<table>
<thead>
<tr>
<th>項目</th>
<th>内容</th>
</tr>
</thead>
<tbody>
<tr>
<td>タイトル</td>
<td>The Number of Chromosomes in some Species of Porphyra</td>
</tr>
<tr>
<td>著者</td>
<td>KITO, Hitoshi; YABU, Hiroshi; TOKIDA, Jun</td>
</tr>
<tr>
<td>引用</td>
<td>北海道大学水産学部研究彙報 = BULLETIN OF THE FACULTY OF FISHERIES HOKKAIDO UNIVERSITY, 18(2): 59-60</td>
</tr>
<tr>
<td>発行年月</td>
<td>1967-08</td>
</tr>
<tr>
<td>URL</td>
<td><a href="http://hdl.handle.net/2115/23302">http://hdl.handle.net/2115/23302</a></td>
</tr>
<tr>
<td>タイプ</td>
<td>bulletin</td>
</tr>
<tr>
<td>ファイル情報</td>
<td>18(2)_P59-60.pdf</td>
</tr>
</tbody>
</table>

**文脈**

この研究は、特定の種類のPorphyraの染色体数についての調査結果を報告しています。Porphyraは、褐藻門の一部に属する海藻で、海洋生態系において重要な役割を果たしています。染色体数の測定は、種の識別や進化過程の理解に重要であり、この研究はその一部です。
The Number of Chromosomes in some Species of Porphyra

Hitoshi KITO,* Hiroshi YABU,* and Jun TOKIDA*

The number of chromosomes in five species of Porphyra from Hokkaido are reported in the present paper. The materials used for the present study were collected at the following localities:

- *P. amplissima* - at Nosappu, in the province of Nemuro, on August 2, 1966;
- *P. moriensis* - at Mori, in the province of Oshima, on April 8, 1965;
- *P. pseudocrassa* - at Akkeshi, in the province of Kushiro, on October 19, 1964 and on August 1, 1966;
- *P. pseudolinearis* - at Hakodate, in the province of Oshima, on March 2, 1965 and on February 23, 1967;
- *P. umbilicalis f. linearis* - at Kushiro, in the province of Kushiro, on July 28, 1966.

Of these species, *P. umbilicalis f. linearis* is the only species that has ever been treated cytologically (cf. YABU & TOKIDA, 1963, Table 1).

The materials were fixed late at night after being kept alive in vats filled with filtered sea-water. *P. moriensis* was fixed with Navashin's fluid, cut into pieces 3μ thick by the paraffin method, and stained with Heidenhain's haematoxylin. Wittmann's smear method (WITTMANN, 1965; YABU & TOKIDA, 1966) was used on *P. amplissima* and *P. umbilicalis f. linearis*, and both the paraffin and the smear methods were used on *P. pseudocrassa* and *P. pseudolinearis*. The nuclei and chromosomes usually appear smaller in the preparations made by the paraffin method than in those by the smear method.

The number of chromosomes found in each of the five species are as follows:

- *P. amplissima* - n=3, 2n=6;
- *P. moriensis* - n=4, 2n=8;
- *P. pseudocrassa* - n=3, 2n=?;
- *P. pseudolinearis* - n=4, 2n=?;
- *P. umbilicalis f. linearis* - n=4, 2n=8.

The haploid chromosome numbers were counted in the miotsis of vegetative cells of leafy thalli and in the mitosis leading to spermatium-formation, while the diploid numbers were counted in the mitosis of fertilized carpogonia and their daughter cells. Unfortunately, no good mitotic figures could be observed in the female fertile area of *P. pseudocrassa* and *P. pseudolinearis*, probably because they were collected at an unfavorable time.

* Faculty of Fisheries, Hokkaido University
Reference


Explanation of Plates
PLATE I

Porphyra umbilicalis (L.) f. linearis (Greville) Harvey

Photomicrographs of cells stained by the smear method showing nuclear divisions in spermatium- and carpospore-formation.

Figs. A-G. Showing haploid chromosomes (n=4) in the division leading to spermatium-formation.

Figs. H-J. Showing diploid chromosomes (2n=8) in the division leading to carpospore-formation.

(Figs. A-J, × 1230)
H. Kito et al.: The Number of Chromosomes in some Species of Porphyra
Photomicrographs of cells stained by the paraffin method (Figs. A-C, F, G) and by the smear method (Figs. D, E, H-J) showing nuclear divisions in metaphase in vegetative cells and in spermatium- and carpospore-formation

Porphyra pseudolinearis Ukda
Figs. A-C. Showing haploid chromosomes (n=4) in the division leading to spermatium-formation; by the paraffin method

Figs. D & E. Showing haploid chromosomes (n=4) in the division leading to spermatium-formation; by the smear method

Porphyra moriensis Ohmi
Fig. F. Showing haploid chromosomes (n=4; not clearly shown in this photograph) in the division leading to spermatium-formation; by the paraffin method

Fig. G. Showing diploid chromosomes (2n=8; not clearly shown in this photograph) in the division leading to carpospore-formation; by the paraffin method

Porphyra amplissima (Kjellman) Setchell et Hus
Fig. H. Showing haploid chromosomes (n=3) in the division leading to spermatium-formation; by the smear method

Fig. I. Showing diploid chromosomes (2n=6; only four chromosomes are seen in the photograph) in the division leading to carpospore-formation; by the smear method

Porphyra pseudocrassa Yamada et Mikami
Fig. J. Showing haploid chromosomes (n=3) in the division of a vegetative cell; by the smear method

(Figs. A-C, F-I, × 1230; Figs. D, E, J, ×1120)
H. Kito et al.: The Number of Chromosomes in some Species of *Porphyra*