply the immediate demand for pulpwood, mine props, railway ties, and telephone poles. Compulsory application of sound forestry practice would reverse the present trend toward forest degradation and start them toward full recovery. In a relatively short period of time, the entire wood requirements of the nation could be met.

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"But let me emphasize above all else the fact that compulsory management of private forest lands is the very essence of this law. Unless that provision is enforced without fear or favor and with absolute professional honesty, there is little hope either for the forests of Japan or for the forest owner associations or for the profession of forestry.

"I realize as well as any of you that it is not an easy thing to withstand the pressures that are brought upon you by a wood-hungry industry. But the forests must be made to serve the national welfare and foresters must broaden their horizon beyond the demands of the individual owners. You must learn to say 'No' when the greater interest of the nation is at stake, for your loyalty from beginning to end must be to the national welfare.

"I am not pointing out to you any easy way. There is no easy way. Yours is a situation that must be met with courage and a clear knowledge that the forester has but one duty--to see to it that his forests render their highest benefits to the nation as a whole.

"One thing more. Today Japan is at the crossroads with respect to its forest resource. It can take the steep courageous road that leads up, to restore the forests and maximize growth. Or it can take the road downhill to forest exhaustion. But decide it must--and soon. To hesitate, to delay, is failure in itself. And on you foresters may depend to a very great extent what road Japan will take. It is a very grave responsibilty. Be equal to it !"

RESOURCES

1. Preliminary Study on Forest Insect Control in Japan

a. Natural Resources Section Preliminary Study No 45, Forest Insect Control in Japan, published in February 1951, was written by Mr Robert Furniss, forest entomologist and visiting expert consultant in Forestry Division, Natural Resources Section. The preliminary study is based upon observations of the pine forests of Japan made by the writer in two visits to Japan, the first in 1949-50 and the second in 1950-51. The study reviews the progress and accomplishments which were made during the year's interim, subsequent to the writers initial recommendations made in January 1950. These accomplishments, together with suggestions for improvements still needed, are listed in Weekly Summary No 274.

b. The preliminary study describes the infestation situation during 1949-50, gives in detail the progress and problems of forest insect control during 1950-51, and makes additional recommendations for improving the forest insect control program in the future. Law No 53, Law

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for Exterminating and Preventing Pine Bark Beetles and Other Similar Borers, and Other Destructive Forest Pests and Diseases, appears as an Appendix to the study. This insect control law was promulgated 31 March 1950.

c. The following additional recommendations were made by the visiting expert consultant after his second comprehensive examination of the pine forests of Japan to improve further the pine bark beetle and other forest pest control programs:

(1) Such changes in the forest pest control law as may be necessary should be made slowly and only after the application of the law in its present form has been fully tested.

(2) Subsidies from the central government for bark beetle control should be kept to the minimum compatible with the general welfare of the people at large. Subsidies should not be expended for trivial or purely local projects.

(3) The staff of the Pine Bark Beetle Control Office should be brought up to its full complement, and adequate funds provided to insure the proper planning, supervision, and conduct of control projects upon which funds of the central government are spent.

(4) Survey and control activities on the national forests in general should be investigated, and, where necessary, action should be taken to raise the quality of the work at least to the level of that in the more enlightened prefectures.

(5) The use of airplanes for detection and delineation of forest insect outbreaks should be investigated when the operation of airplanes for civil purposes becomes possible in Japan.

(6) Survey and control measures in most prefectures should be improved still further, especially in Okayama, Nagasaki, and Yamaguchi prefectures. The procedures developed in Kagoshima and Miyazaki prefectures should be studied by prefectures in need of improvement.

(7) Comprehensive research should be undertaken to increase the effectiveness and decrease the costs of direct control. Special emphasis should be given to the problem of determining which species of insects are really destructive and which are only secondary. Once that information is available, control should be restricted to the destructive species.

(8) Research should be undertaken to develop methods for the lasting control of bark beetles and other forest insects through improved forest management practices and thereby reduce the necessity for direct control expenditures. Early implementation of the forest management plan program is a logical first step toward attaining indirect control of bark beetles through improving the vigor of the host trees.

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(9) The program of training forest insect research specialists and practical control men should be continued and intensified.

PRODUCTS

1. Reported Bamboo Production and Stockpiles, October-December 1950

a. The production of "moso" (large-sized bamboo) during the third quarter of the 1950 fiscal year 1/ was 666,500 pieces. This is 167.8 percent more than during the second quarter of the 1950 fiscal year and 3.7 percent more then during the third quarter of 1949. Production of smaller bamboo was 2,577,500 bundles or 142.0 percent more than during the second quarter of the 1950 fiscal year and 2.6 percent more than during October-December 1949.

b. The stockpile of bamboo, following the usual seasonal trend, increased during the third quarter. The amount of "moso" at the end of the quarter was less then at the end of the same quarter in 1949.

c. Production and stockpiles of bamboo during October, November, and December, as reported by the Forestry Agency, Ministry of Agriculture and Forestry, are shown in the following table.

REPORTED BAMBOO PRODUCTION AND STOCKPILES, OCTOBER-DECEMBER 1950

Month	Production		Stockpiles	
	Moso Bamboo (pieces)	Other Bamboo (bundles)	Moso Bamboo (pieces)	Other Bamboo (bundles)
October	234,400	812,800	94,200	512,100
November	219,700	828,000	125,700	581,800
December	212,400	936,700	151,700	606,400

SOURCE: Forestry Agency, Ministry of Agriculture and Forestry.

1/ Japanese fiscal year, 1 Apr 50-31 Mar 51.

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MINING AND MILLING

1. Technical Examination of Exploration and Mining Practices at Hitachi Mine

a. Natural Resources Section personnel made an examination of exploration and mining practices at Hitachi mine, Nippon Mining Co, Ibaraki Prefecture.

b. Production and Reserves: The Hitachi mine produces 20,000 tons of crude ore monthly. An increase of 10,000 tons monthly is planned for 1951, but it may be possible to double present production when new flotation cells are installed in the mill. A new shaft will facilitate transportation. The average grade of the ore is 1.3 percent copper and 16 percent sulfur. Copper concentrates from the mill contain 16 percent copper; the pyrite concentrates average 48 percent sulfur. Proved and probable ore reserves are estimated at 7,000,000 tons of crude ore. The chance of finding additional ore appears to be excellent.

c. Geology

(1) Ore Bodies: Cupriferous pyrite and, locally, pyrrhotite are in steeply dipping lenses, ranging from small uneconomic bodies to bodies several hundred meters long and up to more than five meters wide.

(2) Mapping: A surface map was made mainly by the Geological Survey. It is probably a fair representation but does not show structural features such as faults and fold axes. All of the underground levels have been mapped, but work prior to 1950 is poor. Parts of three levels were well mapped in detail during 1950. Current geologic mapping is good and, if continued, will help solve many mining and exploration problems. Such mapping already indicates that ore is enveloped in sericite schist, biotite schist, and chlorite schist. These rocks are valuable indicators.

d. Mining: Stopes are between two and five meters in width. The cut-and-fill method of mining is used, with sink and float tailings utilized as filling. Small cars distribute the fill from the waste, and raise and move the ore to chutes spaced at 20-meter intervals. Workings in the sericite zones are held open with difficulty, and heavy timbering is necessary.

e. Milling: The flotation mill is a modern, efficient plant. The only serious deficiency noted was the transportation and dumping system over the coarse ore bin: small one-ton cars are detached and routed singly over a complicated switch system and dumped by hand in a rotary dump. Primary crushing by gyratory is followed by short-head cone crushers, but only one-half the crushing equipment is utilized. The pulp from the ball mill is conditioned and chalcopyrite floated first. Tailings from the copper circuit go to the pyrite section, and the pyrite is floated after conditioning with copper sulfate and hydrochloric acid. The copper concentrates are briquetted and sent to copper blast furnaces; pyrite concentrates go to the sulfuric acid plant. Pyrite cinder may be used for iron blast furnace feed.

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f. Smelting and Refining: The first process in smelting utilizes a vertical blast furnace, fired by coal and tapped from a Beehive annex. The matte may be moved in a ladle to the converters, or poured in molds when converter capacity is insufficient. The refinery treats blister copper in the conventional manner used by electrolytic refineries in the United States.

g. Natural Resources Section personnel made recommendations to the mine manager and mine technical personnel, as follows:

(1) Epidiabase should be sought in exploration, as existing maps show that the ore in part follows epidiabase dikes along their contacts with schist.

(2) Structural studies should be stressed a bit more, as the ore is in two zones of shearing, along the epidiabase zone. Indications of other favorable zones can be noted. The ore seems in part to be localized in the shearing along cross folds. The axial planes of these cross folds should be projected to intersect other zones of shearing.

(3) The surface should be remapped to locate favorable folds and possible continuations of the mineralized zone.

(4) Cross sections should be made.

(5) Scrapers, instead of cars, should be installed in the stopes.

(6) Larger (four-ton) cars, similar to the Granby type, should be installed in order to eliminate a transportation bottleneck that will develop when production is increased.

(7) Density in the flotation circuit should be increased from 22 percent solids to 35 percent solids.

(8) Precious metal losses in cupellation should be investigated.

(9) The possibility of replacing the copper blast furnaces with reverbatory furnaces should be studied.

HYDROLOGY

1. Water Resources Policy for the United States

a. Dr Walter C. Lowdermilk, visiting expert consultant on flood control-watershed management, has made available to officials of the Ministry of Construction and the Ministry of Agriculture and Forestry, Japanese Government, extracts from The Report of the President's Water Resources Policy Commission, Volume I, A Water Policy for the American People, embodying the water resource policy recommended for the United States. Dr Lowdermilk, who acted for the Commission as Chairman of the Committee on Basic Data, suggested

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to the Japanese representatives that certain features of the policy recommended for the United States might well serve as a pattern for a similar, critically needed policy for Japan. The extracted material supplied to the Japanese is attached to copies of the Weekly Summary for the attention of Civil Affairs regional personnel.

2. Flood Prevention, Flood Control, and Watershed Management in Japan

a. The following is a continuation of a series of articles on flood prevention, flood control, and watershed management in Japan which started in Weekly Summary No 265 and has continued weekly since that time. The material presented below continues from Weekly Summary No 275 the section entitled, "Flood Prevention, Flood Control, and Watershed Management Practices".

(5) Floods

(a) General: As brought out in earlier articles, the rapid runoff experienced in most areas of Japan causes sharp rises in river flow on the short steep rivers. The problem of rapid runoff is complicated by the torrential rainfall experienced on frequent occasions, accompanying typhoons or cold fronts and local disturbances called "hurricanes". During the course of such rains, runoff reaches such proportions that it might well be termed a "flash flood". Every gully, creek, and minor tributary becomes a torrent, often bringing down massive boulders and other debris in such quantity that the stream becomes a virtual mudflow. For this reason, the flood problem is not one requiring consideration of water alone. Agricultural areas may be seriously damaged by the debris load in the river channels which, if deposited on the farm lands, quite effectively removes them from production, in some instances permanently.

(b) Frequency and Cause: Historical data on floods are difficult to evaluate accurately. Records of floods during the early history of Japan, or any other country, are suspect because emphasis is given to floods in or near the centers of government while those in remote areas, important for planning purposes, are mentioned briefly if at all. Floods have been common in Japan through the centuries, as evidenced by the flood control works undertaken in very early times, a topic previously discussed in conjunction with the history of river development. The diversion of the Tone River to eliminate the flooding of Tokyo (Edo) was undertaken during the Tokugawa era as were numerous other flood control works. After the Meiji Restoration (1868) the flood record becomes somewhat more reliable, but the tendency to emphasize floods in the areas of political or economic importance is still present. Even up to the present, flood records do not become completely adequate because of variation in reporting procedure, but some measure of the flood problem may be obtained from a consideration of records of occurrence.

1 The Resources Council of the Economic Stabilization Board has prepared an unpublished series of notes on the history of flood control activities of the central government from 1873. Specific floods are

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noted in 1893, Chugoku District; 1896, Kanto, Kansai, Tohoku, Chubu, and Hokuriku districts; 1899, Shikoku District. No mention of the size of the floods is made, nor of the cause. That the intervening periods were not free from floods is apparent from the amount of interest in the subject between the recorded flood periods and from the frequency of floods in subsequent years.

