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限りない可能性。

#IYM2023



Hirse  
Straße



# A Historical Sketch of Millets in Japan

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Plants and People Museum

FAO Web seminar  
11 July 2023

**Table 1. Six species of millets and buckwheat**

English name	Scientific name	Japanese name	growth habit	endosperm starch	wild type	geographical origin	dispersal period
a foxtail millet	<i>Setaria italica</i>	awa, 栗	annual	waxy/non-waxy	<i>S. italica</i> ssp. <i>viridis</i>	Central Asia	late Jomon
b proso millet	<i>Panicum miliaceum</i>	kibi, 糜、稷	annual	waxy/non-waxy	<i>P. miliaceum</i> ssp. <i>ruderale</i>	Central Asia	late Jomon
c sorghum	<i>Sorghum bicolor</i>	morokoshi,	annual	waxy	<i>S. bicolor</i> var. <i>verticilliflorum</i>	Africa	5~8 Century AD
d finger millet	<i>Eleusine coracana</i>	shikokubie, 四国稗	annual	non-waxy	<i>E. coracana</i> var. <i>africana</i>	East Africa	ancient?
e Japanese barnyard millet	<i>Echinochloa utilis</i>	hie, 稗	annual	non-waxy	<i>Ec. crus-galli</i>	Japan	early Jomon
f Job's tear	<i>Coix lacryma-jobi</i> var. <i>ma-yuen</i>	hatomugi, 鳩麦	perennial	waxy	<i>Coix lacryma-jobi</i> var. <i>lacryma-jobi</i>	South East Asia	1716~1735AD
g buckwheat	<i>Fagopyrum esculentum</i>	soba, 蕎麦	annual	non-waxy	<i>Fagopyrum esculentum</i> ssp. <i>ancestralis</i>	South West China	early Jomon



