Nori Cultivation

Nori menu

令和元年　上半期ノリ輸出金額　国別ベストテン【1～6月累計】

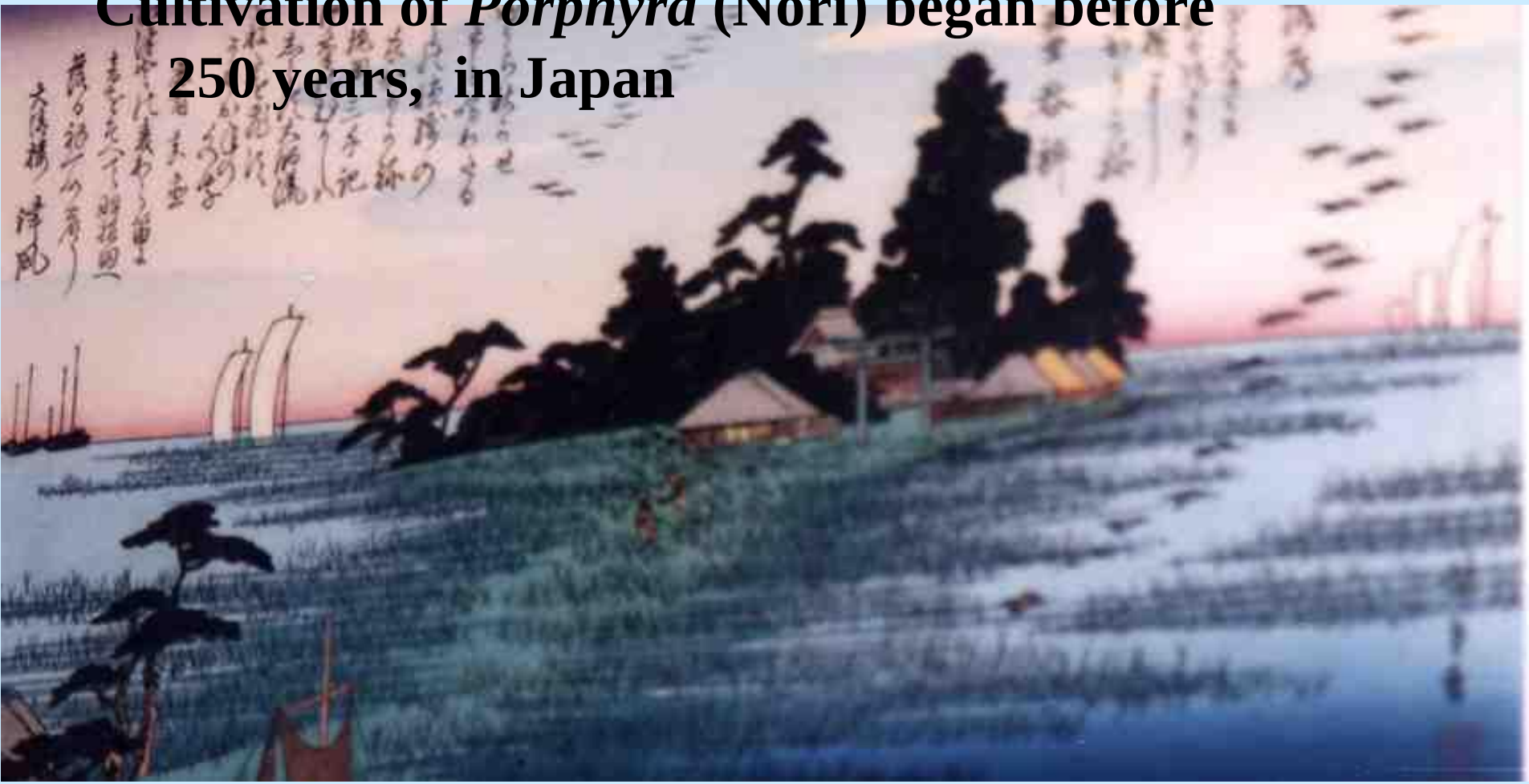
（財務省関税局貿易統計資料より作成

順位	ノ 国 名	焼・味付けノリ		順位	国 名	干 ノ リ	
		数量（kg）	金額（千円）			数量（千枚）	金額（千円）
1①	香　港	37,027	86,064	1①	アメリカ合衆国	6,231	151,064
2③	イタリア	9,805	65,119	2－	香　港	530	12,924
3⑥	ニュージーランド	4,748	40,503	3－	中　国	3,816	12,020
4②	アメリカ合衆国	6,617	40,137	4③	オランダ	171	3,024
5④	スイス	6,175	37,987	5⑤	イタリア	63	1,514
6⑦	ノルウェー	3,096	26,899	6④	大韓民国	40	1,376
7⑤	オランダ	3,582	21,179	7－	ロシア	24	694
8⑧	台　湾	9,730	17,421	8⑦	フランス	32	686
9－	シンガポール	3,866	16,591	9－	イスラエル	24	490
10⑩	アラブ首長国連邦	2,567	16,388	10－	インド	41	482