2 A second report by the Resources Council, in this instance a published volume entitled Report on Meteorological Disasters in Japan 1/ lists all types of disasters, including earthquakes, "tsunami" (tidal waves), floods, and fires. A review of the volume for the purpose of determining the number and causes of floods has made possible a few generalizations. In abstracting the data an effort was made to eliminate all disturbances which affected only seacoast or harbor areas and to include only those which brought about flooding of an area. Because of the rather indefinite nature of some records, errors probably were made. No fair and equitable means of comparing one flood with another could be established in part because of the scarcity of information and in part because of the lack of uniformity in reporting. Comparison was made difficult by the fact that the records from which the report was obtained obviously become more and more complete as the present day was approached, except for the period during World War II. The reviewers list only 21 floods during 1900-09; 35, 1910-19; 79, 1920-29; and 129, 1930-39. However, the records showed a decrease in frequency 1940-47 when only 47 floods were listed.

3 Of the 311 floods listed for the 1900-47 period, 114 were caused by typhoons, 193 by torrential rains, and two by snow melt. The detailed breakdown is given in the table below. It will be noted that the peak month for typhoon generated floods was August with 40, while the rain storms which caused floods were most frequent in July, with 41. Floods resulting from all causes were recorded as being at a maximum in August with 76, followed by July with 60, and September with 59.

CAUSES OF FLOODS IN JAPAN, 1900-47

Month	Flood Cause			Total
	Typhoon	Rain a/	Snow	
Jan	0	6	0	6
Feb	0	4	0	4
Mar	0	4	0	4
Apr	0	15	0	15
May	0	12	2	14
Jun	4	29	0	33
Jul	19	41	0	60

(Cont'd)

1/ Report No 17, Resources Council, Economic Stabilization Board, 15 July 1949, edited by the Central Meteorological Observatory, Tokyo.

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CAUSES OF FLOODS IN JAPAN, 1900-47 (Cont'd)

Month	Flood Cause			
	Typhoon	Rain a/	Snow	Total
Aug	40	36	0	76
Sep	32	27	0	59
Oct	18	7	0	25
Nov	2	7	0	9
Dec	0	6	0	6
TOTAL	114	194	2	311

a/ Rain accompanying thunderstorms, cold fronts, and other atmospheric disturbances not related to typhoons.

ITEM ATTACHED TO COPIES OF THE WEEKLY SUMMARY FOR THE ATTENTION OF CIVIL AFFAIRS REGIONS

1. Water Resources Policy for the United States

a. Extracts from The Report of the President's Water Resources Policy Commission, Volume I, A Water Policy for the American People, embodying the water resource policy recommended for the United States, are attached to copies of the Weekly Summary sent to Civil Affairs Regions, as Item 1.

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EDITORIAL AND PRODUCTION BRANCH

1. Preliminary Study Completed

a. Preliminary Study No 45, Forest Insect Control in Japan, February 1951.

2. Preliminary Study in Preparation

a. Preliminary Study No 46, Japanese Fisheries Administration, March 1951.

3. Press Items

a. NR Releases

"Accounting Consultant Joins NRS" (John C. Essene)

b. Published Items

"Presented Commendation" (W. C. Herrington)

"Accounting Expert Here" (John C. Essene)

"Conservation for Peace" (Lt Col H. G. Schenck)

Hubert G. Schenck

HUBERT G. SCHENCK
Lt Col CE
Chief, Natural Resources Section

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CONVERSION FACTORS
METRIC TO ENGLISH - JAPANESE TO ENGLISH

Metric To English

Weight

1 gram	=	0.035 ounce
1 kilogram	=	2.205 pounds
1 metric ton	=	2,205 pounds
	=	1.102 short tons
		0.984 long tons

Volume and Capacity

1 liter	=	2.113 pints
1 cubic meter	=	35.313 cubic feet
1 cubic meter	=	282 board feet
1 kiloliter		264.178 U.S. gallons
		(6.29 barrels petroleum of 42 U.S. gallons each)

Length

1 meter	=	3.281 feet
1 centimeter	=	0.394 inch
1 kilometer	=	0.621 mile
1 millimeter	=	0.039 inch

Area

1 square meter	=	10.764 square feet
1 hectare	=	2.471 acres

Japanese To English

Weight

1 koku rice	= 330.69 pounds
1 kan	= 8.267 pounds
1 momme	= 0.132 ounce
1 kin	= 1.323 pounds

Volume and Capacity

1 koku rice	= 5.010 66-pound bushels
1 koku wheat	= 5.029 60-pound bushels
1 koku naked barley	= 5.015 61-pound bushels
1 koku barley	= 4.995 48-pound bushels
1 koku lumber volume	= 120 board feet
1 koku log volume	= 80 board feet
1 koku liquid	= 6.370 cubic feet
	= 47.654 gallons
1 koku solid volume	= 9.827 cubic feet
1 soseki koku stacked volume	= 9.827 cubic feet
1 go	= 11.008 cubic inches
1 shaku	= 0.610 fluid ounces
1 sho	= 0.4765 U.S. gallon

Length

1 sun	= 1.193 inches
1 shaku	= 0.994 foot
1 bu	= 0.119 inch

Area

1 cho	= 2.451 acres
1 tan	= 0.245 acre
1 tsubo	= 35.583 square feet
1 se	= 0.0245 acre
1 square shaku	= 0.988 square foot

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NATURAL RESOURCES SECTION

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TOKYO, JAPAN

General Headquarters

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AGRICULTURE DIVISION

LAND REFORM

1. The Japanese Land Reform Program--Its Significance to Rural Asia

a. An address on "The Japanese Land Reform Program--Its Significance to Rural Asia" was presented by Dr Laurence I. Hewes at an annual meeting of the National Farm Institute at Des Moines, Iowa. Dr Hewes was assigned to Agriculture Division, Natural Resources Section from 8 May 1947 to 25 August 1949 as Land Reform Specialist. The text of Dr Hewes' speech follows.

THE JAPANESE LAND REFORM PROGRAM--ITS SIGNIFICANCE TO RURAL ASIA

"It is both a privilege and a challenge to have the opportunity of placing before a farm audience some of the problems of agrarian Asia. This talk represents my independent thinking as a private citizen representing no organization in or out of Government. My statements are based on my judgment, my experience of 29 months as a civilian adviser in General MacArthur's headquarters in Japan, and reference material available to students of Asiatic affairs. As the movies have it, any resemblance to any other speaker on this topic, living or dead, is purely coincidental.

"Today, many Americans seek understanding of other people in other parts of the world. In my judgment an understanding of Asia must be based on the simple fact that the great bulk of its people earn their living from the soil. Upwards of three-fourths of one billion people in Asia are directly concerned with cultivation in one way or another. Thus the big problems of Asiatic peoples arise out of agriculture and the ways of life associated with it.

"The rural areas of many parts of Asia are terribly over-crowded. Much of the soil is lacking in basic nutrients. Thus people live on tiny farms which can only produce at the expense of enormous amounts of labor. But the most intense problems are those connected with land tenure. Rates of tenancy, high throughout Asia, are extremely high in its rice-growing areas. These are usually the most densely populated areas, so farms are smaller and conditions of tenancy generally bad are, in the rice paddy areas, highly exploitive. Moreover the owner-cultivators, harrassed by many insecurities, are in continuous danger of losing possession of their land and of becoming tenants. Farms of two acres, one acre, and even of half an acre, are standard averages of size for entire districts. Rentals run from 50 to 80 percent of the gross product from these diminutive farms. Tenants have very few rights, and tenure is based on the will of the landlord.

"The typical pattern is that of individual family-farm units. It is a very old pattern and farmers cling to it tenaciously. Hence the greatest aspiration of the Asiatic rural masses is simply to own and cultivate a farm in security. Terrific sacrifices and incredible hardships are

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endured to maintain possession of land. The hardships of owner-cultivators and the disabilities of tenants serve as a great continuing source of unrest among farm people. In my judgment, there is small likelihood of stability in Asia until some settlement of the land question is reached. Moreover, this must involve, in the cases of the more extreme forms of tenancy, the firm establishment of individual ownership of individual farms if the aspirations of peasants are to be realized. The glib over-simplifications of Communist doctrine, of collectivization, and of state ownership are far from touching the real aspirations and needs of Asiatic farmers.

"The farmers of Asia seek a real stake in private property. It is to the best interest of a free democratic world that ways be found to satisfy this need. For this reason the American sponsored Japanese Land Reform Program commenced in 1946 and completed in 1950 is so significant. From a situation in which over 70 percent of all Japanese cultivators were wholly or partly tenants and almost a third were landless tenants, this reform has resulted in establishing over 70 percent of the cultivators as owners; less than six percent are landless tenants while the remaining 24 percent of cultivators own some land. Formerly 46 percent of the arable land was tenant operated; today about 12 percent of the land is farmed under written tenant leases which are subject to careful scrutiny of elected land commissioners.

"This program was a dynamic and positive approach to the land problem. As an American, it seems to me to typify the swift reaction of the American spirit to a challenge of oppression and inequity. Frankly, I feel that far too little attention has been paid here at home to the significance of the reform and too little recognition has been given to the efforts of General MacArthur who initiated the program and insisted on its thorough execution.

"It is not my intention to recommend the Japanese program as a precise solution to problems elsewhere in Asia--each region and each country has its own unique culture, its own special circumstances and solutions most adapted to the special needs of each area. It also is apparent that, although effective solutions to these problems are highly desirable and of great interest to people of good will everywhere, solutions should come about only as the result of the free choice of the countries involved. In spite of these considerations, there are nevertheless situations which are in many ways similar to the agrarian problems of Japan. The land situation, for example, in both Formosa and South Korea, is fairly close to that of Japan. In Formosa, 40 percent of the farmers are reported as landless tenants. There appears to be a close parallel in over-crowded land, high rates of tenancy and insecurity wherever paddy field rice is cultivated in Asia.

"In Japan the tenancy system was ill-adapted to the large population and limited land area condition. About 36 million of the 82 million total Japanese population live on the land. This creates one of the highest rural population densities in the world. About 6 1/2 million farm families cultivate 15 million acres. In 1946, 40 percent of these cultivated 1.2

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acres or less. The average size unit was two and a half acres. It should be clear that, with 70 percent of all farmers partly or wholly tenants, rentals averaging half of the gross crop from these tiny farms created a serious problem.

"Moreover the Japanese landlord-tenant relation has very little in common with our Mid-Western concept of this relation--there was very little of the element of bargain or free contract in the Japanese tenure arrangements. An illustration is provided by this quotation from one of the few written Japanese farm leases. This one came from Yamagata in the Tohoku region of Northern Honshu during the Taisho Era ending in 1926: 'Having not enough land to cultivate, I earnestly request you to lend your land ---- if you comply with my request I shall never fail to pay rent in rice of a superior quality on and before the end of September every year. In case where the payment should be late, my guarantor will surely pay in my place, so that you may not suffer any loss or trouble through the delay. In the use of your land I swear to you that I shall never trespass its boundary as specified in the map. You may at any time recover your land in case you need it.'

"But there were more important reasons for the humility of the tenant than his desperate need for land. Basically agrarian, Japan was a feudal society; that is, a society where social controls were based on century-old customs of social inequality and inherited position was determined by control of land or the lack of it. Although the remainder of Japan turned modern in a big way in 1868, the farm population remained as a reservoir of the life and customs of the earlier feudal system. This earlier system enduring from 1615 to 1868 was a feudal semi-military form of despotism which kept Japan completely closed to foreign intercourse for over 200 years. The only production was then domestic produce and in view of the scant resources this was very largely agricultural products, principally rice. Consequently the central pillar of the Government's power came from its control of the rice crop. In a sense, Government was simply the art of manipulating distribution of rice. This implied the ability to control absolutely the lives of the peasants.

"Strict regulations governed every phase of their lives: the size of their houses, their clothes, what they ate, the manner in which they sat, drank, spoke and even laughed. One historian states that laughter which showed the back teeth of a peasant in the presence of a superior was punished by instant death. A feudal superior was empowered to cut down instantly any peasant who behaved in an unseemly fashion. Peasants were by law kept in ignorance, and thinking was not encouraged.