e



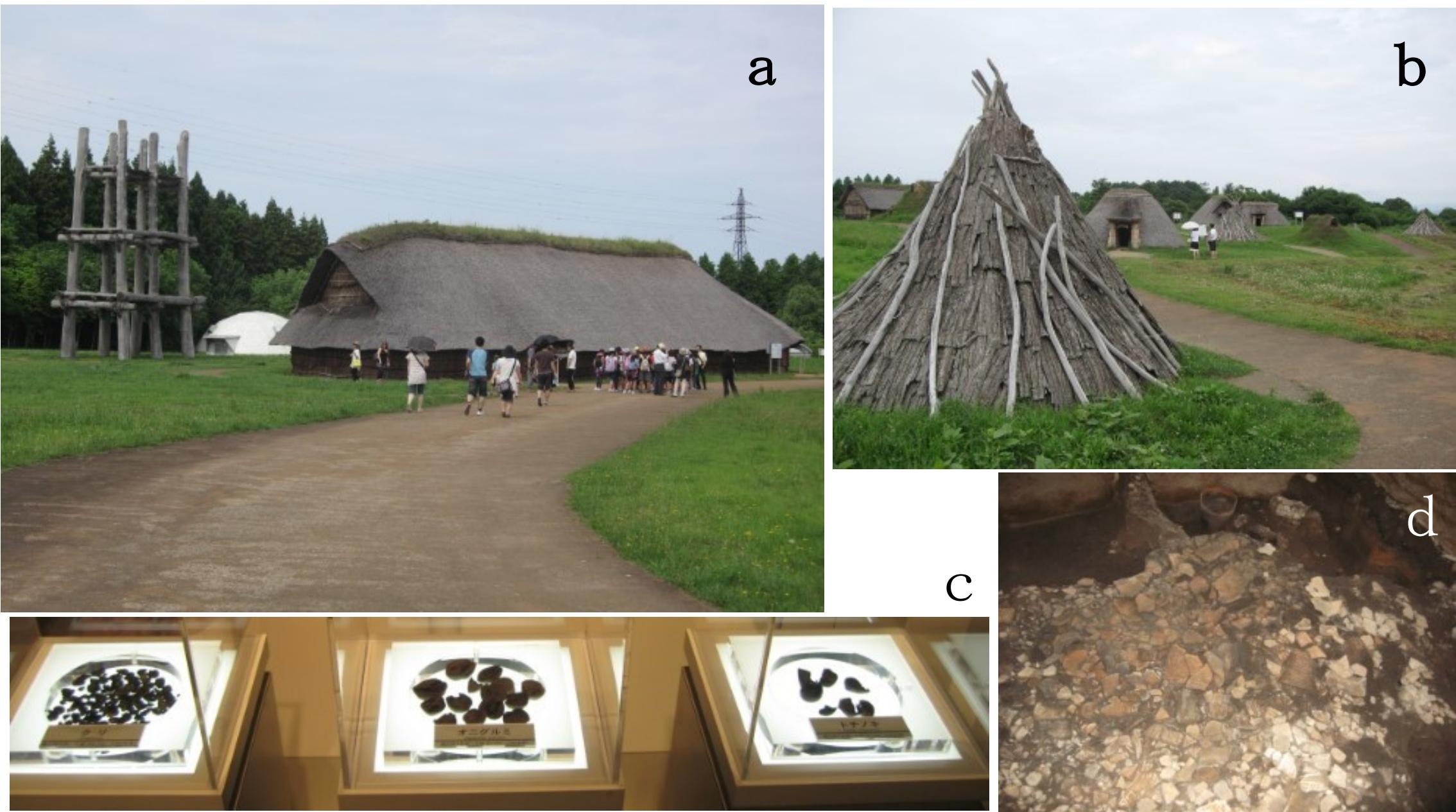
f



g



Jomon, the historical period in Japan, ca. 17000BC~1000BC



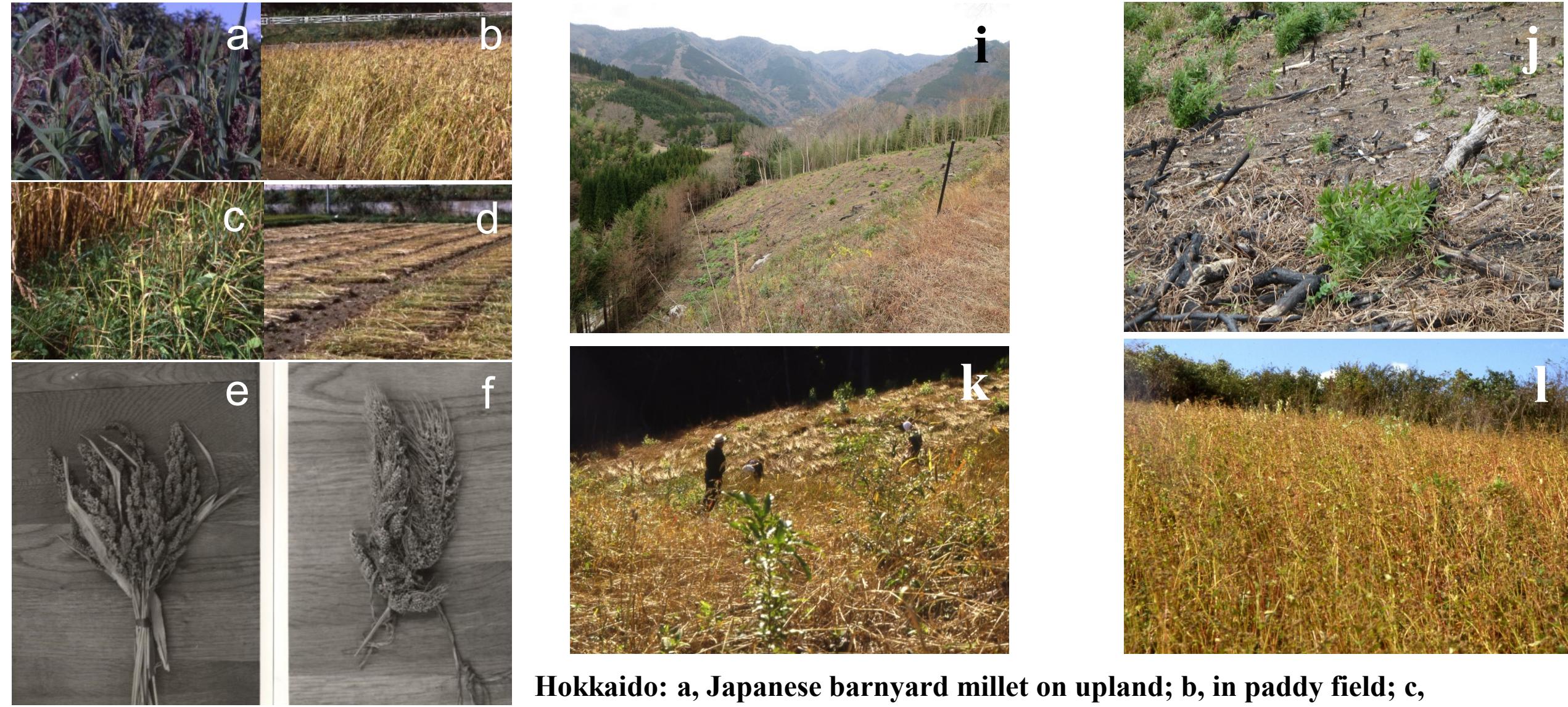
The remains of ancient Jomon village Sannaimaruyama restored in Aomori Pref.: a ; a big house and tower, b ; village, c ; plant artifact excavated, d ; straw rope-patterned ancient Japanese pottery.



The remains of ancient Jomon village Katsusaka restored in Kanagawa pref.: a ; village, b ; straw rope-patterned ancient Japanese pottery, c ; grindstone excavated, d ; inside of a house, e; traditional processing method of grains.

**a****b****c**

The remains of ancient Yayoi village: a, a paddy field of rice and upland field of foxtail millet at Nabatake restored in Saga pref.; b, a paddy of rice at Itatsuke, Fukuoka pref.; c ; a large village surrounded by trench at Yoshinogari in Saga pref.