表題の和暦は、平成31年1月～4月を含めて令和元年と表記しました。

（順位の○の中の数字は昨年の上半期順位）

Cultivation of *Porphyra* (Nori) began before 250 years, in Japan



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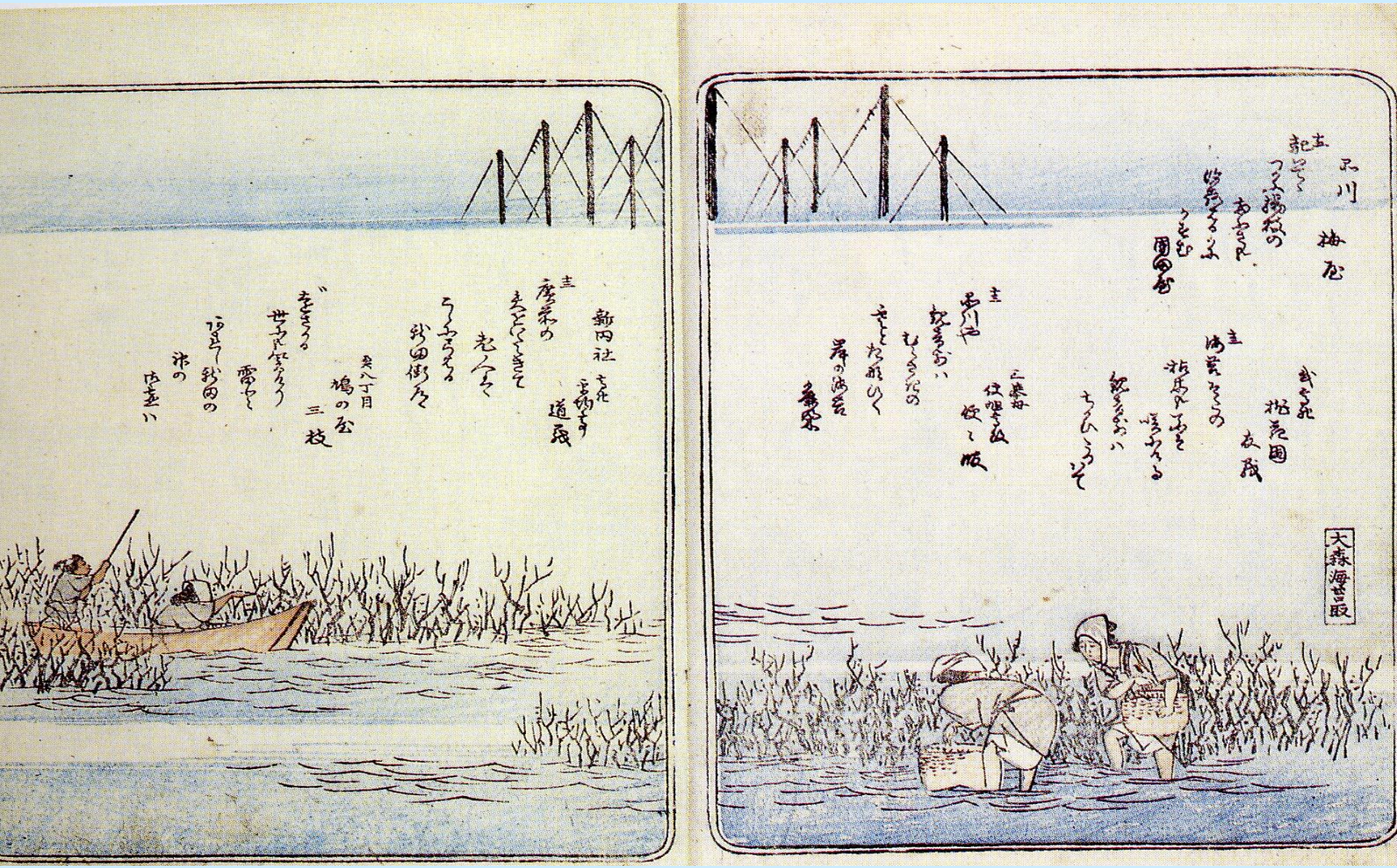
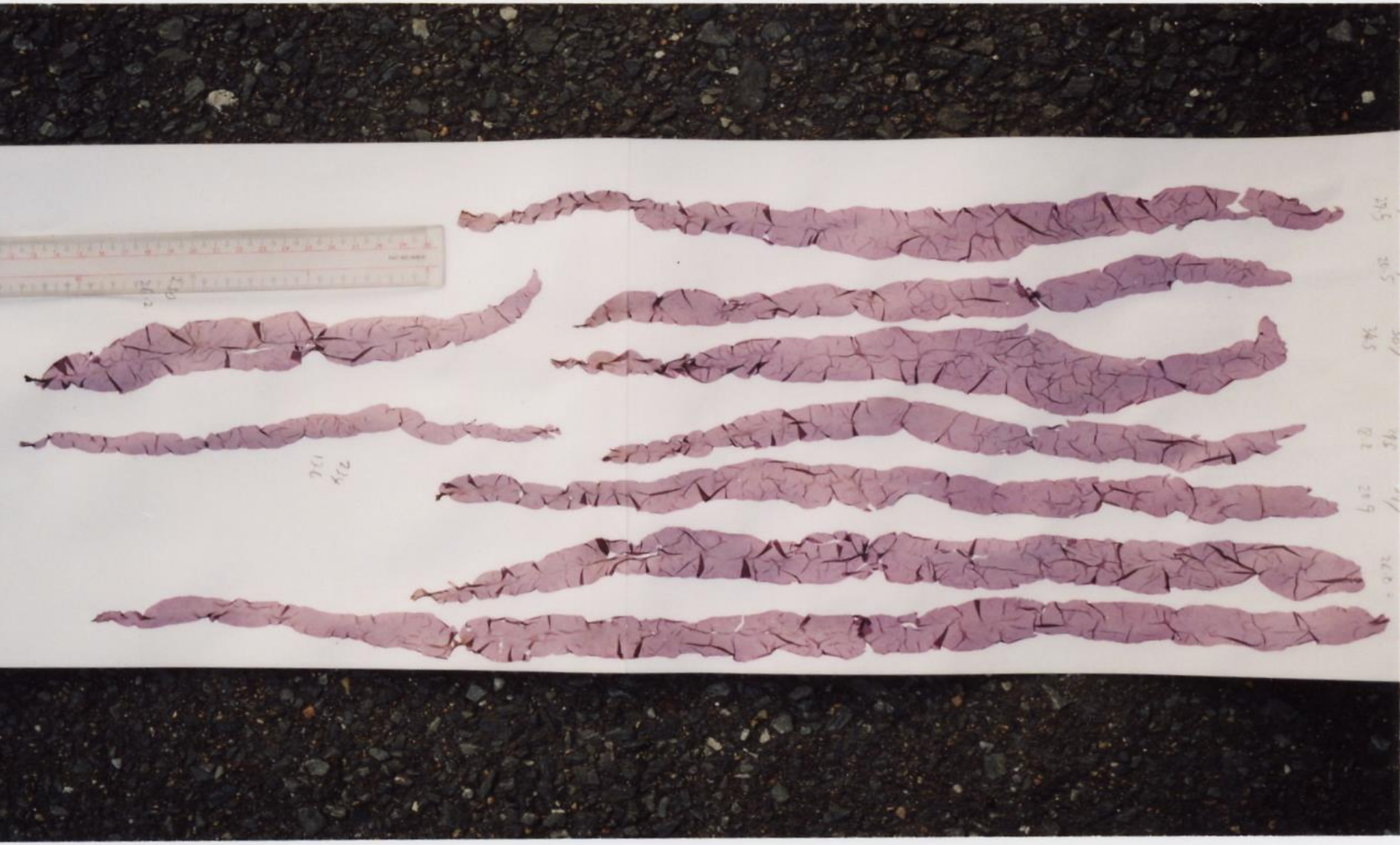