"The advent of the modern Empire of Japan in 1868 marked the commencement of one of the most ambitious schemes of economic and military accomplishment in modern history. In initiating this scheme in a region of scant natural resources, the only source of wealth available for development was the produce of agriculture and fisheries. Ready to the hand of these planners was then thoroughly docile, completely disciplined peasants who were highly efficient producers of the only wealth there was. Moreover, the group was already accustomed to the most extreme form of authoritarian control.

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"There was no incentive whatever, therefore, to liberate the peasants, but only to develop a method for converting their produce into the tools of industry and commerce. The profits from agricultural rents under this new system were so great that investors were discouraged from entering agriculture as operators, preferring to gain a far larger return from the rent of land to tenants.

"As we know, this policy worked well for awhile and the Japanese Empire became, in about half a century, a leading world power. But beginning in 1920 changes commenced to be felt in the agrarian community. Whereas formerly farmers could be insulated against the outside world, the introduction of modern cash economy had serious repercussions in agriculture. Disastrous fluctuations in the rice market plus the slow seepage into rural areas of democratic ideas caused unrest. From 1920 to 1930 the government sought to meet this situation with various half-hearted reform measures which were largely ineffective. Farmers themselves began to organize and developed a Farmers Union which by 1930 had perhaps a million members. The government brought pressure to bear on this movement but it managed to survive although somewhat precariously. It served at least the purpose of a sounding board of farm distress.

"Then came a rapid and dramatic turn of events--and a situation from which a parallel may be drawn to the somewhat similar situation in parts of Asia today. In 1930 the war-minded portion of the Japanese military decided to take over power. In seeking a political ally to support their program they turned to the rural villages. To the peasants they seemed to offer a way out--at home, reforms which would be effective; abroad, the hope of new lands to settle. Appeal was made in terms of all the old feudal beliefs and prejudices--the code of the samurai, bushido--loyalty to one's Emperor and to the soul of Old Japan, Yamato Damashi. It was for many reasons a successful appeal and in the political murders of 1932-33 which removed the more moderate elder statesmen, a number of civilians from rural areas participated.

"It is easy to see why this alliance developed--the farmers, in desperate plight with nowhere to turn, at last found a strong ally. This seems to me to be a situation which has a potential parallel in other areas of Asia if similar circumstances arise. The Japanese military did not forget their promises of aid. After 1930 a series of agrarian reforms were enacted. Several of them definitely in the right direction. However, both in content and application, they all failed to attack the land question directly and vigorously. So matters stood in 1940.

"Japan, as you know, came out of the war a ruined nation--practically all of her industrial plants had been bombed or burned. The only relatively undamaged portion of the economy was agriculture. But it too had suffered severely. Lack of both fertilizer and manpower reduced agricultural production in 1945 to the lowest point in over 30 years. Thus the critical

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food situation alone was sufficient to call attention of the Allied Occupation authorities to agriculture. But, in addition, students of Japan's political history, both in the Army and other departments of government, were convinced that any real chance of bringing democracy to Japan, of carrying out the terms of the Potsdam Declaration, and of the surrender depended on a drastic reorganization and reform of the agrarian structure.

"The wisdom and insight which enabled American economists, statesmen and military leaders alike to see through to the strategic nature of the problems of agrarian Japan is commendable. Heartening, too, was the attitude of firm practicality with which a solution was sought. A careful review of the pre-war period made shortly after the Occupation commenced disclosed the character of the land problem, the inexcusably exploitive tenure system and the failure of previous Japanese governments to reach a solution.

"Just a little over three months after the surrender in Tokyo Bay, General MacArthur issued, on the 9th of December, 1945, his famous Rural Land Reform Directive to the Imperial Japanese Government. The terms and tone used by the General indicate the spirit in which the order was conceived. It begins with these words: 'In order that the Imperial Japanese Government shall remove economic obstacles to the revival and strengthening of democratic tendencies, establish respect for the dignity of man and destroy the economic bondage which has enslaved the Japanese farmer to centuries of feudal oppression, the Japanese Imperial Government is directed to take measures to insure that those who till the soil of Japan shall have more equal opportunity to enjoy the fruits of their labor. The purpose of this order is to exterminate those pernicious ills which have long blighted the agrarian structure of a land where almost half the total population is engaged in husbandry.' The ills of agriculture were enumerated. They included 'widespread tenancy under conditions highly unfavorable to tenants'. The Directive called on the Japanese government to present within four months a program providing for transfer of land ownership from landlords to tenants and for protecting the new owners from reversion to tenancy.

"Of course, issuing this order was one thing, but getting it executed was quite a different matter. For reform of Japanese Land Tenure signified much more than transfer of ownership. It was a blow directly at the heart of a long established social order. It meant the emancipation from a form of semi-serfdom of millions of people. To the landlord group, in the rural social order, it meant a stripping away of special privilege and traditional prerogatives of superiority, it meant also the destruction of a basically unfree caste system based on control of land. Now the landlord groups had successfully maintained their position despite the reform movement of the previous quarter century. Deeply entrenched in politics and in bureaucracy they had successfully maneuvered time after time, in spite of the overwhelming need for reform, to cripple legislation and to frustrate execution and administration of reform measures. At the same time, the cultivators were especially timid in confronting their feudal superiors. They were over-awed by anything approaching formal and official

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procedures. For the most part poorly organized, they paled at the thought of appearing in law courts or before any other official bodies. They feared and revered their feudal superiors. The landlord group was sophisticated and experienced. Time after time it had successfully turned back legislation which under another system of government would have appeared as a response to a clear popular mandate. They even had been successful after fairly sound legislation had been enacted in preventing its execution through their control of the judiciary and of the executive.

"In the face of the challenge of the Occupation land reform directive, they now swung into action with a masterful campaign of maneuver and strategy which tested severely the wisdom and effectiveness of the Allied Occupation.

"It would have been a simple matter for General MacArthur to have shoved the program down the throats of this opposition. Simple, and fatal, to any successful permanent land reform program, and a disastrous initial step toward carrying out the principal objective: creation of democratic Japan.

"Here, perhaps more clearly than at any other time during the Occupation, was the democratic method to be contrasted with the Soviet approach. When it became apparent that the Occupation was prepared to see the issue voluntarily carried out through Japanese law and Japanese administration after a democratic referendum, the Soviet press screeched to high Heaven: 'betrayal of the peasants'--'betrayal of democracy'--'betrayal of the people'.

"It was basic to the entire Occupation policy that all major reforms were a Japanese responsibility. Occupation functions consisted in formulating major policies. Everything else--legislation, administration, adjudication and enforcement--was performed by the Japanese. This was the procedure followed in the case of land reform. Consequently almost the entire year of 1946 elapsed before the program was ready for action. But the intervening period was extremely important. It was necessary first to create sound basic land tenure legislation. Drafting of the measure and parliamentary debate occupied spring, summer and early fall of 1946. In this period the Occupation encouraged the widest possible debate and publicity on the land topic. I should like to state here that this wise policy must be credited particularly to General MacArthur.

"The political problem was eased by the results of the April 1946 general elections which displaced the Shidehara government with the first Yoshida government. The new government contained a considerable number of reform-minded statesmen including Mr Hiroo Wada who became Minister of Agriculture. Wada had an established reputation as a pro-agrarian reform leader. His known friendship for the United States and for democracy had cost him several jail sentences and persecution of the thought police during the war years. Mr Wada was an able negotiator; under his leadership the land reform legislation was finally drafted and enacted. It took much of its form from an existing Japanese statute passed in 1938.

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"During this period of planning and debate the Communists tried to exploit the situation. It became very clear that they had regarded the Japanese agrarian scene as their oyster. Land reform was their special, and perhaps most important, party plank. Apparently they cherished the ambition to use it as a spring-board to infiltrate the entire Japanese economy. They could not afford to lose without a fight the opportunity presented by the need for land reform to dominate agrarian Japan. Consequently their efforts to discredit the Occupation, the Diet, the Cabinet, Mr Wada and the Ministry of Agriculture were vicious and unceasing. In my judgment the eventual enactment of democratic land reform legislation and the successful execution of a land reform program based on private property was a resounding Communist defeat of great significance. I should like to see them similarly defeated in other parts of the Far East.

"With enactment of desirable legislation virtually certain, the Japanese government went ahead with creation and mobilization of the considerable administrative machinery for the job ahead. The Occupation's concern on the side of administration was to insure that the task was performed expeditiously, democratically, equitably and with as little disruption and conflict as possible.

"The law was finally enacted in October 1946. Its principal features were:

1. Division of all agricultural land into owner-farmer land which is land cultivated by an owner and tenant-farmer land cultivated by a tenant.

2. The government was authorized to purchase from owners for later resale to tenants all tenant farmer land owned by <u>non-residents</u> of the village, all tenant-farmer land in excess of 2.5 acres (10 acres in the Northern island of Hokkaido where a more extensive agriculture is practiced) owned by <u>residents</u> of the village.

3. All owner-farmer land in excess of 7.5 acres was to be purchased (25 acres in Hokkaido) unless it could be proved that the owner had sufficient family labor to cultivate a larger area or that subdivision would result in decreased production.

4. Tenant-farmer land which would, under the foregoing provisions, amount to about 12 percent of the arable area was to be subject to a written lease and other stringent regulations.

5. The work of transfer and all decisions pertaining to it were the responsibility of ten-man village land commissions democratically elected by landlords, owner-cultivators and tenants. Village commissioners elected a 20-man prefectural land commission of landlords, owner-cultivators and tenants in each of the 46 prefectures of Japan. This was an appeal body which ratified the decisions of the village commissions.

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"I should like to call attention to the vast scope of this undertaking. The first step was the election of the local commissions which meant a village-by-village election in about 12,000 communities of 120,000 village commissioners and of some 900 prefectural commissioners. Each commission had an appointed secretariat. With regard to the land itself, an enormous detailed job was presented. Japanese farms are not single units; each consists from about five to as many as thirty separate tiny dispersed parcels all intermingled with neighboring parcels. Thus one tenant may have half a dozen landlords and each landlord six or more tenants. Tha land to be transferred amounted to roughly five million acres. It consisted, however, of over thirty million separate tracts. Purchase and sales transactions were separate. Thus there were over 60 million transactions to accomplish and each transaction involved several separate tasks. At the peak, including the 160 odd thousand commissioners, a work force of not less than 300,000 persons was required.

"The functions performed by the land commissions was of the greatest importance. They decided under the law what land was to be purchased, and its purchase price. They decided who the new owner was to be and the sale price. They determined the fairness of remaining lease agreements and supervised the drawing up of the written lease. Thus the work was highly decentralized and completely democratic. The significance of the work of these commissions and of the Commissioners themselves, is almost as great as that of the land transfer. They represented the first occasion in Japanese history when humble peasants took a part in the affairs of government.

"It took just about 30 months to accomplish the task, with final clean-up of details carrying over to January 1, 1950. At least three million farmer tenants purchased land. While the program was not without its rough spots, some of them very rough indeed, and while its execution is in some respects subject to criticism, yet it must be granted that the program was on the whole remarkably successful. The transfer was accomplished peacefully. There was no physical disturbance to the life of the village, no sweeping dislocation of populations. The land was in most instances transferred to the tenant who had been cultivating it. In all its major aspects and accomplishments the land reform program was in complete contrast to the kind of thing that could be expected under a Communist regime. The landlords were at all times treated with respect, not as a class but as individual members of society. Each transaction was handled on its merits under the law. All persons affected had full rights of appeal not only to the commissions but to the courts. All other laws bearing on the transfer of property--and there were many--were fully respected. Every transaction was completely and thoroughly carried out and all the details of safeguarding the transfer of property rights were duly observed.

"The program has a tremendous effect on social life of Japan. Two great feudal classes have been abolished. For the first time in the history of Japan, peasants have the full stature of free men. They have accepted this new position quietly and with dignity but also they are now

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accorded by their fellow citizens a respect formerly lacking. The institution of private property has been greatly strengthened because of its much wider extension among a great number of people. While many problems remain to be solved in rural Japan, I feel quite sure that these will be dealt with in a peaceful and democratic fashion.