**Hokkaido:** a, Japanese barnyard millet on upland; b, in paddy field; c, *Echinochloa crus-galli* on levee; d, base cut and drying; e, Nanubie, a variety from Tohoku region; f, Ainubie (*piyapa*), a local variety of Ainu tribe. Iwate pref.: g, Japanese barnyard millet in paddy field; h, *E. crus-galli* on levee. **Miyazaki pref.:** i, a burn yard; j, a field burnt; k, base cut and drying : l, buckwheat on the field.



Yamanashi pref.: a, a nursery of finger millet among maize; b, a honest farmer, Shizuo FURUYA with finger millet; c, a paddy field in the mountainous area.

Karnataka, India: d, a nursery of finger millet; e, transplanting seedlings of finger millet in paddy fields.

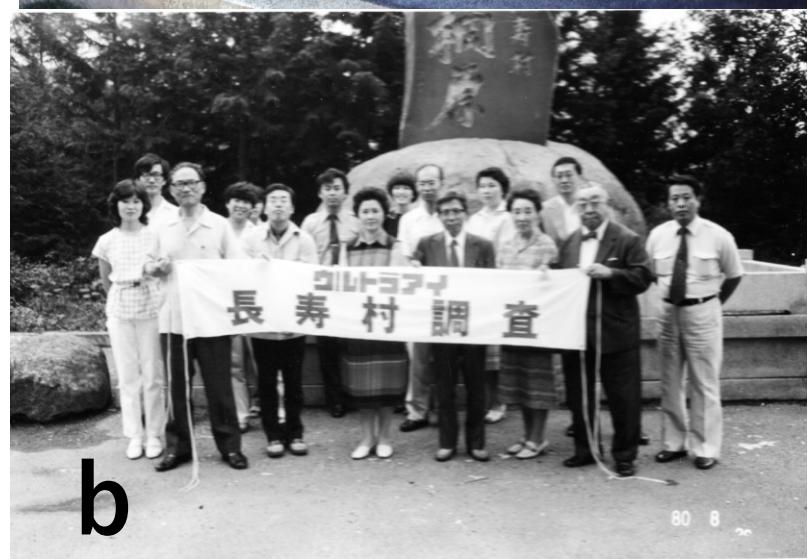


Saihara, Yamanashi pref.: e, many varieties of millets at the entrance of a farmer' s house; f, upland field mixed with many species of crops.