Nori cultivation in TokyoBay byUkiyoe

Processing of nori sheets shown in the traditional picture



Cultivated *Porphyra tenera* strain in Japan

Production of *Porphyra*

Japan: about 10 billon sheet (40,000ton, 4g/ sheet)

Korea: 7.8 billion sheets (21,000,ton, 3g/ sheet

China: about 2 billion (8,000 ton, 4g/ sheet, Nori- conversion)

<u>Total amount of production: UD$1.5 billion , UD$ 0.1/ sheet)</u>

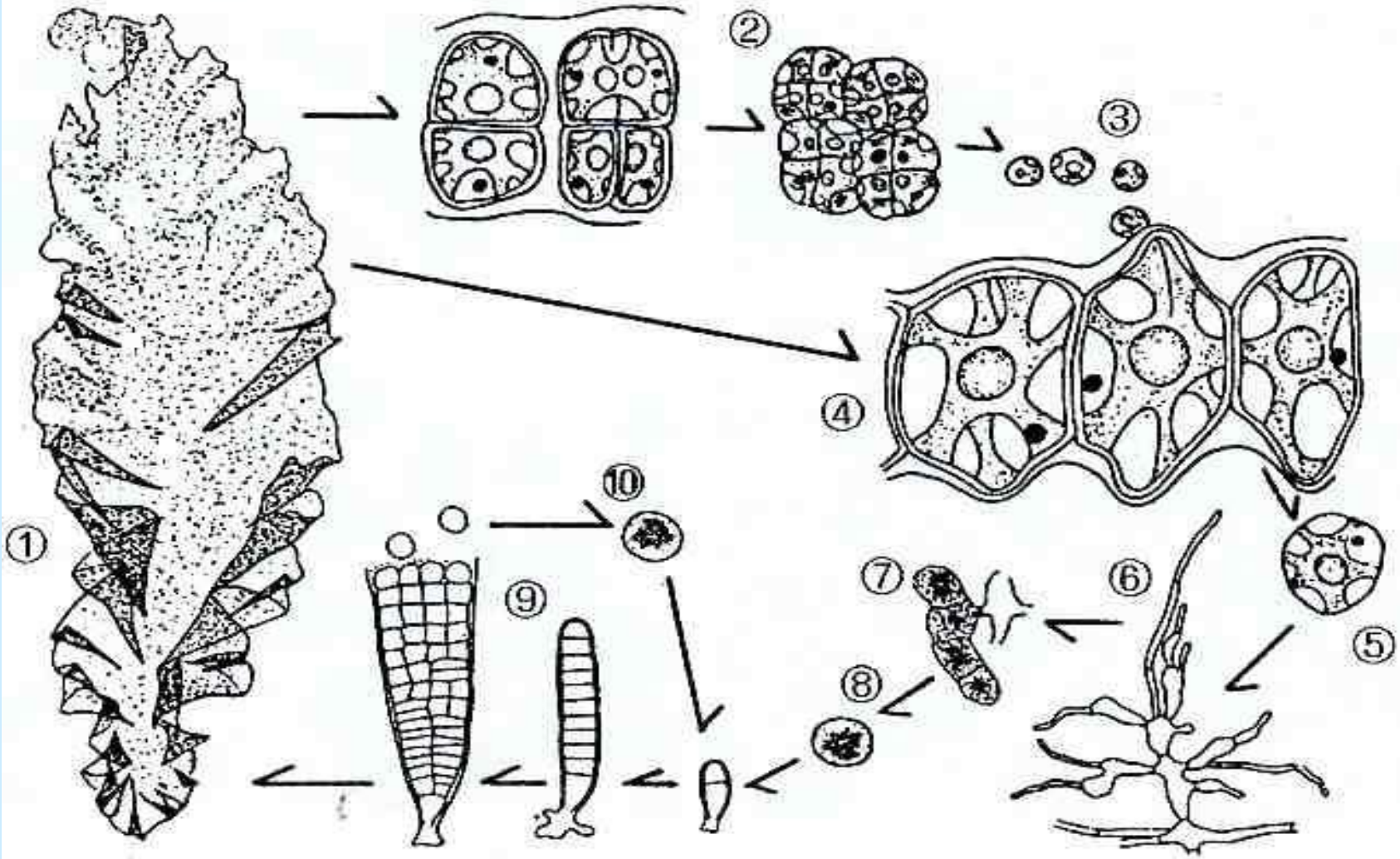


Figure 4. Life history of *Porphyra*. 1, Thallus. 2, Male cells, 3, Released spermatia. 4, Fertilized female cell. 5, Carpospore. 6, Conchocelisphase. 7, Conchosporangia. 8, Conchospore. 9, Young thalli. 10, Monospore.