"The gains very likely will be permanent. It seems to me that every effort should be made to guarantee their permanence in any peace treaty with Japan. Moreover, auxiliary programs protecting those other aspects of economic life which have been enacted for agriculture--cooperatives, more equitable taxation, crop insurance, agricultural education, extension service, land reclamation, land consolidation and land improvement--should be vigorously extended and encouraged. To permit any of these significant achievements to lapse would be a great shame and, since they are to a considerable degree products of American policy, a considerable detriment to American prestige in Asia.

"I have several times in the course of this talk alluded to the connection between land reform and the rice economy. The point is made because the rice economy prevails in the populous areas of Asia. This paddy-field agriculture has the faculty of creating a very extreme form of tenancy. Moreover, the pattern it creates extends to the neighboring upland agriculture practised in adjacent lands so that the tenancy pattern of rice extends to entire regions. Consequently, I doubt very much whether, in these areas, a satisfactory settlement of the land problem can be reached except along lines similar to that of Japan. In other Asiatic areas where a different economy is in effect, where varying tenure systems and patterns exist, it is possible that satisfactory solutions may be found to the land problem by strengthening and regulating lease arrangements and controlling the rate of rent. The object after all is security for the cultivator and a more equitable share in the produce which his toil brings forth. Again, there is no single solution or standard pattern. Land problems should be approached with an open mind, each country and each area seeking the remedy which best fits its special needs. In spite of such proposals, the over-population problem will continue to be an adverse force. As much should be done as possible to offset its malign effects.

"As Americans I believe we should take a great deal of pride in our accomplishment in Japanese agriculture. One cannot escape a certain feeling of personal satisfaction in having participated in this work. But it seems to me, both at home and abroad, particularly in Asia, we should make every effort to identify ourselves with this type of achievement indicating our accord with its basic purpose and our sympathetic understanding of the great need for similar adjustments elsewhere in Asia. We have done something to be proud of: we have demonstrated in the specific case of Japan the harmony of democratic beliefs and agrarian reform. We should capitalize on this achievement among the peoples of Asia more broadly perhaps than we have, and--much more loudly! It is highly necessary that Americans recognize the distress of Asiatic farmers and the reasonableness of their aspirations. It is most important that Asiatic farm people know that the American people are sympathetic to their plight.

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"I feel strongly that Americans should seek to comprehend the tremendous importance of the agrarian population of Asia and the significance of the problems confronting the farm people. The terrible insecurities of rural life should arouse our sympathy. We should recognize the needs of these people as legitimate. On the other hand, Asiatic peasants need to know of our positive sympathy for their plight and, as in the case of Japan, of our express willingness to see their aspiration for security of land tenure realized. It seems to me that a great opportunity exists for letting the people of Asia know that the American spirit of fair play, of equality, and of freedom is a great dynamic force in the world and that it is on their side. If this thought can be pounded home by every channel at our command, with imagination, understanding and vigor--if the basic altruism of American democracy and of christianity can be made completely clear to the rural masses of Asia--I am confident that the frightening connotation of the term 'Asiatic hordes' will disappear to be replaced by the understanding that Asiatics are for the most part simple farm people who have a great love for the land they cultivate."

2. Review by Agricultural Attaché of Report on The Japanese Village in Transition

a. Natural Resources Section Report No 136, The Japanese Village in Transition, was discussed in a dispatch to the State Department prepared by Mr Wolf I. Ladejinsky, Agricultural Attaché, Diplomatic Section.

b. The paper by Mr Ladejinsky follows:

COMMENTS BY AGRICULTURAL ATTACHE ON NRS PUBLICATION
ENTITLED THE JAPANESE VILLAGE IN TRANSITION

SUMMARY AND CONCLUSIONS

The publication entitled The Japanese Village in Transition was prepared jointly by Natural Resources Section and Civil Information and Education Section, General Headquarters, Supreme Commander for the Allied Powers, and published by the former organization as Report No 136. This 272-page volume, released late in 1950, is divided into five parts, as follows: (1) Rural Japan Today, intended as background material on the country's basic agricultural conditions; (2) Recent Changes in Village Life, or developments during the period June 1947-December 1948; (3) A Brief Description of Each of the 13 Villages, summarizing the outstanding features of the communities under study; (4) Analysis of Special Phases of Village Life, which attempts to present in some detail the nature of changes effected by the post-Surrender reforms, and, finally, (5) Postlude, containing comments designed to fill in the gap between December 1948 and late 1950.

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The Japanese Village in Transition, the first agricultural study of its kind issued by the Allied Occupation, throws light on some of the consequences of the main agrarian reforms, and chiefly the land reform, instituted and carried out under the auspices of the Occupation.

The main conclusions of the work are as follows: (1) the land reform met the long-felt needs of the majority of the Japanese farmers; (2) the land reform is not a paper reform, but one actually carried out, in consequence of which most of the tenants have become owner-cultivators; (3) the economic and social position of the tenants, formerly second-class citizens of rural Japan, has been measurably strengthened; (4) the position of the landlords, the undisputed arbiters of the pre-reform village, has been greatly weakened; (5) the landlords, particularly the small ones, are opposed to the reform but a good many of the big landlords recognize that it has benefited the community as a whole; (6) the reform has given rise to a new rural leadership, but the former leadership has not been displaced altogether, it being now shared by the new and the old elements; (7) the agrarian revolution has been carried out peacefully, without a single instance of loss of human life or damage to property.

In general, the lessons to be learned from Japan's land reform have great relevance not only to students of Allied Occupation policies in Japan or to students of rural Japan, but also to all those in the United States Government now concerned with the economic and political stabilization of Southeast Asia and the Middle East. Although the details of Asia's agrarian patterns differ from country to country, in essence the problem is very much akin to that of Japan. Throughout the East, the institutional exploitation of tenant by landlord obstructs the development of sound economic, political, and social conditions. Failure to institute long-overdue reforms is courting political upheaval and the strengthening of the Communist cause. In Japan the issue was met when the farmers finally received the land. Similar action on the part of the Asian governments still in power might turn the tide of restlessness and despair into one of stability and hope.

The subsequent paragraphs are detailed comments on some of the main aspects of the Japanese village in the process of transition as set forth in the study.

MAIN PURPOSE AND IMPLEMENTATION OF THE LAND REFORM

Establishment of the land tenure reform has been one of the main objectives of the Allied Occupation in Japan. The reform, which aimed at the wide diffusion of land ownership among the vast numbers of Japanese landless, was inaugurated in January 1947. By the end of March 1950, the transfer of land under the provision of Owner-Farmer Establishment Special Measures Law and the Agricultural Land Adjustment Law was virtually completed. Ownership of land by the operating cultivators is now the predominant form of land tenure in Japan; the amount of land operated by tenants has declined from 52 percent to 12 percent, while absentee landlordship has practically disappeared.

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In all, 3,000,000 farmers, or approximately one-half of all farmers in Japan, have acquired some land during operation of the program. When, in March 1950, land registration of the new titles to the purchased land was completed, the implementation of the land reform program became a reality.

FIRST EFFORT TO STUDY RESULTS OF REFORM LEGISLATION

The principal attention of the Occupation authorities in the period between launching and completion of the program was concentrated on its implementation. It was much too early to study the economic, social, and political consequences of the land reform. However, an attempt was made to study these results in a number of selected villages in May-June 1947, when the land reform was getting under way, and in November-December 1948, when sale of land to tenants was nearing completion. The results of the field studies are embodied in the pioneering work, The Japanese Village in Transition.

The authors of the work are fully aware of the difficulties confronting the student in search for answers to such crucial questions as the effects of the reform on rural welfare, farm leadership, education, changes in political affiliations, and a host of other problems. They state, therefore, that "the changes which were under observation are not, in any sense, as neat and clean-cut as might be implied by the terms 'before' (reform) and 'after'; the flow of social and economic history is no respector of the arbitrary cut-off points of social observers". This is particularly true when one considers the fact that not only at the end of 1948, but even on the eve of 1951, the Japanese village is still very much a village "in transition". For this reason it is well to keep in mind that the findings are by no means conclusive in every instance. Some will stand the test of time, while others may not. Political and economic developments of years immediately ahead may well lead to drastic shifts of attitudes on the part of the village community, and in the results of the reforms recorded in this study.

The study of the changes in rural Japan is based on 13 villages. This number out of the total 8,500 villages of Japan may appear to represent a relatively small sample; however, it represents a well chosen, wide variety of types, making for a fair composite picture of a Japanese village. Buttressed by careful sociological technique of testing, the results warrant generalizations which are applicable to rural Japan in general.

The Japanese Village in Transition deals also with changes induced by factors other than those connected with the reform movement. Shifts in population in the 18-month period which elapsed between "before" and "after", changes in birth and death rates, in regular and new type residents, in full-time and part-time farmers, in unemployed households and those receiving relief, and in the increase or decrease of crime, as well as changes in a number of other forms of village life do not stem from the rural reform introduced in Japan since the end of the war. Rather, they are by-products of the war, economic dislocation, poor sanitary and health conditions, traditional family ties, et cetera. But taken together with the changes directly traceable to the various reforms, and chiefly the land reform, they embody the main features of a Japanese village as of the end of 1950.

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CONSEQUENCES OF THE REFORMS

It is in Chapter IV, "Analysis of Special Phases of Village Life", that we find for the first time answers to this all-important query: what are the consequences brought about by the latest 1/ and perhaps the most significant agrarian revolution in the course of Japanese history? The answers relating to the attitude of the new owners and landlords to the land reform, village leadership, politics, position of women, and to the changing rural family in general, tend to show that, in the main, the first paragraph 2/ of General MacArthur's famous directive on land reform, dated 9 December 1945, is being translated into life successfully, and with varying results for the various groups of the village community. This writer is particularly concerned with the first two items mentioned above.

The acceptance of the land reform program by the tenants seems general. To be sure, they complain of heavy taxes, burdensome grain delivery quotas, and unfavorable price relationships between farm and non-farm commodities. These difficulties, however, in no way lessened their keen desire to hold on to what they have just acquired; nor were they concerned over the economic risks which go with ownership of land. "Time and again", the authors note, "the new owner-operators pointed out that it had been a lifetime hope of theirs, and often of their fathers before them, to own some land; several added that they had had no real hope of getting land in their lifetime, but now that they have it, they want to keep it."

This observation is supported by numerous American and Japanese field observers; it indicates that the land reform was not a foreign invention imposed from the outside, but is rather a measure that met the basic craving of the great majority of the Japanese farmers. The indigenous character of the program will in all probability stand it in good stead in the future, even if the favorable reform climate of the post-Surrender years should change with the passing of the years.

1/ Among those events the principal ones have been the Taikwa Reform of 646 A D, the Statutes of Taiho, 701 A D; the Land Measurement Ordinance of Hideyoshi, 1587; and the Land Tax Revision of Meiji, 1873.

2/ "In order that the Imperial Japanese Government shall remove economic obstacles to the revival and strengthening of democratic tendencies, establish respect for the dignity of man, and destroy the economic bondage which has enslaved the Japanese farmer to centuries of feudal oppression, the Japanese Imperial Government is directed to take measures to insure that those who till the soil of Japan shall have more equal opportunity to enjoy the fruits of their labor."

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ATTITUDES TOWARD THE REFORM

The favorable reaction of the great majority of the new owners to the land reform program is naturally not surprising. Nor is the unfavorable reaction of the landlords. According to the study, the majority of the landlords reported that the program had not been beneficial to their families, but it is significant to note that 37 percent stated that the program had been good for their respective villages. If the response of this large minority is to be accepted at its face value, then it is surprising that so many landlords were capable of rising above personal considerations, conceding as they did that the reform has benefited the community as a whole. It strikes one as a most unorthodox behavior on the part of the economic man in any society, since the virtue of resolving the personal interest in favor of the community or the national interests is not given to many. Only time will show whether they gave expression to their beliefs or their political exigencies of the moment.