Sagamihara, Kanagawa pref. : a, an old storehouse ; b, the inside, *kokuso* stored seeds against famine; c, foxtail millet and d, upland rice.



a, sorghum at Tabayama; b, finger millet at Uenohara:  
c, an exhibition at Sagamihara: d, an exhibition booth  
of millets at the CBD/COP10 in Nagoya, Aichi pref.



Many researchers visited Uenohara, Yamanashi pref.: a, A. MATSUTANI (archeology), T. KOMORI (healthy longevity) and A. SEETHARAM (Millets) from India; b, TV program on their longevity at Yuzurihara village; c/d, K. HASHIMOTO had conserved many local varieties of millets; e/f, Mr. & Mrs. FURUYA had grown many crops. Many researchers visited their fields.



a, pounding *mochi*, a kind of waxy cake; b/c, dumplings made from sorghum in Japan; d, boiled grain made of sorghum and foxtail millet in Karnataka, India.



a



b



c



e



f

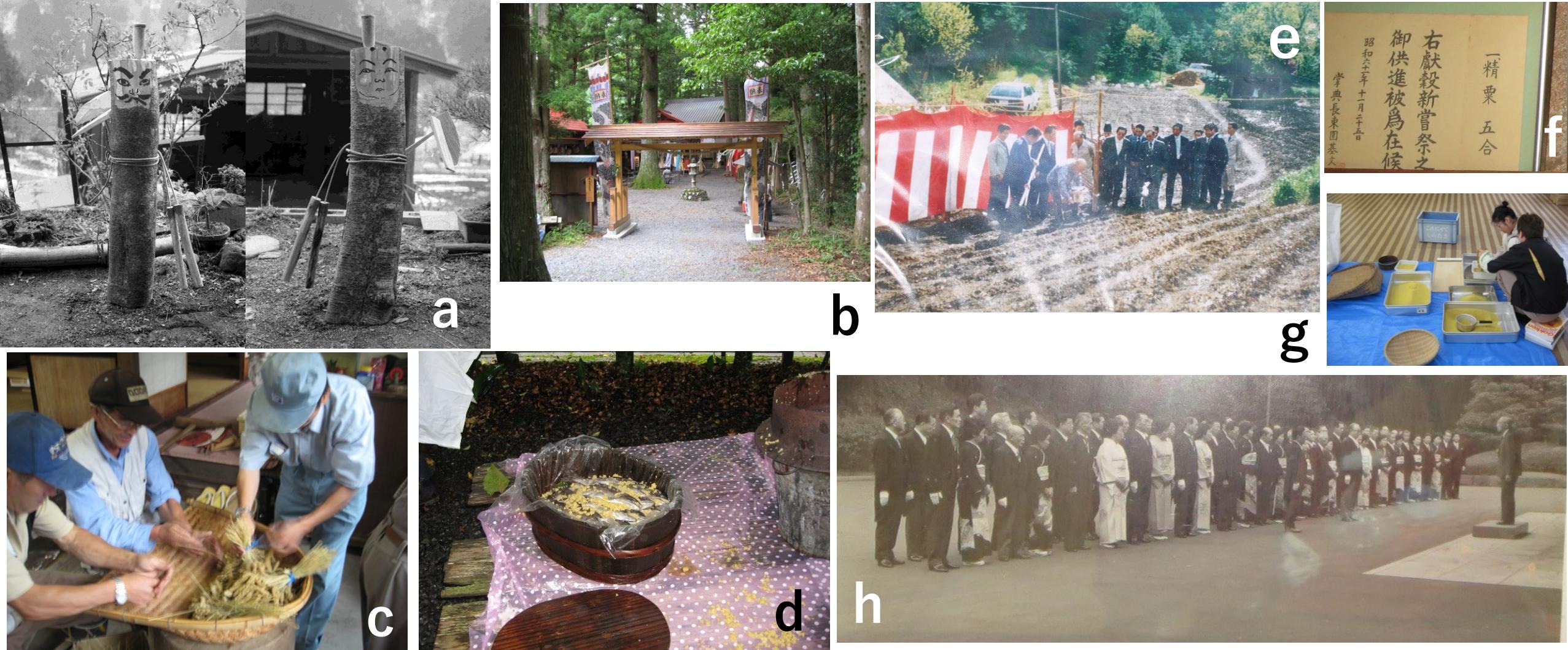


g

a, *oneri*, a kind of mash made from finger millet; b, from buckwheat in Japan; c, *mude* from finger millet in Karnataka, India. d, *dango*, a kind of dumpling in Gunma pref.; e, *mochi* made from finger millet in Tokyo. f, *ganji*, gruel made from finger millet in Karnataka: g, *kayu* made from Japanese barnyard millet in Yamanashi pref.



**Parboil processing:** a/b/c/d, *kuromushi-hou* to grains of Japanese barnyard millet, via boiling, to drying grains in Gunma pref., Japan; e, from *samai* grains in Tamil Nadu, India. f/g/h, **wet milling**: *shito*, made from Japanese barnyard millet and foxtail millet by *Ainu* people in Hokkaido; i/j, *mavu* made from *kodora*, foxtail millet and rice, k, *pidi mavu* in Tamil Nadu, India.