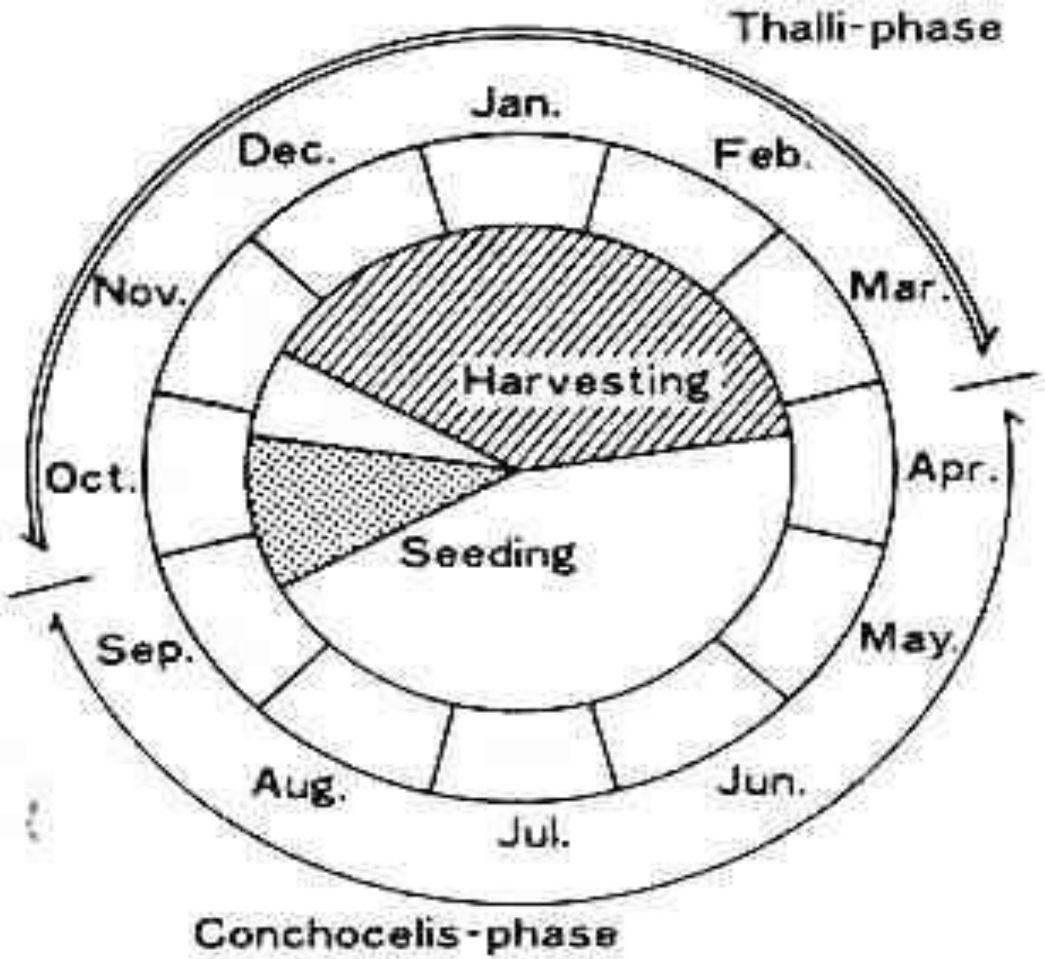


Figure 8. Schedule for the mass culture of *Porphyra* in Japan.

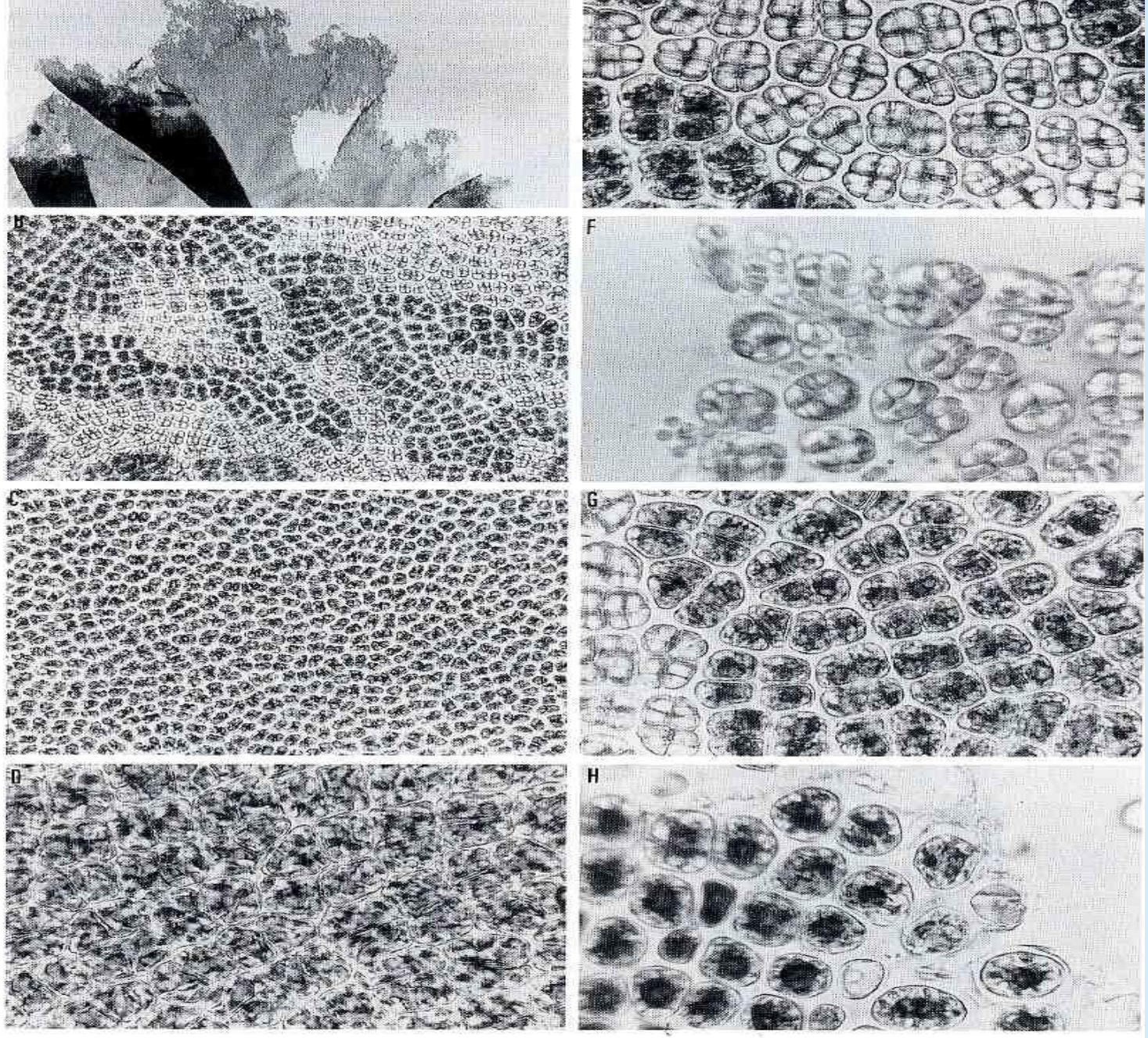


Figure 5. A. Formation of male and female gametangia along the frond margins of *P. yezoensis*. B. Male and female gametes of *P. yezoensis* (dark part). C. Vegetative cells of *Porphyra* thallus. D. Vegetative cells of *Porphyra* thallus. E. Repeated division of the male initials form spermatia. F. Ripened spermatia