ECONOMIC CONSEQUENCIES

It would have been premature under the low rent conditions prevailing in late 1948 (or in late 1950) to attempt to measure the degree of economic benefits received or losses suffered by the parties directly affected by the reform. Perhaps for this reason the authors limited themselves to these two general questions: (a) "Was the land reform beneficial to your family?" and (b) "If there had been no land reform program, how do you think living conditions in the village would have been?" With respect to (a), only four percent of the 583 tenants interviewed answered in the negative compared with 61 percent of the 86 landlords who responded negatively. With respect to (b), only eight percent of the tenants thought that conditions in the village would have been better had there been no land reform, whereas 47 percent thought they would have been worse, and 30 percent that conditions would not have been different. The present writer is of the opinion that the latter group was in no small measure influenced by the nominal rents they were then paying. Under these conditions immediate and strictly economic benefits derived from new ownership of the land did not loom large. On the other hand, the psychic income, as it were, that accompanied ownership cannot be overestimated, and the new owners were fully cognizant of it; this was well put by a tenant who expressed the true feelings of the greatest number of his class when he remarked that "a farmer without land is like a man without life".

The attitude of the landlord was, of course, much more critical, but surely not as universally so as one might have expected. Thus, "a large majority of them (landlords) felt that the land reform program had been either good or good and bad for the village, whereas only 16 percent of the landlords felt that the program had been beneficial to their own family, and a majority of them, 61 percent, thought definitely that it had not." The landlords clearly are making a distinction between what is "good for the village" and "good for the family". But even more surprising is the fact that the landlords are accepting their fate so quietly.

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REASONS FOR PEACEFUL TRANSITION

Similar reforms in China and Russia have caused much shedding of blood and loss of life, as well as the burning and pillaging of landlord estates. But a traveler passing through Japan's countryside would never know that momentous economic and social changes have been and are being effected there. This was due to the absence of landlord resistance. A number of reasons tend to explain this remarkable phenomenon:

1. The present land reform in Japan does not derive from a new policy imposed by a conqueror upon the conquered. It stems from the very nature of landlord-tenant relationship in Japan, as the numerous, unsuccessful prewar land reform attempts attest. The Allied Occupation was the midwife to a healthy reform which heretofore was stillborn.

2. In the main, the doctrine of obedience to authority has been well ingrained in every strata of Japanese society. Recently with the Allied Occupation in authority in Japan, the acceptance of the reforms by the landlords was inevitable.

3. The tenant-union movement was growing in strength and threatening the ancient organization of the landlords and their allied politicians.

4. The landlord generally had a strong paternalistic feeling toward his tenants and understood their problems. The fact that he generally ignored those problems for his own profit and yet accepts it now is merely another Japanese paradox, seemingly impossible for a Westerner to understand.

5. The low rentals in cash instituted by the Japanese Government during the war made it less profitable to rent out land.

LARGE AND SMALL LANDLORDS

The Japanese Village in Transition sheds considerable light on the differences in attitude toward the reform within the landlord class. The bigger the landlord, the more tempered the criticism; the smaller the landlord the more critical and the sharper the edge of refusal to make peace with the reform. The cause is above all economic. The small landlords lack the means of striking out into new fields in order to ensure the continuation of the standard of living of the pre-reform days. The big landlords are in a much better position. Some have extensive forest holdings (not subject to sale under the reform), some have industrial and commercial investments, and some are professional people. Moreover, through their relatively wide range of contacts, they have the opportunities to enter new types of economic activities, opportunities the small landlords lack. This is not to say that in a great many instances the economic positions of the big landlords had not declined and that they have the means for maintaining their customary way of life in the community. The levelling process

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initiated by the land reform is leaving its mark on every strata of the landlord class; the difference is only one of degree, and the smaller landowners had to shoulder the relatively heavier burden of the process.

NARROWING TRADITIONAL DIFFERENCES

It would take one too far afield to explain why it was impossible in Japan to devise a land reform that would benefit both tenant and landlord, and why the latter was called upon to make the sacrifices. The study under review is not concerned with it. What is important to note at this juncture is that the authors arrived at the following conclusion: "Broadly speaking, land reform has raised the status of the majority of the small farmers." This, in conjunction with the over-all weakening of the status of the landlords, reveals the narrowing of the traditional differences which constituted one of the worst features of Japan's rural society. This development reminds the present writer of a statement made by a landlord during one of his field trips in 1948. He said: "It is high time for the landlords of Japan to step one down and for the tenants to step one up so that the two should meet for the first time." Now that they are actually meeting on the land commissions, cooperative boards, village offices, and school boards, the conclusion is warranted that one of the basic premises underlying the formulation of the land reform program is finding its application.

NEW FARM LEADERSHIP

The study has much to say on the very important problem of new leadership in the village. One did not have to be an economic determinist to realize that it was bound to come. The traditional landlord-tenant relationship was breaking down as the economic base which made that relationship possible was beginning to disappear. The fact is that prior to the reform all leaders of the rural communities belonged to the landowner class. They had the money, the time, and the "know how", and they were not willing to share power with others. Their position, therefore, was all-important in the economic, political, social, and educational hierarchy of the village.

The situation in Yokogoshi village of Niigata Prefecture, cited in the study, is quite illuminating of the conditions prevailing before the reform. The six former mayors were all landlords. They were, in the words of the study, "a brother of the head of the large local landowning family, a relative of the same family, an owner of 52 cho (1 cho equals 2.471 acres), an owner of 10 cho, an owner of 30 cho, and an owner of 10 cho". And, the authors continue, "practically all of the assemblymen had been landowners, despite the fact that just before the land reform program was launched, 46 percent of all the farmers rented 90 percent or more of the land they cultivated, and 72 percent rented half or more of their land." Much of this is coming to an end. The shift from rent in kind to rent in cash introduced during the war was the first breach in the bonds between landlord and tenant. The land

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reform was the most powerful move in the same direction, since the loss of affluence has removed one of the main props of their influence. The extension of suffrage to the entire adult population, the inauguration of a system of direct elections, the strengthening of local autonomy, and the exclusion from public office of persons associated with "military assistance and aggression"--all had far-reaching bearings on the emergence of new village leadership.

The new leaders from the non-landlord groups hold positions of mayors, assemblymen, and of officials of the various farm organizations. "In December 1948," the report states, "more than two-thirds of the public officials and approximately one-half of the directors of the village agricultural cooperative were holding their present positions for the first time. The shift toward a new leadership appears chiefly to be the result of the 'purge directive' and the land reform program; the former removed many of the former leaders from their posts, whereas, the latter prepared a new group of people to function as leaders." The land commissions, which dealt with the most important part of the land reform--the sale and purchase of land--and on which the tenants were heavily represented, turned out to be the principal training ground for new leadership. Many were ill-prepared for their tasks, but much was learned through the actual exercise of authority. The authors state that "from 10 to 40 percent of the people now in leadership positions would not be occupying them had it not been for the land reform and related agrarian programs", while "in practically all instances, the villagers estimated that in 10 years, one-third to one-half of all local leaders would be coming from the new operator households".

It is fairly obvious that new leadership is not synonymous with total replacement of the old leadership, now or in the years to come. And this is as it should be. The old leadership has the articulateness, ability, and experience that may be put to use for the benefit of the community. Japan's rural economy even after the reform still is a marginal economy, and it will need all the talent--new and old--to deal with the ever-present problems of more than 6,000,000 farm families on only 15,000,000 acres of land. It is, therefore, a welcome development that now, and, it is hoped, in the future, village leadership is and will be shared between the former landowners and the new and old owner-cultivators.

CONCLUSION

The Japanese Village in Transition is not without its faults. The political side of the village should have been dealt with more thoroughly, and some of the assembled material was barely digested. In the main, however, the shortcomings derive from the attempt "to tell all". Greater discrimination in selecting and concentrating on fewer topics, yet topics bearing only on the reforms, would have added to its merits.

The study deals with the early life of the agrarian reform movement. The line of demarcation between "before" and "after" reform was only beginning to disappear under the impact of fast moving events. The reader must

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not look, therefore, for final judgments. But if the student of the Japanese village looks for observations recorded within the specified time period, he will be richly rewarded. This study should be equally rewarding to individuals and groups who are concerned with agrarian problems in other parts of Asia and in the Middle East. It may be suggested that they examine it along with Natural Resources Section Report No 127, Japanese Land Reform Program by Laurence I. Hewes, Jr, that definitive work on the causes underlying the land reform, the content of the reform, and how the reform was carried out. The two offer a great deal that must be known to appreciate the theory, practice, and some of the consequences of a major, yet peaceful, agrarian revolution in Asia.

Very important, too, is the fact that The Japanese Village in Transition broke new ground for the native scholars and students of rural life. The method of blending of the skills of various disciplines used in field observations for the purpose of this study is still new to Japan. Now that the combined results of the work of the rural sociologist, agricultural economist, anthropologist, economic geographer, and public opinion analyst are apparent, the Japanese scholars will in all likelihood use this tool for their own systematic and comprehensive investigations of rural life in its principal manifestations. And a welcome development this will be, for it is upon Japanese scholarship that we must depend for our knowledge of things Japanese.

The process of change unleashed by the reforms will go on for years to come, and some of the problems and answers presented in this work will be repeatedly re-examined and revised. Along with it will grow up a literature on post-reform rural Japan which will probably rival the rich agrarian history of Old Japan. In that body of studies The Japanese Village in Transition will have its deserved place as the first work in any language, which furnished the first answers, however tentative some of them may turn out to be, to the crucial questions of the consequences of Japan's agrarian reform. The authors, Dr Arthur F. Raper, Dr Tamie Tsuchiyama, Dr Herbert Passin, and Mr David L. Sills, the Natural Resources Section and Civil Information and Education Section who have sponsored the work, have rendered a genuine service to the cause of the greater understanding of post-reform rural Japan, of Allied Occupation policies in Japan in general, and to the furthering of Japanese scholarship.

AGRICULTURAL COOPERATIVE ASSOCIATIONS

1. Liquidation of Nogyokai Assets as of 31 December 1950

a. The Ministry of Agriculture and Forestry submitted the following data regarding the value of assets transferred to agricultural cooperative organizations, including cooperatives and federations of such associations, and to other purchasers by local and prefectural Nogyokai (agricultural associations) as of 31 December 1950.

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LIQUIDATION OF NOGYOKAI ASSETS AS OF 31 DECEMBER 1950
(1,000 yen)

Function	To Agricultural Cooperatives	To Other than Agricultural Cooperatives
Transfer of assets of prefectural Nogyokai during December	66,597	298
Cumulative total	15,196,260 a/	2,175,974 a/
Transfer of assets of city, town, and village Nogyokai during December	23,826	98
Cumulative total	49,353,648 b/	784,295 b/

a/ Figures for Oita Prefecture, which were not current in the last report, have been brought up-to-date in this report.
b/ Figures for Yamagata Prefecture, which were not current in the last report, have been brought up-to-date in this report.
SOURCE: Agricultural Cooperative Assn Division, Ministry of Agriculture and Forestry.

INSURANCE, CREDIT, AND TAXES

1. Revised Livestock Insurance Data for 1949

a. The Ministry of Agriculture and Forestry has submitted a report on livestock insurance under the Compensation Against Agricultural Loss Law during 1949. This report indicates, in summary, that livestock insurance covered 2,020,688 head of cattle, horses, goats, sheep, and swine insured for ¥27,972,175,946 for all types of policies. Of these amounts, insurance for cattle and horses covered 1,963,624 head for which policies in force totaled ¥27,130,941,192. Premiums on all livestock insured totaled ¥456,197,484, against which ¥340,137,699 was paid in benefits. Premiums for cattle and horses totaled ¥446,368,364 against which ¥311,972,933 was paid in benefits.

LIVESTOCK AND LIVESTOCK PRODUCTS

1. Livestock Slaughtered, December 1950

a. The carcass weight of livestock slaughtered in December 1950 was 16,786 metric tons, or 27 percent more than during the previous month and 31 percent more than the December 1949 output. Further details are shown in the table on page 22.