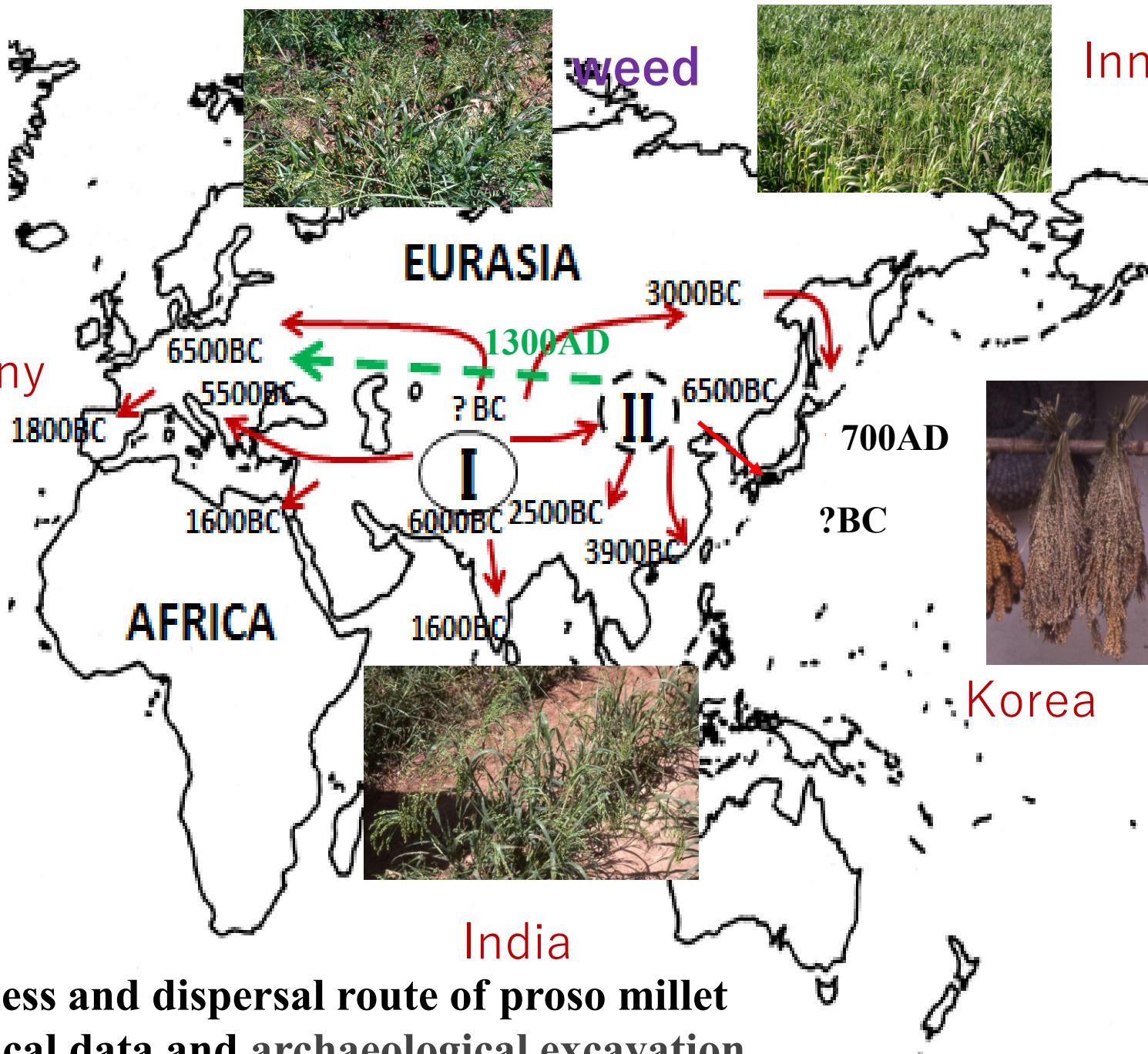


a, *katsunbo* gods will promise farmers good harvest in the coming autumn. They have spikes of foxtail and Japanese barnyard millet, also sickle and hoe. b, *Osuwa-sama* god shrine for hunters; c, threshing foxtail millet by hands; d, offer a kind of *sushi*, *yamame* fish staffed boiled grains for the god. e/f/g/h, offer foxtail millet for *niiname-sai*, an important harvest ceremony held by Japanese Emperor at Kosuge, Yamanashi pref. (1986 and 2008) and in the Imperial Palace.