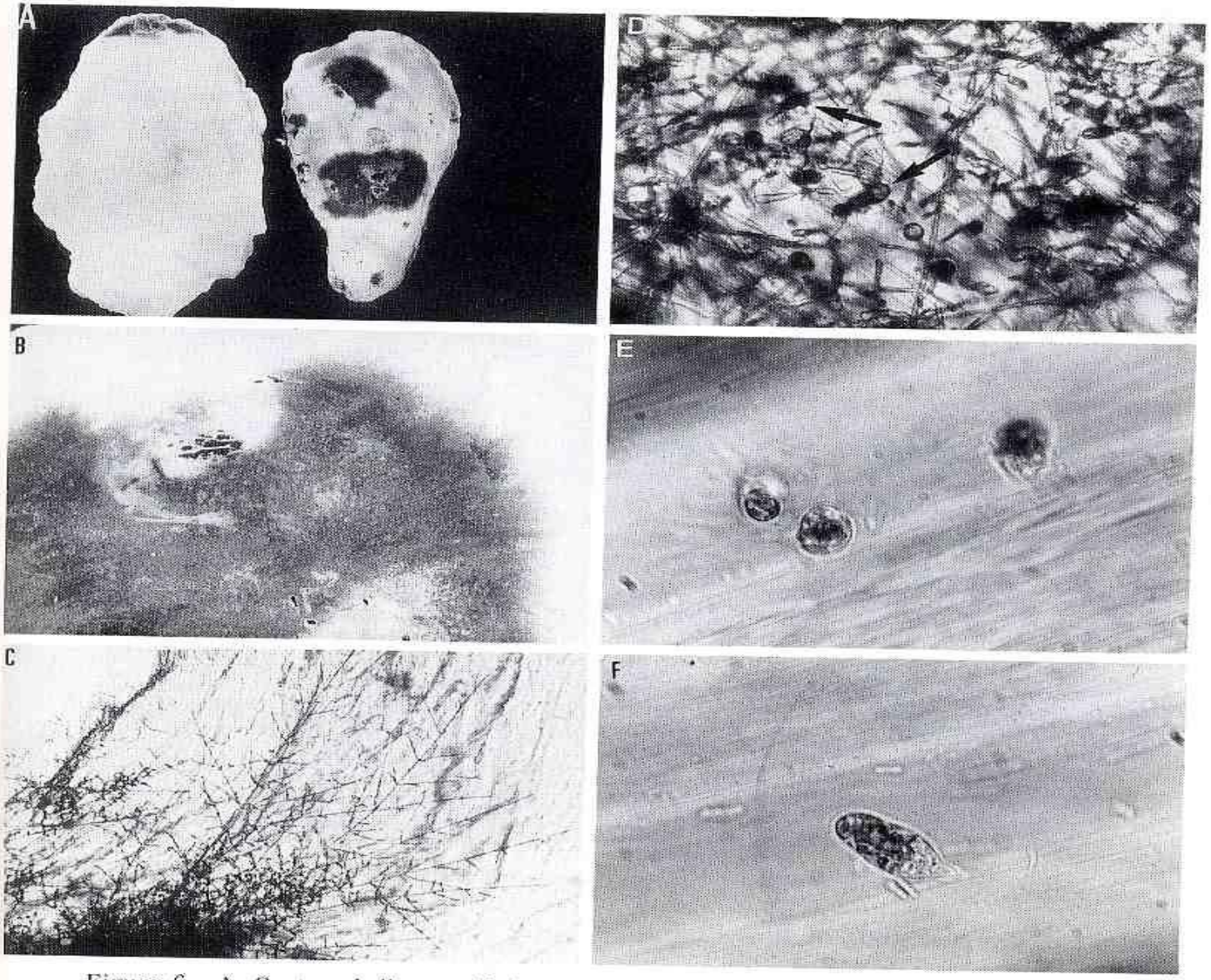
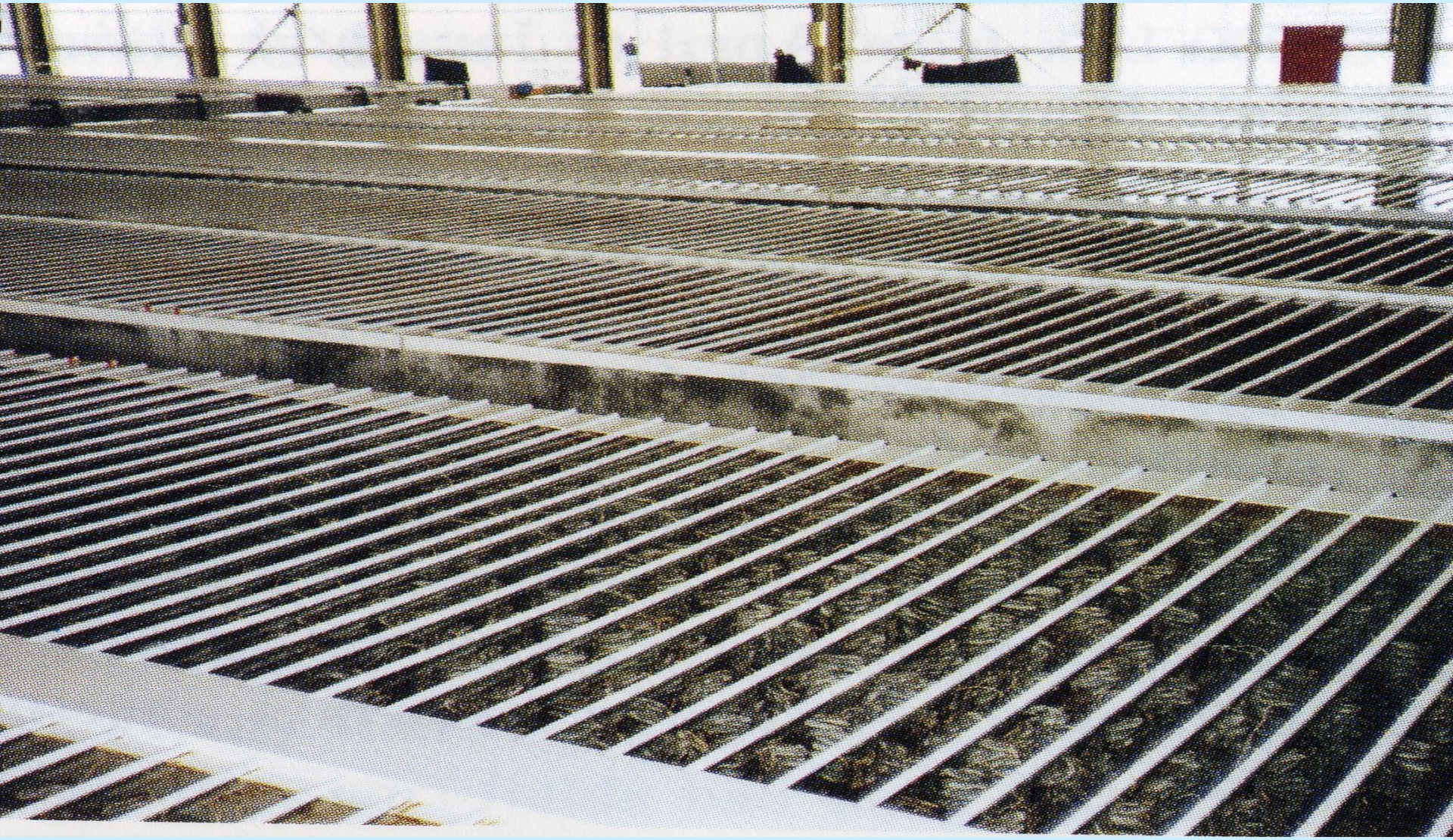