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LIVESTOCK SLAUGHTER AND CARCASS WEIGHT, DECEMBER 1950, WITH COMPARISONS a/

Livestock	Number			Carcass Weight (metric tons)		
	Dec 50	Dec 49	Nov 50	Dec 50	Dec 49	Nov 50
Cattle	49,294	35,326	40,134	8,669	6,428	7,156
Calves	3,233	2,112	3,506	183	119	184
Hogs	113,194	95,974	81,980	5,674	5,036	4,198
Horses	13,589	7,771	10,524	2,240	1,185	1,697
Goats	415	196	319	6	3	4
Sheep	638	19	477	14	- b/ -	13
TOTAL	180,363	141,398	136,940	16,786	12,771	13,252

a/ Includes only animals killed in licensed slaughterhouses as reported by prefectural sanitary inspectors; does not include farm killings.
b/ Less than one metric ton
SOURCE: Grocery Division, Food Agency, Ministry of Agriculture and Forestry.

2. Milk Production and Utilization, December 1950

a. Milk production reported during December 1950 was 29,898,000 liters, three percent less than in November 1950 but 15 percent more than in December 1949. Fifty-three percent (15,727,000 liters) was sold to manufacturing plants in December 1950 compared with 54 percent (16,731,000 liters) sold to manufacturers in November.

MILK PRODUCTION AND UTILIZATION, DECEMBER 1950, WITH COMPARISONS
(1,000 liters)

Area	Production			Utilization December 1950 a/		
	Dec 50	Dec 49	Nov 50	Sold to Manufacturing Plants	Sold to Bottling Plants	Other Uses b/
Hokkaido	6,423	6,805	8,646	5,057	659	707
Other areas c/	23,475	19,111	22,283	10,670	10,928	1,877
TOTAL	29,898	25,916	30,929	15,727	11,587	2,584

a/ For November utilization see Weekly Summary No 277.
b/ Includes milk used on farms for all purposes (household use, feeding calves and other animals), and sold locally other than to bottling plants.
c/ Honshu, Shikoku, Kyushu.
SOURCE: Grocery Division, Food Agency, Ministry of Agriculture and Forestry.

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AGRICUITURAL EXTENSION

1. Organization of Agricultural Extension Division, Agricultural Improvement Bureau, Ministry of Agriculture and Forestry

a. The Agricultural Extension program of Japan, which includes the farm adviser service, home life improvement service, and rural youth organization activity, is administered at the national level by the Agricultural Extension Division of the Agricultural Improvement Bureau, Ministry of Agriculture and Forestry. The Division is organized into three sections of Extension, Farm Improvement, and Home Life Improvement, with 24 branches. Three of the branches of the Farm Improvement Section each contain two units cr sub-branches. The Division has a staff of about 85 persons, both technical and clerical. An organization chart of the Agricultural Extension Division is shown on page 24.

b. The current organization became effective on 31 January 1951, incorporating changes authorized by Ministerial Ordinance No 3, dated 31 January 1951, and revising the organization created earlier under provisions of Ministerial Ordinance No 47, dated 31 May 1949.

c. Extension Section responsibilities and functions are as follows:

(1) Ccordination of local Extension organizations.

(2) Training of and qualifying examinations for persons concerned with the Extension work.

(3) Organization and development of Extension clubs for rural youths.

(4) Facilities for farm management training.

(5) Dissemination and publicity of knowledge about agriculture and farmers' living conditions.

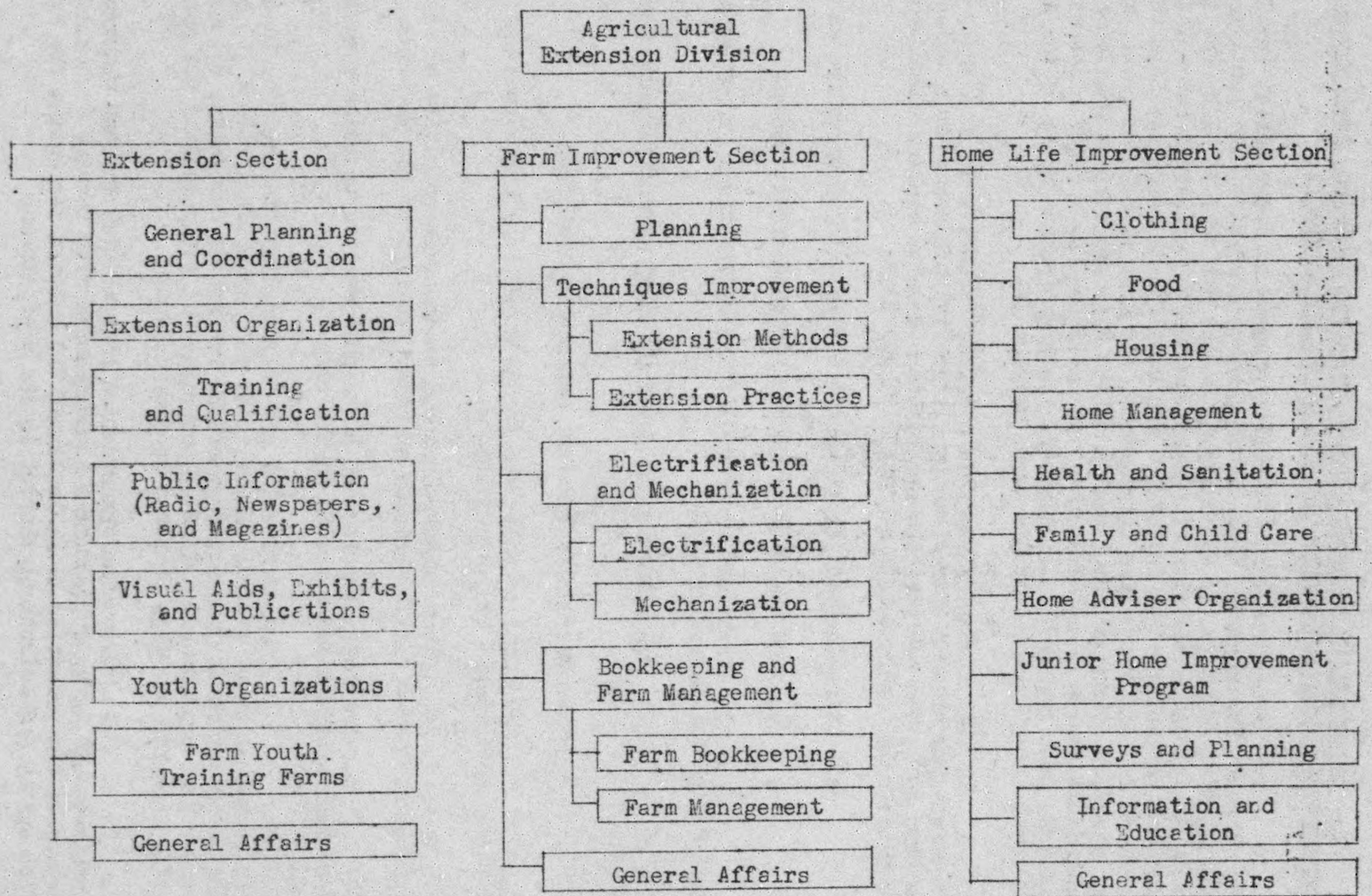
(6) Other matters included in the responsibility of the Division but not specifically asigned to other sections in the Division.

d. The Extension Section has eight branches to which responsibilities and functions are assigned as follows:

(1) General Planning and Coordination Branch: (a) Planning and coordination of matters coming under the Extension Section; (b) liaison and coordination of laws and regulations concerning Extension; (c) supervision over prefectural Extension programs; (d) other matters not specifically assigned to other branches in the Section.

(2) Extension Organization Branch: (a) Matters concerning grants-in-aid to be appropriated in accordance with the Law Concerning Improvement and Promotion of Agriculture; (b) matters concerning the Extension system and adjustment thereof in the prefectures.

ORGANIZATION OF THE AGRICULTURAL EXTENSION DIVISION, AGRICULTURAL IMPROVEMENT BUREAU, MINISTRY OF AGRICULTURE AND FORESTRY
As of 31 January 1951



SOURCE: Ministry of Agriculture and Forestry

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(3) Training and Qualification Branch: (a) Examination of Extension workers; (b) pre-service and in-service training of Extension advisers; (c) in-service training of subject matter specialists; (d) qualification examinations of Extension workers; (e) grants-in-aid to the Agricultural Training Institute's facilities; (f) matters concerning money-in-trust to the Higher Agricultural Training Institute.

(4) Public Information Branch: All matters concerning radio programs and newspaper and magazine publicity.

(5) Visual Aids, Exhibits and Publications Branch: All matters concerning the subjects named.

(6) Youth Organizations Branch: Organization and promotion of rural youth club activities.

(7) Farm Youth Training Farms Branch: (a) Matters concerning operation of the Farm Youth Training farms; (b) grants-in-aid to the Farm Youth Training farms; (c) money-in-trust to the Yatsugatake Central Farm Youth Training Farm.

(8) General Affairs Branch: Matters concerning personnel, budget, accounting, and documents.

e. Farm Improvement Section responsibilities and functions are as follows:

(1) Improvement in the methods of agricultural management.

(2) Collection and organization of data concerning improvement of agricultural management methods.

(3) Analysis of agricultural improvement projects.

f. The Farm Improvement Section has five branches to which responsibilities and functions are assigned as follows:

(1) Planning Branch: (a) Planning, liaison, and survey relative to farm improvement programs; (b) collection, tabulation, organization, and introduction of instruction materials and good examples; (c) surveys of farmer study groups and leaders in agricultural affairs; (d) other matters concerning farm improvement.

(2) Techniques Improvement Branch

(a) Extension Methods Unit: Measurement of the effects of Extension in the improvement of agricultural techniques; other matters concerning the evaluation of Extension means and methods of disseminating the knowledge and practice of improved agricultural techniques.

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(b) Extension Practices Unit: Extension programs to improve agricultural techniques; area extension programs; compilation and publication of materials on improvement of techniques (i e, Agricultural Advisors' Library and Guides for Work); demonstration farms; guidance to prefectural extension sections relative to agricultural techniques improvement; extension of agricultural techniques in ways other than those mentioned above.

(3) Electrification and Mechanization Branch

(a) Electrification Unit: Statistics on use of electricity in farm work; survey on electric power consumption per given unit; survey of farm management and economics relative to use of electricity in farm work; matters concerning the development of small hydroelectric plants; matters concerning the Council for Promotion of Electrification (Donka Suishin Kyogikai); other matters concerning the promotion and extension of electrification.

(b) Mechanization Unit: Matters concerning improvement in management, labor, and techniques through mechanization; survey of actual conditions in mechanization; matters concerning repairing and service systems of farm machinery and equipment; survey of farm machinery industries; matters concerning the Council for Promotion of Mechanization (Kikaika Suishin Kyogikai); other matters concerning the promotion and extension of mechanization.

(4) Bookkeeping and Farm Management Branch

(a) Farm Bookkeeping Unit: Matters concerning farmer bookkeeping forms; farm families cooperating in experiment on farm bookkeeping; other matters concerning extension of farm bookkeeping practices.

(b) Farm Management Unit: Survey of the trends of farm management and farm improvement practices; introduction of good examples of farm management; guidance to farm improvement program in prefectures.

(5) General Affairs Branch: Matters concerning personnel, budget, accounting, and documents.

g. Home Life Improvement Section has over-all responsibility and performs functions pertaining to rural culture and the improvement of farm living.

h. The Home Life Improvement Section has 11 branches to which responsibilities and functions are delegated as indicated by the names of the branches and by other information as follows:

(1) Clothing

(2) Food

(3) Housing

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(4) Home Management

(5) Health and Sanitation

(6) Family and Child Care

(7) Home Adviser Organization: Personnel supervision and training.

(8) Junior Home Improvement Program

(9) Surveys and Planning: Maintaining liaison and coordination in matters concerning materials; collection of data from prefectures and other sources; tabulation, distribution, and filing of materials and exhibits; coordination of surveys, materials, and data; organizations, budget, and liaison on home life improvement matters.

(10) Information and Education: Planning and conduct of matters concerning information and education; maintenance of files and records; publication of Koho Dayori (Information News), and preparation of newspaper items.