Uzbekistan

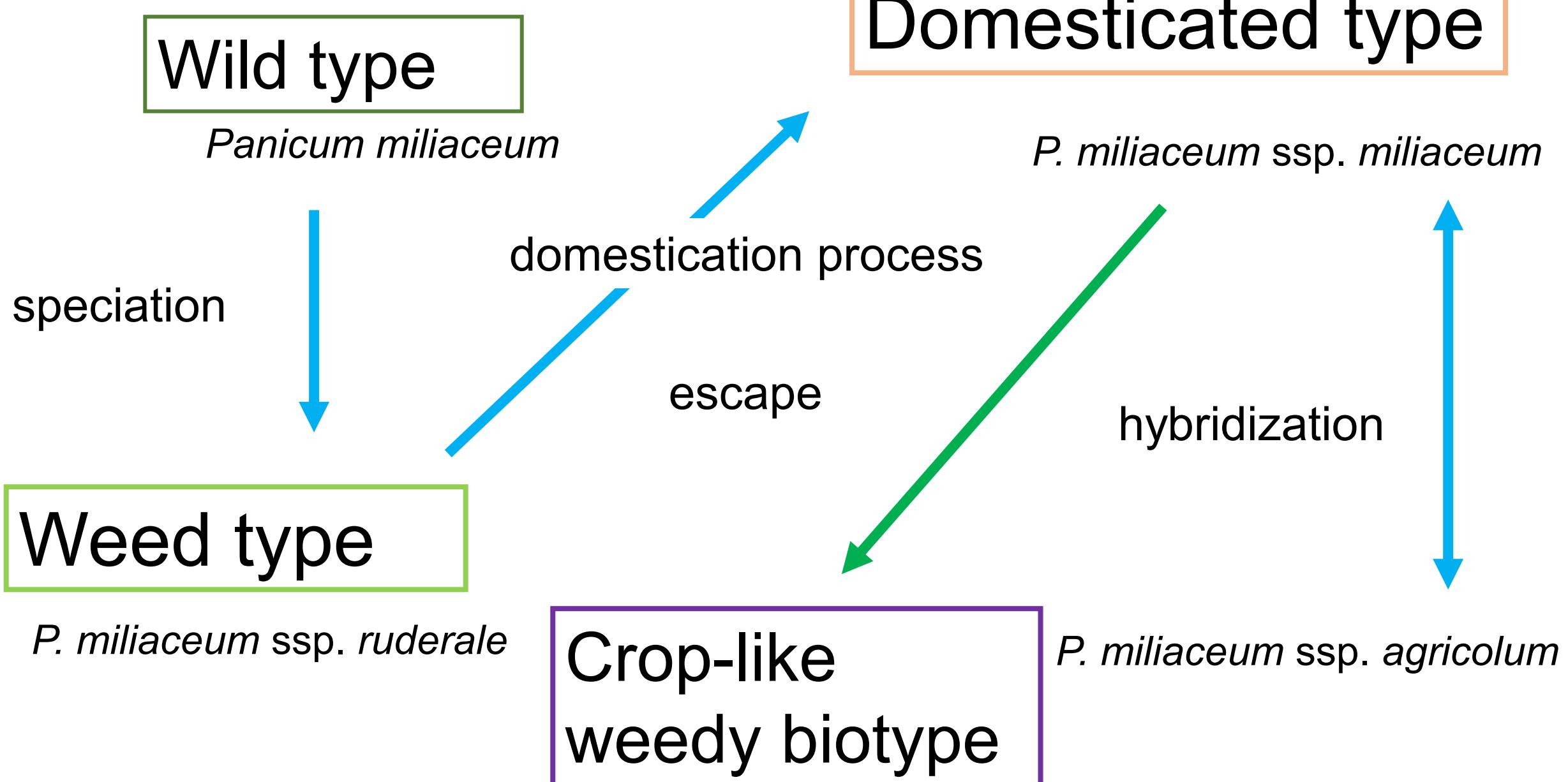


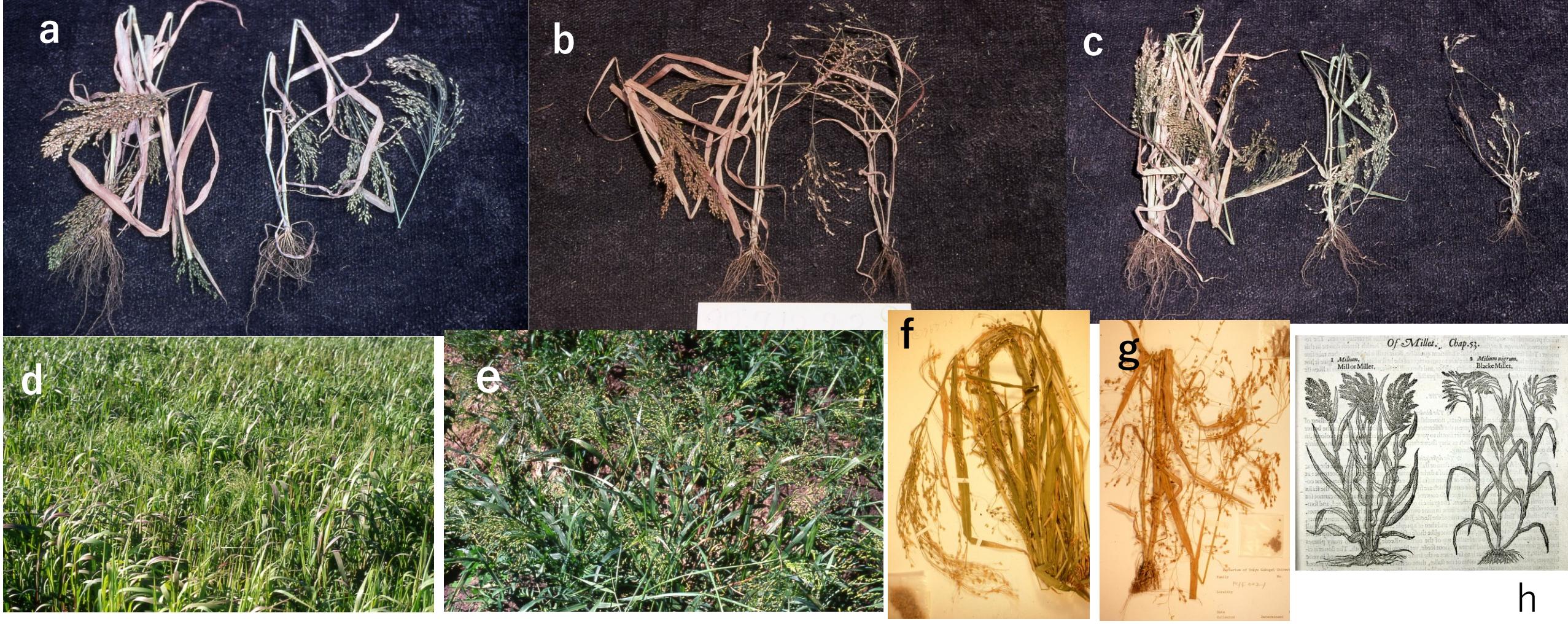
Germany



Domestication process and dispersal route of proso millet  
based on the botanical data and archaeological excavation