Figure 6. A. Oyster shells provided for the settlement of carpospores and development of the Conchocelis-phase of *Porphyra*. B. Development of the Conchocelis-phase. C. Conchocelis- phase. D. Conchosporangia are formed on the Conchocelis- phase filaments. E. Released conchospores, attach to the nori nets. F. Emergence of young *Porphyra* thalli, attached to nori net.

Oyster shells provided for the settlement of carpospores



Seeding tank

Matured conchocelis phase in oyster shell

Seeding to nets, with conchospores

Setting poles for nori cultivation in the sea, Ariake-kai, Japan

Structure of the artificial emersion for one month

Drying for 4 hours per day

Washing nursery nets during low tide

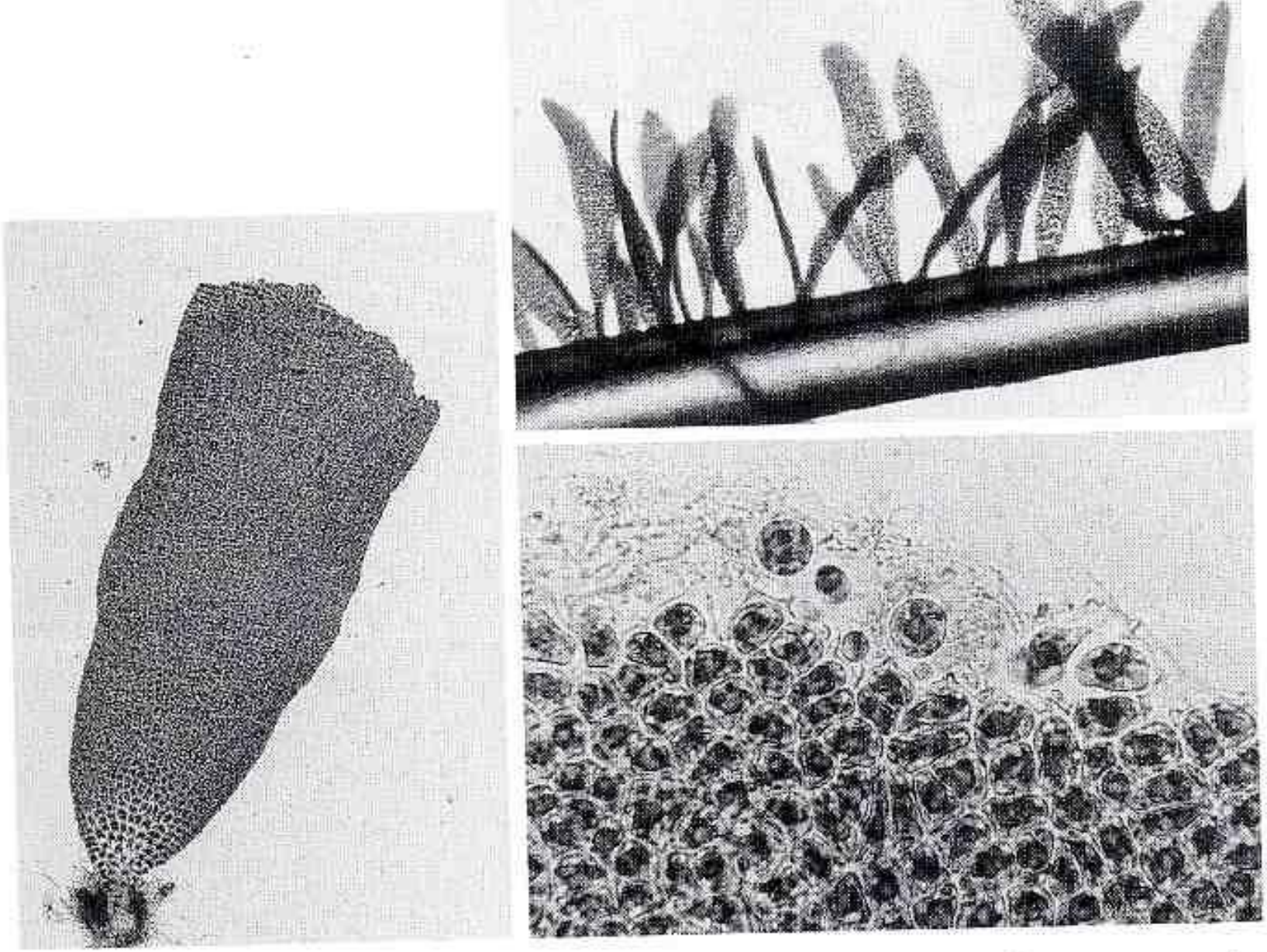


Figure 7. 10-14 days after germination, monospores are formed on the upper margins of the blades. The monospores also attach to the nori nets and grow into new thalli.