(11) General Affairs: Records; mail; personnel locator service; reports.

i. In planning the reorganization of the Agricultural Extension Division, consideration was given by the Ministry officials to the establishment of a Youth Organizations Section, but the present number of Ministry personnel engaged in youth work is not sufficient to warrant section status. However, the Ministry representatives indicated a definite willingness to work toward this objective. As a means of moving nearer to the goal, a position of Assistant Section Chief was established, with the appointee supervising both the Youth Organizations Branch and the Farm Youth Training Farms Branch. Consideration also was given to the most desirable place to fix the responsibility for more adequate field coordination between the Agricultural Extension Division, Ministry of Agriculture and Forestry, and the prefectural Extension programs. Ministry officials considered it desirable at this stage of development for each of the three sections of the Agricultural Extension Division to exercise responsibility separately in their respective fields under the general supervision of the Division chief. As the program develops further, establishment of a Field Coordination Section may become desirable, but it was considered as not warranted at this time.

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FISHERIES DIVISION

GENERAL

1. NR Press Statement on "Japan Represented at Indo-Pacific Fisheries Council Meeting in India" 1/

a. The third annual meeting of the Indo-Pacific Fisheries Council held at Madras, South India, from 1-16 February 1951 marked the first time that a representative of the Japanese Government has been invited to attend the meeting of this international group concerned with the development of the fisheries of the Indo-Pacific Region. In response to an invitation from the Regional Fisheries Office of the Food and Agriculture Organization of the United Nations for Asia and the Far East, Mr W. C. Neville, Chief, Fisheries Division, Natural Resources Section, attended as observer for the Supreme Commander for the Allied Powers. The invitation had been extended to include a representative of the Japanese Government. Mr M. Sogawa, Chief, Production Department, Fisheries Agency off the Ministry of Agriculture and Forestry, was assigned by the Japanese Government to attend the meeting as technical adviser to the SCAP observer.

b. The Indo-Pacific Fisheries Council is organized for the purpose of bringing together administrators and technicians of the various nations of southeastern Asia and areas of the western and southwestern Pacific to discuss fisheries problems and to coordinate programs for the development of the aquatic resources of the Indo-Pacific area. The immediate aim is to increase fisheries production which in turn will improve the food supply and diet of the indigenous people.

c. The Council area extends from Hawaii to India and from Korea to Australia. The importance of developing the fisheries of this vast region is intensified by the fact that its agricultural production is not large enough to feed the people of the Indo-Pacific area, where population density is so great.

d. The Indo-Pacific Council meeting in India was attended by 32 representatives of 13 member governments. Representatives were also present from the South Pacific Commission (SPC) concerned with the economic development of the South Pacific Islands, from United Nations Educational Scientific and Cultural Organizations (UNESCO), and from the Pacific Science Congress (PSC).

e. In accordance with the procedure followed at the first annual meeting in Singapore and the second annual meeting in Australia, at which meetings a SCAP observer was present, the Council conducted its work through two technical committees, one dealing with fisheries technology and the other with fisheries biology and oceanography. The discussions by these committees at the third annual meeting emphasized the

1/ For regional release by Civil Affairs if desired

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need for information on fishing gears, fishing methods, processing and preservation of fisheries products, marketing of fisheries products, and the effect of development of local fisheries on the social and economic conditions of the fishermen, their families, and their communities.

f. In addition, the committees stressed the need for scientific information on the biology, migrations, and other aspects of fisheries studies designed to determine levels of abundance of fish supplies and the extent to which fisheries can be developed without danger of overfishing or depletion of the stock. The Council directed considerable attention to the study of the tuna fisheries of the Pacific and the oceanography of that area. Some member nations are also engaged in programs for the development of their fresh water fisheries through pond culture and transplanting of fish stocks from areas of abundance to areas of scarcity. Special interest was shown by some of the southeastern Asia countries in the greater utilization of seaweeds as a source of food and of by-products for many domestic needs.

g. Considerable interest continues among the southeastern Asia countries in improving fishing methods including mechanization of boats and introduction of non-indigenous gear. The Council recognized that programs for the development of fisheries in the hope of increasing production must be carefully coordinated with social and economic conditions of fishing communities and must be accompanied by a program of education in conjunction with some government assistance and financial support.

h. Much consideration was given to obtaining technical assistance in the form of skilled fishermen with their special equipment from foreign countries. These technical experts would explore local areas to determine the possibility of developing new commercial fisheries and would teach local fishermen new techniques, especially in fishing offshore areas where observations indicate important commercial fisheries can be developed under a program of proper advice and guidance of qualified technicians.

i. Many delegates and other representatives at the Council meeting showed great interest in the information which the SCAP observer and the Japanese technical adviser submitted on Japanese fisheries. Especial interest was shown in the numerous types of gear which are characteristic of Japanese fisheries and which have helped Japan to become the world's leader in fish production. Japanese methods of processing and preserving fisheries products, especially those methods which do not require highly skilled labor or large mechanized facilities, also received especial attention. Specific requests were made to the SCAP observer and to the Japanese technical adviser for assistance in obtaining skilled Japanese fishermen with the necessary boats and equipment for improving and developing commercial fisheries in India and other areas of the southeastern Asia region. Such requests were answered with the statement that Japan does have a surplus of skilled Japanese fishermen and fishing boats which can be made available to those countries which are in need of this type of highly skilled

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technical assistance. Considerable interest also was shown by delegates of several of the member nations of the Council in importing Japanese fishing gear and Japanese marine engines in connection with programs for the development of their fisheries.

j. During the period of the Council meeting the SCAP observer and the Japanese technical adviser responded to invitations to lecture on Japanese fisheries. Talks were given at two universities on the importance of fisheries to Japan's national economy and on conservation problems which have developed in some of Japan's important fisheries such as the trawl fishery of the East China Sea.

k. The meeting of the Indo-Pacific Fisheries Council at Madras provided a good example of the interest shown by many countries of the Indo-Pacific region in utilizing Japanese fishing skill and information on Japanese fishing methods in the development of their own fisheries. The meeting also gave evidence of the manner in which Japan is being cordially received in international groups and the way in which Japan can contribute to solving some of the social and economic problems involved in providing food for people in areas where the nutritional deficiency is great. This deficiency may be overcome in part by utilizing the natural resources of fish which do exist in local areas and which can be made available through a coordinated program of fisheries exploration and development.

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PRODUCTS

1. Relative Value of Various Wood Products

a. In the utilization of wood, the expenditure of energy and labor upon the raw timber to raise its value is generally a desirable practice. This is particularly true in Japan with its abundance of labor and scarcity of timber resources.

b. The value of wood in various forms in Japan has been computed by the Forestry Agency, Ministry of Agriculture and Forestry, and the Japan Paper Makers Assn, as shown in the following table. The table indicates that the value of one koku of wood is ¥1,300 in the form of an average saw log, but that it is more than three times as high in the form of plywood and newsprint. The table is a revision of the one appearing in Weekly Summary No 230.

VALUES OF VARIOUS FOREST PRODUCTS a/

Products	Units Produced From One Koku in Log Form	Value (yen/unit)	Total Value (yen)
Saw logs	1.00 koku	1,300.00	1,300
Pulpwood (Shizuoka)	1.00 koku	870.00	870
Mine props (Fukushima)	1.00 koku	590.00	590
Railroad ties, pine	2.50 pieces	260.00	650
Firewood	1.60 soseki-koku	760.00	1,216
Charcoal	0.04 metric ton	17,666.00	707
Railroad ties, oak	2.50 pieces	300.00	750
Lumber	0.65 koku	2,400.00	1,560
Gasumaki b/	0.20 metric ton	4,000.00	800
Squares	0.70 koku	1,850.00	1,295
Veneer logs	1.00 koku	2,500.00	2,500
Posts, piling	0.91 piece	4,750.00	4,323
Telephone poles	0.91 piece	4,800.00	4,368
Plywood	400.00 square shaku	1,000.00	4,000
Pulp, unbleached sulfite c/	112.00 pounds	19.00	2,128
Pulp, groundwood c/	224.00 pounds	8.80	1,971
Pulp, rayon c/	102.00 pounds	23.60	2,407
Pulp, bleached sulfite c/	112.00 pounds	21.70	2,430
Pulp, kraft c/	132.00 pounds	19.00	2,508
Paper, No 34, printing	156.00 pounds	24.39	3,805
Paper, newsprint c/	202.00 pounds	19.35	3,909
Paper, No 22, writing	134.00 pounds	32.65	4,375

a/ Values are for mean length, diameter, and grade of products and are based on wholesale prices in Tokyo, January 1951, except as noted.
b/ Small blocks of wood used for fuel in internal combustion engines.
c/ Controlled items
SOURCE: Forestry Agency, Ministry of Agriculture and Forestry; Japan Paper Makers Assn.

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MINING AND MILLING

1. Formation of Land Coordination Commission Announced

a. Dr Sakae Wagatsuma, Professor of Civil Law, Tokyo University, newly appointed chairman of the recently established Land Coordination Commission (Law No 292, December 1950), announced the formation of the Commission, with the following members: Mr S. Ide, former Minister of Education; Mr K. Sano, former Chief, Agriculture Land Bureau, Ministry of Agriculture and Forestry; Mr H. Isuda, former Chief, Mining Bureau, Ministry of International Trade and Industry; Mr Y. Morohashi, former Secretary General, Privy Council.

b. The Commission was established as the result of recommendations made by Mr Royal R. Duncan, visiting mineral law expert consultant assigned to Natural Resources Section. His final report of 16 July 1949 stated:

"(1) To obviate conflict of jurisdiction and control among government agencies, which seem to persist notwithstanding the Land Reform Law (Agricultural Adjustment Act and related laws) over land use, and controversies of that nature between individuals, it is proposed that an official body of persons be set up, appointed by the Prime Minister, to be clothed with authority to hear and determine issues respecting designation of land as valuable for mineral or for other purposes, and involving methods and measures of compensation for damage to the surface of land caused by mining and associated operations."

c. Under the terms of the Land Coordination Commission Establishment Law and the revised Mining Law (Law No 289, 1950), the Commission will perform the following functions:

(1) Designate tracts of land not proper for mining as compared with public interest in general or agriculture, forestry, or other industries (Article 15, Law No 289, 1950).

(2) Review decisions of the Ministry of International Trade and Industry Bureau Chief on applications for mining right, for increase or decrease of mining area, applications for mining lease, and cancellation of either; also decisions or awards made as to use or expropriation of land for mining purposes under the Land Expropriation Law (Law No 29, 1900, now under revision) (Article 187, Law No 289, 1950).

d. Dr Wagatsuma favors revision of the existing Expropriation Law and the Land Coordination Commission Law to give authority in the first instance to the Commission to investigate disputes, hold hearings, and make decisions or awards through regional commission offices in place of present expropriation councils appointed by prefectural governors and administered by the Ministry of Construction.

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2. Mining Industry Recapitulation, December 1950

a. The number of Japanese mines producing various minerals as of the end of December 1950 is indicated by the table below. Overlaps occur in many cases, because mines producing more than one commodity are listed as producers of each commodity. For example, most of the copper producers also produce gold and silver. (See Weekly Summary No 269 for number of mines as of 30 September 1950.)