## Domestication process of proso millet

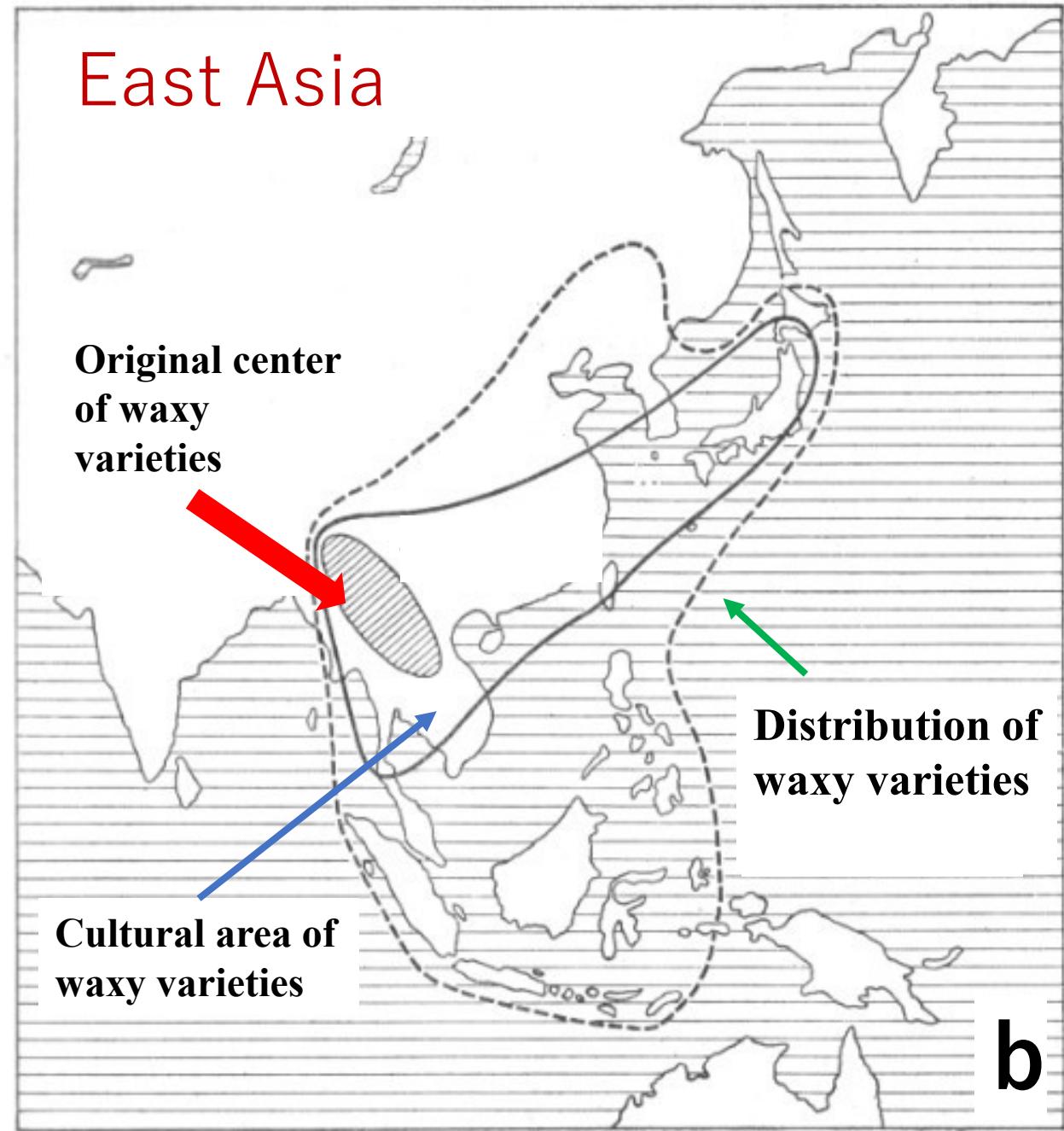
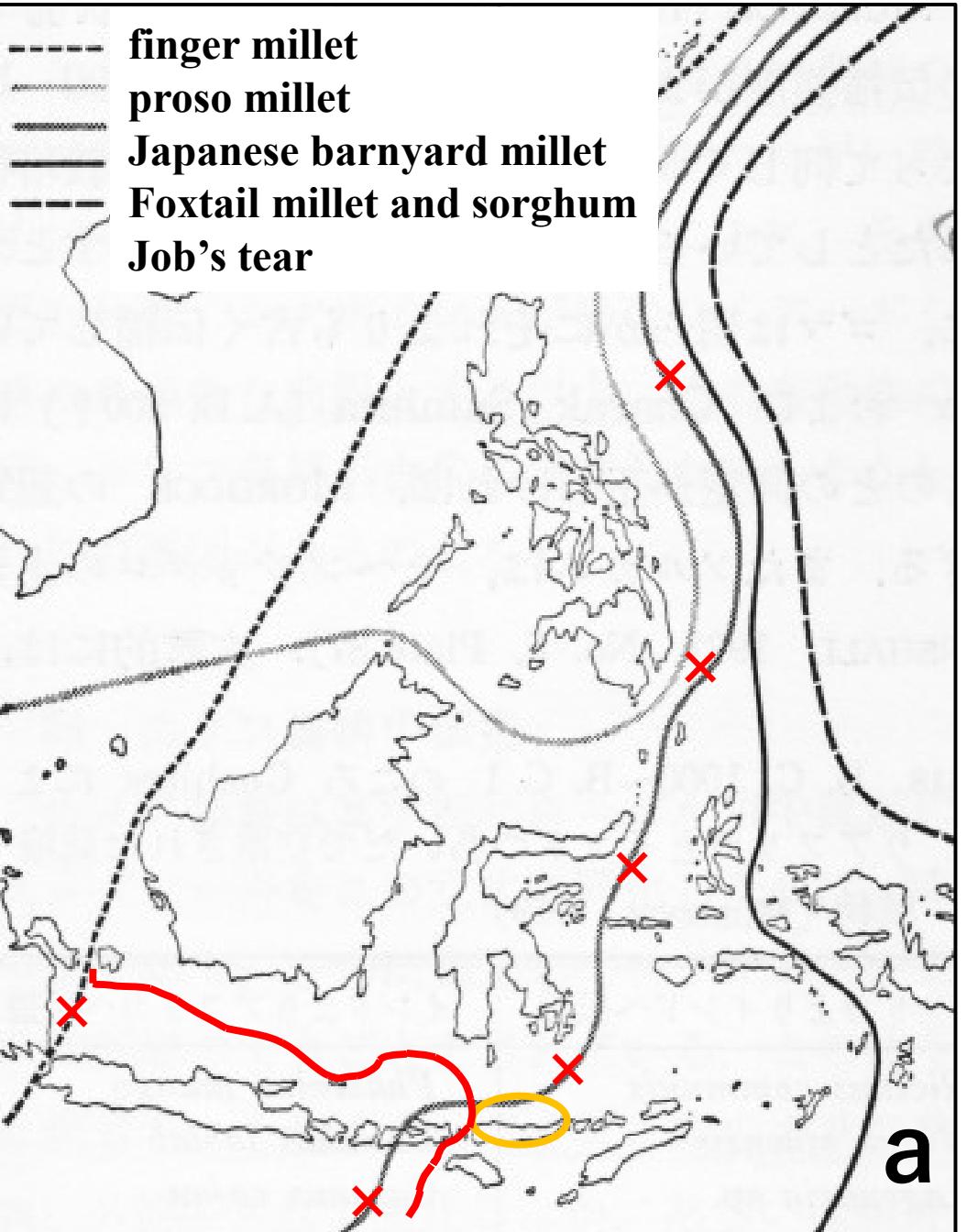