Drying of nets prior (young fronds) to freeze-storage

Frozen -storage of nori nets

Freeze-storage at -30℃

Pole -system of cultivation

Pole system in Ariake-kai
Net size, 2 m x 18 m

Acid cleaning of Nori net

Floating -system of cultivation

Nori cultivation by floating system in off shores

Harvesting by boat

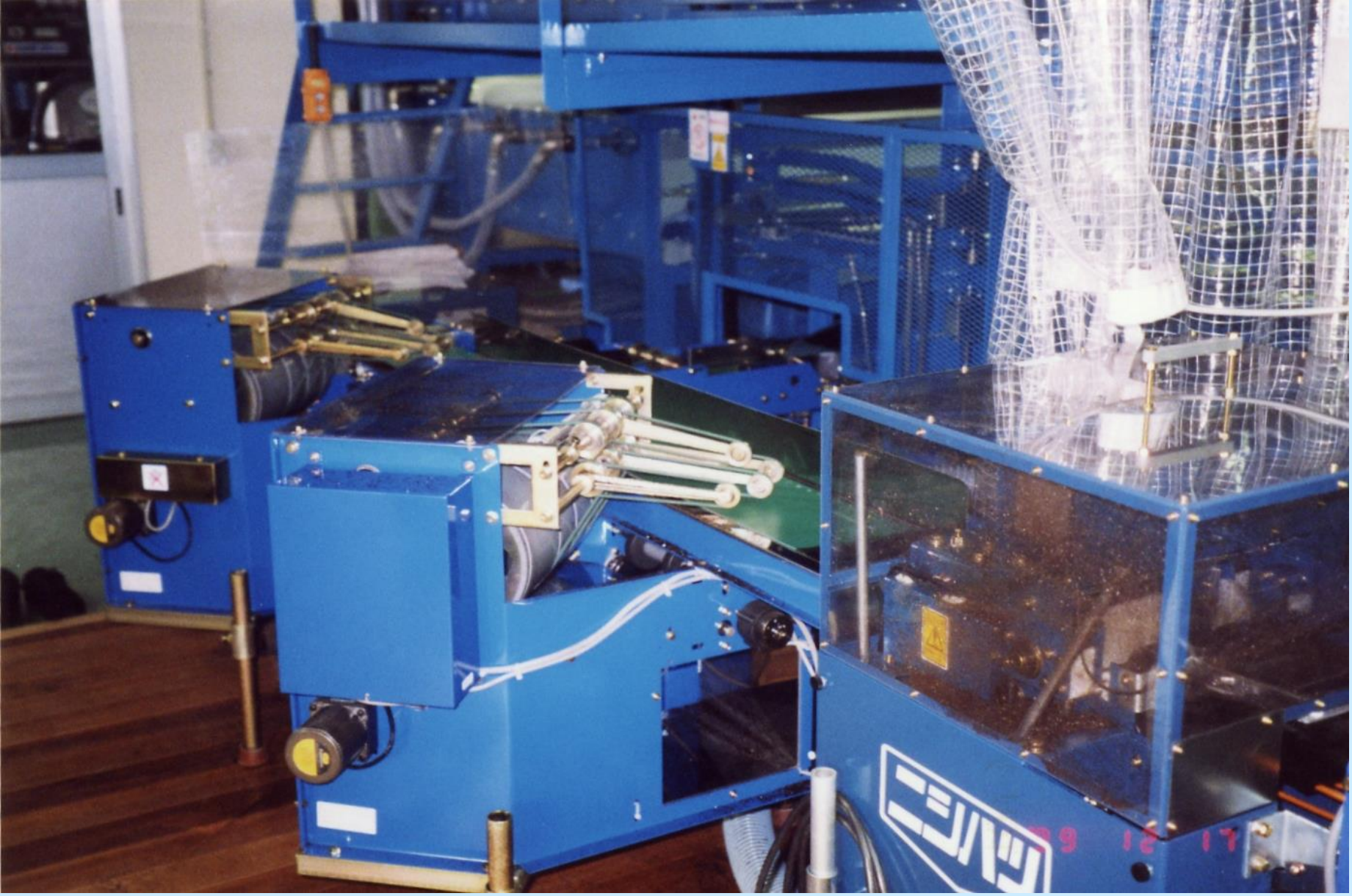
Harvesting by boat at floating cultivated system