NUMBER AND STATUS OF JAPANESE MINES, EXCLUDING COAL MINES
As of 31 December 1950

Commodity Mined	Milling Own Output	Sending Output to Custom Mill	Reporting No Output a/	Closed	Total Listed
Alunite	2	0	2	0	4
Antimony	3	0	4	0	7
Arsenic	5	0	7	0	12
Asbestos					
Amphibole	1	0	5	0	6
Chrysotile	3	0	1	0	4
Barite	5	0	0	0	5
Chromite					
High-grade	6	0	3	0	9
Low-grade	4	0	0	0	4
Clay					
Fire clay	112	0	18	0	130
Ball clay (washed)	30	0	0	0	30
Ball clay (unwashed)	13	0	1	0	14
Kaolin	6	0	1	1	8
Pottery stone	23	0	6	0	29
Cobalt	0	0	1	0	1
Copper	121	8	89	0	214 b/
Diaspore	3	0	3	0	6
Dolomite	21	0	7	0	28
Feldspar					
Pure feldspar	25	0	16	0	41
Aplite	7	0	1	0	8
Substitute feldspar	7	0	7	0	14
Fluorite	3	0	0	0	3
Gold	80	5	66	0	148 c/
Graphite					
Amorphous	4	0	11	0	15
Crystalline	4	0	6	0	10
Gypsum					
High-grade	13	0	19	0	32
Low-grade	20	0	11	0	31

(Cont'd)

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NUMBER AND STATUS OF JAPANESE MINES, EXCLUDING COAL MINES (Cont'd)
As of 30 December 1950

Commodity Mined	Milling Own Output	Sending Output to Custom Mill	Reporting No Output a/	Closed	Total Listed
Iron ore	33	0	22	ND	55
Iron sand	16	9	9	0	25
Lead	18	7	17	0	41 d/
Limestone	309	0	173	0	482
Manganese					
Dioxide	20 e/	0	32 f/	0	52 e/f/
Others	109 e/	0	61	0	170 e/
Mercury	2	0	3	0	5
Molybdenum	3	0	4 f/	0	7 f/
Phosphate rock	1	0	0	0	1
Pyrite	74	5	49	0	126 g/
Pyrophyllite	51	0	8	0	59
Pyrophyllite powder	41	0	0	0	41
Realgar	1	0	0	0	1
Silica					
Artificial silica	25	0	2	0	27
Brick silica	104	0	14	0	118
Gaerome silica	26	0	0	0	26
Silica powder	22	0	2	0	24
Silica sand (+95%)	47	0	2	1	50
Silica sand (-95%)	15	0	1	0	16
Soft silica	17	0	3	0	20
White silica	40	0	14	0	54
Silver	94	6	70	0	167 c/
Sulfur	19	0	1	0	20
Talc	23	0	18	0	41
Tin	5	0	0	0	5
Titanium	4	0	0	0	4
Tungsten	1	0	10	0	11
Zinc	20	8	20	0	47 d/

a/ Reporting output as no data, trace, or zero.
b/ Four mines appear in both columns 1 and 2.
c/ Three mines appear in both columns 1 and 2.
d/ One mine appears in both columns 1 and 2.
e/ Other small mines reported as producing, but not listed individually.
f/ Other small mines reported as no output, but not listed individually.
g/ Two mines appear in both columns 1 and 2.
ND: No data available
SOURCE: Ministry of International Trade and Industry

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HYDROLOGY

1. Technical Examination of Ground Water Conditions at Choshi and Chiba

a. Mr M. L. Brashears, visiting expert consultant, and other Natural Resources Section personnel made a technical examination of ground water conditions at Choshi and Chiba cities, Chiba Prefecture. Investigation showed that increase in consumption of water by industry and the general public in these cities requires expansion of water sources.

b. The existing public water supply plant at Choshi City consists of eight deep wells that tap an aquifer of limited extent. This aquifer is tapped also by several industrial wells, and a study by the Ministry of Agriculture and Forestry indicates it would be unwise to develop additional ground water because of limited recharge. Choshi City officials plan to obtain additional water from a nearby stream.

c. Records of a general character indicate a progressive lowering of artesian pressure at Choshi City in the past decade. Pumpage at Choshi City may exceed the safe yield, and as the aquifer extends beneath the tidal estuary of the Tone River salting may occur ultimately.

d. The public water supply at Chiba City is obtained from nine deep wells at two pumping plants. Two or more additional wells will be drilled in 1951. The widespread aquifer that has been tapped extends beneath Tokyo Bay.

e. Pumping at Chiba City has caused regional lowering of artesian pressure and cessation of flow in the vicinity of the main pumping plant. Haphazard spacing of wells has resulted in mutual interference and abandonment of wells. No evidence of salt encroachment was found.

f. Method of well construction practiced at Choshi and Chiba cities has resulted in relatively inefficient production and relatively short productive life. Use of multiple strainers spread draft to several distinct water-bearing beds, but this becomes a hazard should salting occur.

g. Natural Resources Section personnel made tentative recommendations that:

(1) A program of periodic measurement of artesian pressure, preferably in non-pumped key wells, should be initiated at Choshi and Chiba cities, to determine extent and rate of development of regional lowering of pressure.

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(2) Pumping tests should be made at Choshi and Chiba cities to determine the safe yield of each area, potential danger of salting, and proper spacing of wells.

(3) Periodic sampling of chloride content of well water should be initiated.

(4) Modern methods of well development should be adopted to maintain yield of existing wells at original level. Modern methods should be used whenever additional wells are drilled so as to produce efficient installations.

2. Flood Prevention, Flood Control, and Watershed Management in Japan

a. The following is a continuation of a series of articles on flood prevention, flood control, and watershed management in Japan started in Weekly Summary No 265 and continued weekly since that time. The material presented below continues from Weekly Summary No 275, the section entitled, "Flood Prevention, Flood Control, and Watershed Management Practice".

(5) Floods (Continued)

(c) Affected Areas: As determined by analysis of the Report on Meteorological Disasters in Japan cited in Weekly Summary 280, every prefecture has been subjected to flooding in some part of its area on several occasions during the 1900-47 period. Although flood intensities probably vary considerably according to the basic cause of the floods, it has not been possible to determine the relative amounts of damage caused by floods arising from typhoon rains and those caused by rainfall associated with summer storms, the rainy season, or the local disturbances, translated by the Japanese as "hurricanes". Because of the relatively limited area affected by the summer storms and hurricanes, the frequency of occurrence is not necessarily a measure of the size of the floods caused by such storms. By the same token, the broad paths followed by most typhoons, which are less frequent than the torrential rainstorms, bring about widespread flooding, often affecting more than one-half of Japan's area.

1 In the Table on page 37 the political subdivisions of Japan are listed in order of flood frequency during 1900-47. Although frequent floods are reported for Hokkaido, which is well ahead of the other prefectures, most of the floods were limited to the south coastal area from Hakodate east beyond Muroran and in large part were caused by relatively localized rains. Tokyo's position in fourth place may arise in part because of the exposed low-lying areas in many districts of Tokyo city, and in part because a greater percentage of floods

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are recorded because of its role as capital of Japan. Other prefectures ranking high in flood frequency gain their positions because of being in the typhoon belt; only Niigata, which ranks second, is under the influence of frequent nontyphoon rains.

2 Of somewhat more significance in the flood picture are the data in the table on page 38, which give the causes of floods and the order of frequency by prefecture. Exclusive of Hokkaido and Tokyo, the first 15 prefectures in order of frequency of floods caused by typhoons are in Kyushu, Shikoku, or along the southern coast of western Honshu. Five out of seven prefectures in Kyushu, three out of four prefectures in Shikoku, and seven out of eight prefectures in southwest Honshu are among this group. The position of Tokyo may in some measure be caused, as pointed out previously, by its political function, rather than by the frequency of important floods resulting from typhoons. Some question concerning the position of Hokkaido might well be asked also, particularly in view of the limited importance of typhoons to the flood picture in Akita, Iwate, and Aomori prefectures. Other anomolies also probably exist. A rough measure of the influence of typhoons on an areal basis may be gained from the fact that the 114 typhoons reported in Weekly Summary No 280 affected 450 prefectural areas or a total of 4.8 prefectures per typhoon.

3 A somewhat less well defined pattern is found with respect to the floods caused by torrential rains. The position of Hokkaido again is open to some question, but Shizuoka, Nagano, and Tokyo experience frequent rains during the summer rainy season and the period of local line squalls. Niigata's rainy season is early in the year. The rather limited extent of the torrential rains is roughly illustrated by the fact that the 194 occurrences during 1900-47 affected 325 prefectural areas or an average of 1.6 prefectures per storm.

FLOOD FREQUENCIES BY PREFECTURES, 1900-47

	Prefectures	Occurrences		Prefectures	Occurrences
1.	Hokkaido	64	11.	Shizuoka	24
2.	Niigata	33	12.	Aichi	23
3.	Miyazaki	31	13.	Osaka	22
4.	Tokyo	30	14.	Wakayama	20
5.	Kagoshima	29	15.	Yamaguchi	20
6.	Kochi	27	16.	Nagasaki	20
7.	Fukuoka	27	17.	Miyagi	20
8.	Hiroshima	26	18.	Kumamoto	20
9.	Hyogo	24	19.	Chiba	20
10.	Nagano	24	20.	Tochigi	20

(Cont'd)

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FLOOD FREQUENCIES BY PREFECTURES, 1900-47 (Cont'd)

	Prefectures	Occurrences		Prefectures	Occurrences
21.	Okayama	19	34.	Gifu	15
22.	Kanagawa	19	35.	Mie	14
23.	Fukui	19	36.	Iwate	12
24.	Fukushima	18	37.	Ishikawa	12
25.	Aomori	18	38.	Kagawa	11
26.	Ehime	17	39.	Gumma	11
27.	Saga	17	40.	Yamagata	11
28.	Tokushima	16	41.	Yamanashi	10
29.	Oita	16	42.	Saitama	9
30.	Shimane	16	43.	Shiga	8
31.	Ibaraki	16	44.	Nara	6
32.	Kyoto	16	45.	Akita	6
33.	Tottori	15	46.	Toyama	4

SOURCE: Resources Council, Economic Stabilization Board, Report No 17, 15 July 1949. Report on Meteorological Disasters in Japan, 1900-47, edited by the Central Meteorological Observatory, Tokyo.

CAUSES OF FLOODS IN JAPAN BY PREFECTURE AND FREQUENCY, 1900-47

Typhoons a/			Torrential Rain a/	
	Prefecture	Occurrences	Prefecture	Occurrences
1.	Miyazaki	29	Hokkaido	44
2.	Kagoshima	28	Niigata	21
3.	Hiroshima	21	Shizuoka	16
4.	Hokkaido	20	Nagano	13
5.	Kochi	18	Tokyo	12
6.	Tokyo	18	Fukuoka	11
7.	Fukuoka	16	Aomori	11
8.	Hyogo	16	Aichi	9
9.	Tokushima	15	Tochigi	9
10.	Osaka	15	Fukui	9
11.	Wakayama	14	Kochi	9
12.	Okayama	14	Chiba	8
13.	Yamaguchi	14	Kyoto	8
14.	Ehime	14	Hyogo	8
15.	Oita	14	Kumamoto	8
16.	Nagasaki	14	Miyagi	7
17.	Aichi	14	Fukushima	7
18.	Miyagi	13	Kanagawa	7
19.	Tottori	13	Osaka	7
20.	Niigata	12	Ibaraki	6

(Cont'd)

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CAUSES OF FLOODS IN JAPAN BY PREFECTURE AND FREQUENCY, 1900-47 (Cont'd)

Typhoons a/			Torrential Rain a/	
	Prefecture	Occurrences	Prefecture	Occurrences
21.	Saga	12	Nagasaki	6
22.	Kumamoto	12	Ishikawa	6
23.	Chiba	12	Gifu	6
24.	Kanagawa	12	Wakayama	6
25.	Fukushima	11	Yamaguchi	6
26.	Tochigi	11	Iwate	5
27.	Nagano	11	Saga	5
28.	Shimane	11	Yamagata	5
29.	Kagawa	11	Shimane	5
30.	Ibaraki	10	Okayama	5
31.	Fukui	10	Hiroshima	5
32.	Mie	10	Gumma	4
33.	Gifu	9	Shiga	4
34.	Kyoto	8	Mie	4
35.	Yamanashi	8	Akita	3
36.	Shizuoka	8	Saitama	3
37.	Gumma	7	Ehime	3
38.	Iwate	7	Tottori	2
39.	Aomori	7	Yamanashi	2
40.	Yamagata	6	Nara	2
41.	Saitama	6	Toyama	2
42.	Ishikawa	6	Oita	2
43.	Shiga	4	Miyazaki	2
44.	Nara	4	Kagoshima	1
45.	Akita	3	Tokushima	1
46.	Toyama	2	Kagawa	0

a/ The total will not be the same as the number of storms in the preceding table because in many instances several prefectures are affected by the same storm.

SOURCE: Resources Council, Economic Stabilization Board, Report No 17, 15 July 1949. Report on Meteorological Disasters in Japan, 1900-47, edited by the Central Metecrological Observatory, Tokyo.

PETROLEUM

1. Important Research Aid for Oil Exploration Received by Tohoku University

a. Prof S. Hanzawa, Institute of Geology and Paleontology, Tohoku University, has informed Natural Resources Section of the receipt of the Catalogue of Foraminifera, compiled under the direction of Dr Brooks F. Ellis of the American Museum of Natural History. Professor Hanzawa