a, domesticated type; b, domesticated type and weed type ssp. *ruderale*; c, domesticated type, ssp. *agricolum* and mimic companion weed in Central Asia; d/e, domesticated type and weed type in Inner Mongolia; f, weedy biotype; g, F1 hybrid in Pakistan; proso millet in old Europe (Jhon Gerarde 1597).

**a****b****c****d****e****f**

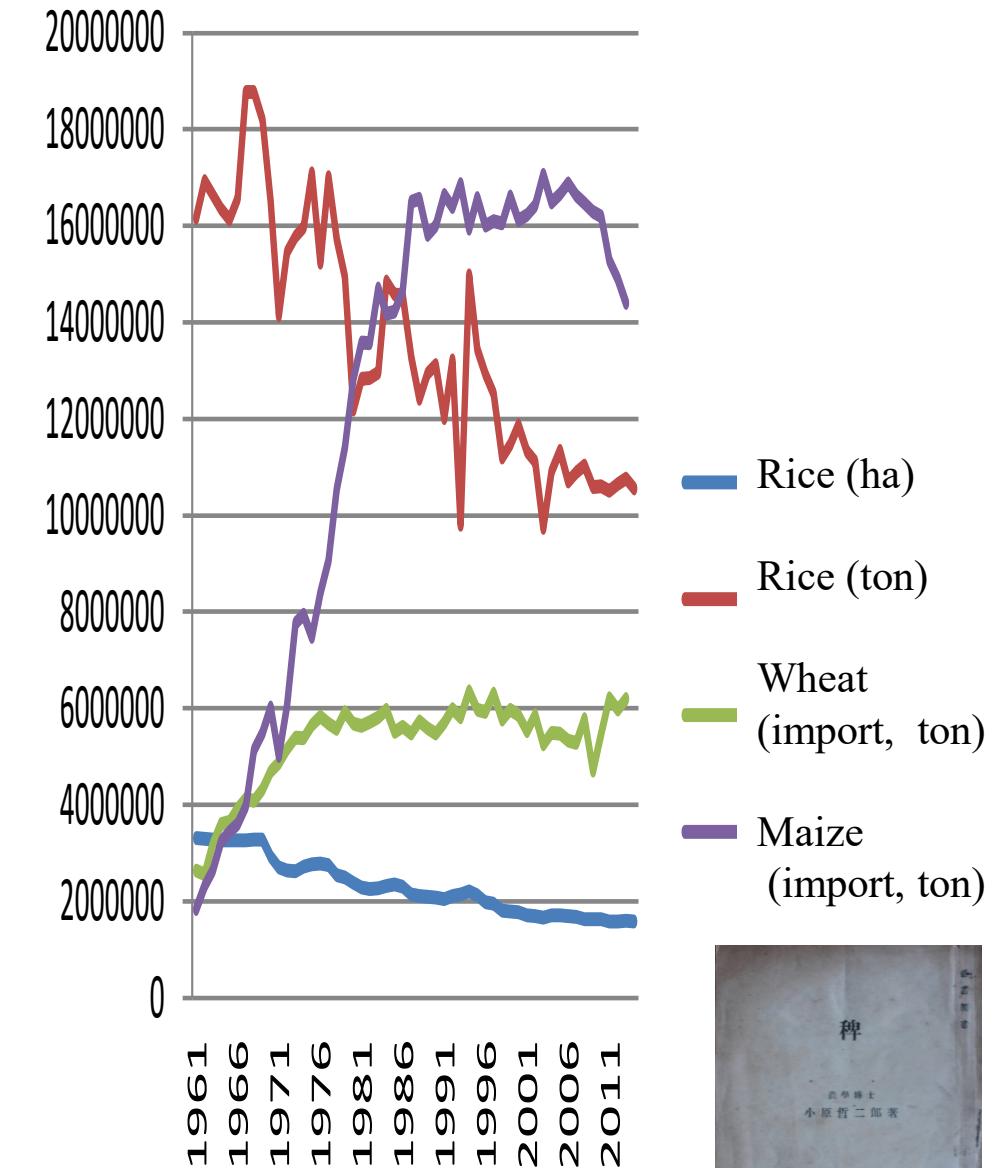
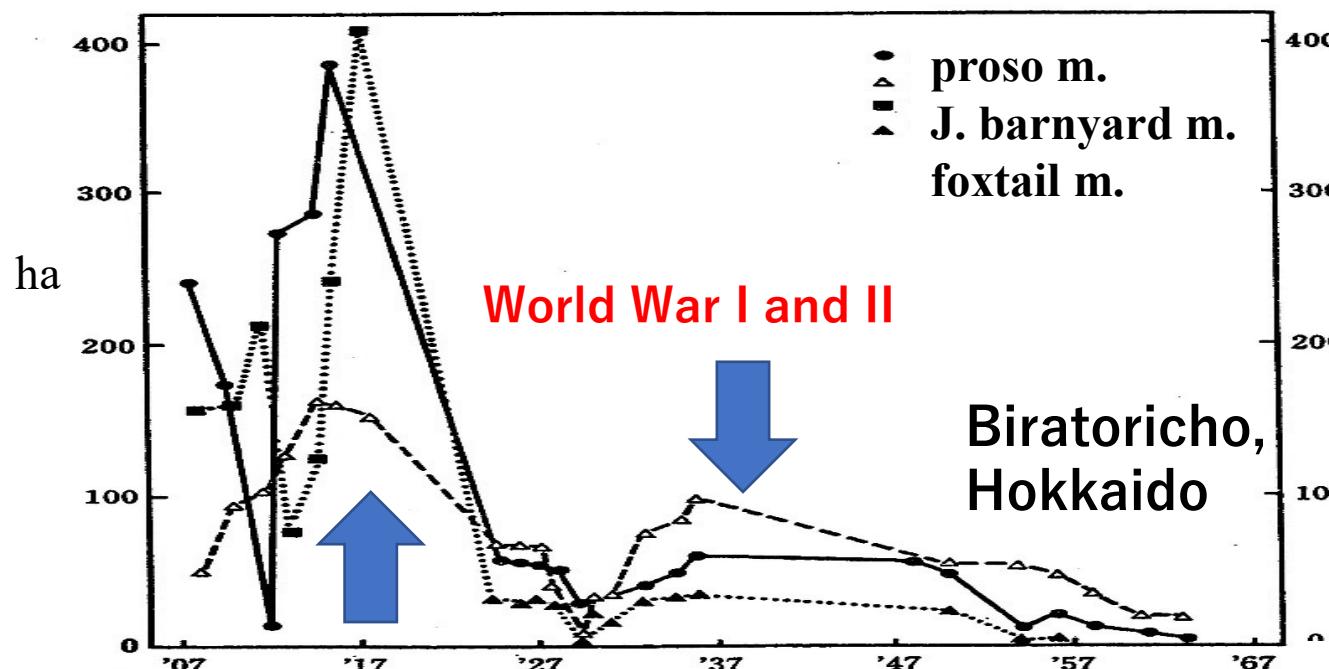
**a**, boiled grain mixed with rice (non-waxy) and proso millet (waxy); **b**, *mochi* dumpling; **c**, *okowa*, steamed mixed grain (waxy).; **d**, *chimaki* wrapped in bamboo leaf. **e**, *kasha* gruel at a nursery school in Tashkent, Uzbekistan; **f**, milk tea with roasted grains in Inner Mongolia.



a; Shikano (1946) modified; b, Sakamoto (1989) modified

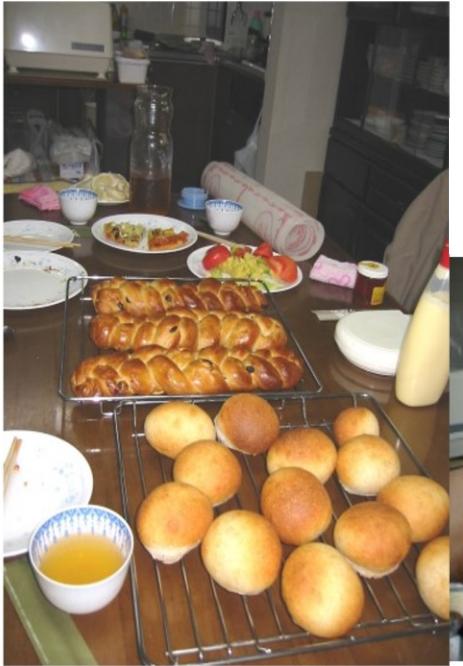
# Cultivation area (ha) of millets as orphan crops

Millet	1900	1950	1990	2001	2002	2003	2022
foxtail millet	243,700	66,100	44	50	53	44	
proso millet	34,100	26,200	146	169	152	121	
Japanese barnyard millet	71,900	33,200	290	110	150	156	
sorghum						22	
finger millet						trace	
Job's tear				344	312	358	
Total	349,700	125,500	480	673	667	701	295
buckwheat			41,800	41,400	34,500	66,600	
tartar buckwheat						14	
amaranth				15	11	18	



Japanese barnyard millet  
published in August 5<sup>th</sup>, 1945





Bread made from finger millet



Lunch menu at Kosuge restaurant and many kind of foods.



Alcoholic drinks made from proso, foxtail and Japanese barnyard millet.



Magazines of millets

ISSN0919-9705

**雑穀研究 No.37** (2022年12月)



タカキビ (徳島県つるぎ町)

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おおじま農婦さんインタビュー



## Textile and a tale of Millet



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