2 10'97

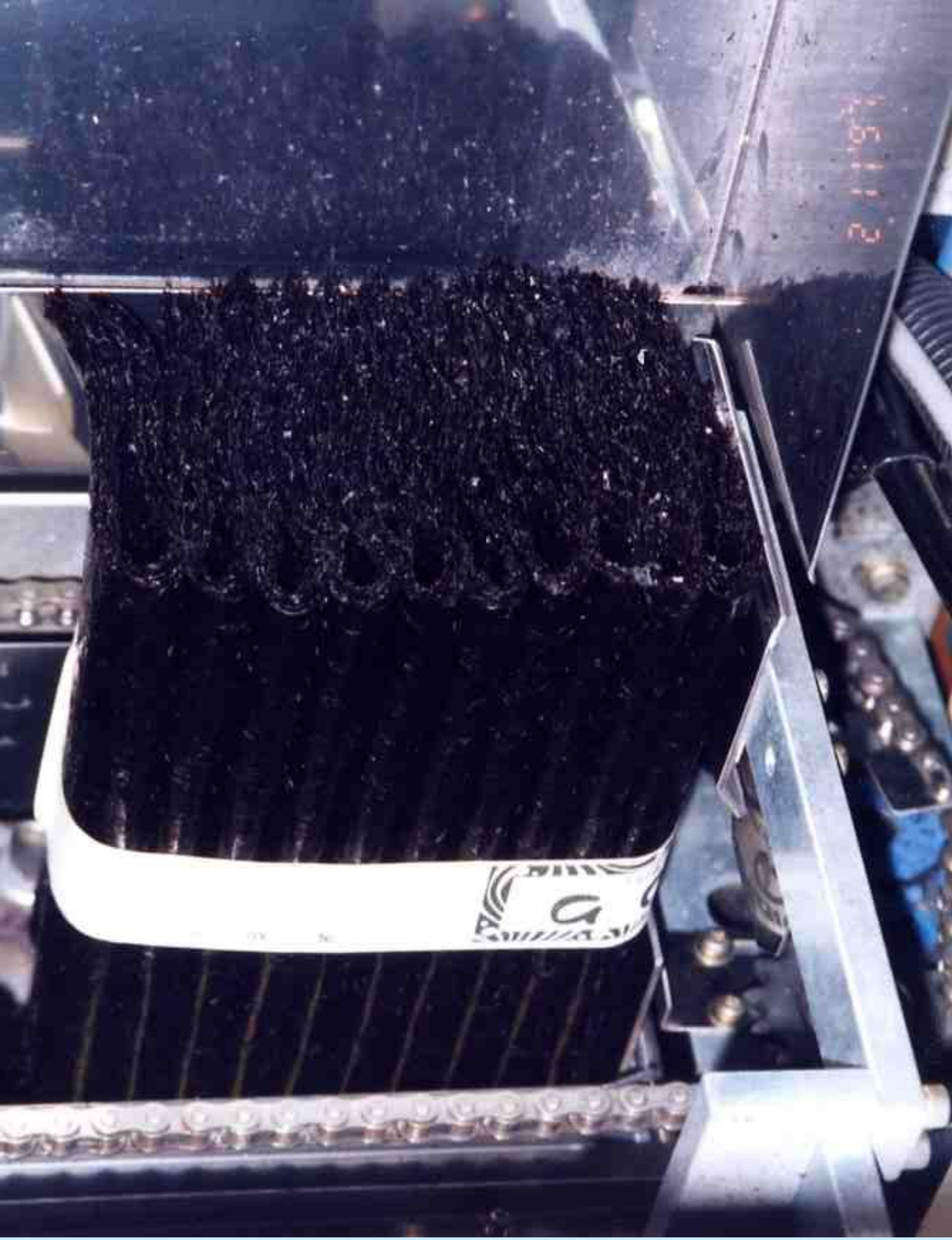
Minching of nori fronds

Automatic nori-processing machine

Formation of the Nori Sheet



Mechanized nori production-line



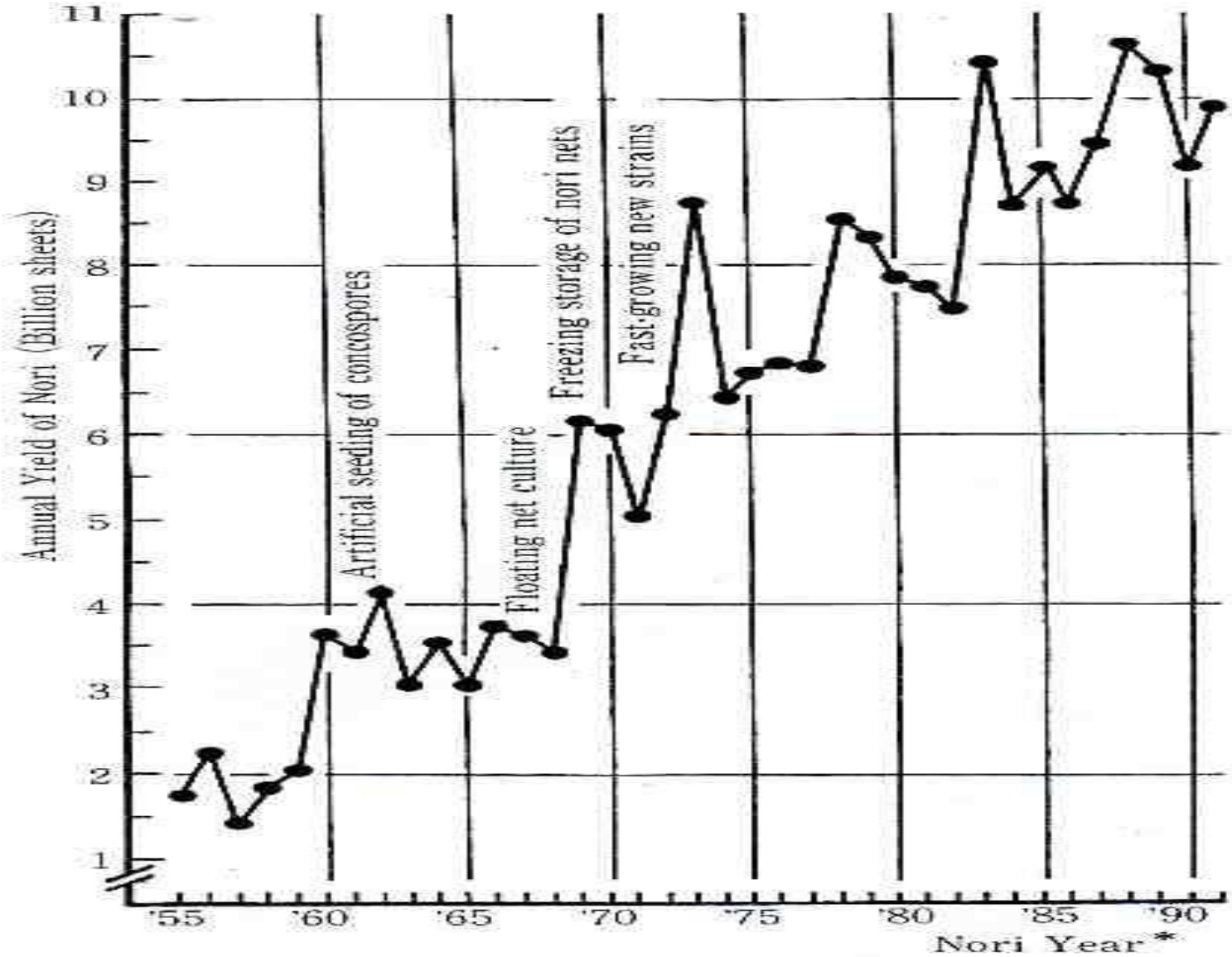


Figure 15. Changes in the production of nori sheets in Japan, from 1955 to 1991 (Data from the National Federation of Fisheries Cooperative) *

Porphyr cultivation ground in Korea

Size of cultivation net: 2.1 m x 100 m

Submerged culture nets

Harvesting of fronds

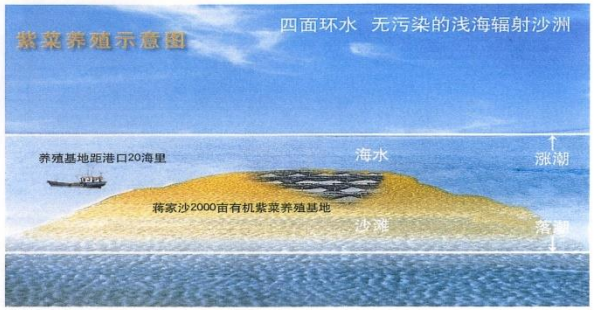
turning over the culture nets by ship

Exposure culture nets on the air

Floating boat for harvesting

Porphyra cultivation ground in China

Porphyra cultivation in China



公司紫菜养殖基地位于A:32° 42' 793N, 121° 10' 755E; B: 32° 41' 611N, 121° 11' 020E; C: 32° 41' 910N, 121° 11' 420E; D: 32° 42' 946N, 121° 11' 066E.

有机紫菜养殖基地