

Teru IORIYA\*: **Chromosome numbers in four species  
of *Tribonema* (Xanthophyceae)**

庵谷 晃\*: 黄緑色藻類トリボネマ属植物4種の染色体数

Mitotic chromosomes of the genus *Tribonema* have previously been described by Hawlitschka<sup>1)</sup> and Abbas and Godward<sup>2)</sup>. The author carried out the cytological studies of 4 species of *Tribonema* from Hokkaido in prospect of that the results might offer some help in dealing with taxonomical problems in this genus.

The materials used for the present observations are listed as follows:

| Species                                      | Strain No. | Date of collection | Locality                      |
|--|------------|--------------------|-------------------------------|
| <i>Tribonema bombycinum</i><br>Derb. et Sol. | 033        | July 22, 1970      | Taisho-ike Pond,<br>Iwamizawa |
| <i>T. minus</i> Hazen                        | 040        | July 29, 1970      | Lake Shikaribetsu             |
| <i>T. aequale</i> Pascher                    | 039        | July 27, 1970      | Akan River                    |
| <i>T. vulgare</i> Pascher                    | 043        | July 27, 1970      | Lake Akan                     |

The observations were carried out with a clonal and standing culture in Miller-Fogg's medium (Miller and Fogg<sup>3)</sup>) fortified with soil extract. Cultures were kept at 20°C in freezer-incubators and illuminated 14 h a day by cool white fluorescent lamps at the intensity of 6000 lux.

Materials cultured for 3 weeks at the above conditions were fixed with a mixture of three parts of 99 per cent ethanol to one part of acetic acid, during the dark period. After fixing, Godward's iron-alum acetocarmine technique has been employed (Godward<sup>4)</sup>).

Frequent divisions were observed three to four hours after the beginning of the dark period. In successful observations, 17 chromosomes were countable in each of the four species investigated here. However, juxtaposition of chromosomes often makes it difficult to decide whether one chromosome is overshadowing a second, or in some cases, two chromosomes arranged in an end-to-end configuration may be counted as one. The

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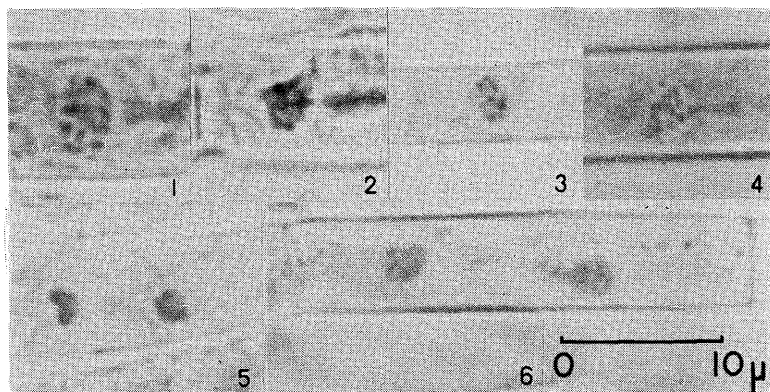


Fig. 1. *Tribonema vulgare*. Prophase showing 17 chromosomes. Fig. 2. *Tribonema bombycinum*. Prophase showing 17 chromosomes. Fig. 3. *Tribonema minus*. Prophase showing 17 chromosomes. Fig. 4. *Tribonema aequale*. Prophase showing 17 chromosomes. Fig. 5. *Tribonema vulgare*. Telophase showing the two daughter nuclei. Fig. 6. *Tribonema bombycinum*. Two daughter nuclei.

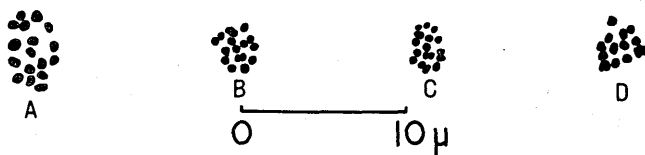


Fig. 7. Drawings of chromosomes appearing in photomicrographs of Figs. 1-4. A=Fig. 1; B=Fig. 2; C=Fig. 3; D=Fig. 4.

Table 1. Chromosome numbers in the genus *Tribonema*.

| Species               | Chromosome Number | Author                 |
|-----------------------|-------------------|------------------------|
| <i>Tribonema</i> sp.  | ca. 8             | Hawlitshcka 1932       |
| <i>T. utriculosum</i> | 15, 17            | Abbas and Godward 1964 |
| <i>T. bombycinum</i>  | 17                | Present paper          |
| <i>T. minus</i>       | 17                | "                      |
| <i>T. aequale</i>     | 17                | "                      |
| <i>T. vulgare</i>     | 17                | "                      |

numbers recorded here are basically agreed with that reported by Abbas and Godward<sup>2)</sup>, but differ from that by Hawlitschka<sup>1)</sup>. This difference in chromosome number indicates that her materials may belong to another species in this genus. Table 1 gives a list of chromosome numbers in *Tribonema*.

This work was carried out under the leadership of Prof. Munenao Kurogi, Hokkaido University, to whom the author has pleasure in expressing his indebtedness.

#### Literature cited

- 1) Hawlitschka, E., 1932. Pflanzenforschung, H. 15. Jena. 2) Abbas, A. and M. B. E. Godward, 1964. Phycos 2: 49-51. 3) Miller, J. D. A. and G. E. Fogg, 1957. Arch. Mikrobiol. 28: 1-17. 4) Godward, M. B. E., 1948. Nature 161: 203.

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北海道産のトリボネマ属植物 4 種, *Tribonema bombycinum*, *T. vulgare*, *T. minus*, *T. aequale* の染色体を観察した。今回調べた上記 4 種の染色体数はいずれも 17 であった。

#### ○帰化植物おぼえがき (2)\* (伊藤浩司) Koji Ito: Notes on some naturalized plants (2)

5. マンテマモドキ (ホザキマンテマ) *Silene dichotoma* Ehrh. 北海道での最初の採集地は 1938 年 7 月平賀仙次郎氏が十勝国川西村十勝農学校 (現十勝農業高等学校) 附近で、宮部先生が“フタタマンテマ”の和名を手記された (水島: 植研 42: 229. 1967)。第二の採集地は、水島博士によると (植研 35: 157. 1960) 天塩国下川町である。最近日高国沙流郡門別町門別から、高橋諠氏が本植物を採集された。すなわち、北海道では第三の採集地となる。

6. ハナダイコン (ハナスズシロ) *Hesperis matronalis* L. この植物をめぐって、かって朝日新聞の投書欄が賑わったことがあったが、故川代善一氏は 1965 年北見国東相内村路傍で採集している。

7. エサシソウ (江差草) について What is “Esashi-sô” (*Verbascum album* Sugawara)? 故菅原繁藏氏の“北海道植物銘鑑”と題する小冊子は、道内の小中学校の先生方がよく引用する植物名の案内書であるが、その中に“エサシソウ”なる植物名があり、その正体についてしばしば質問を受ける。桑原義晴氏が嘗て北陸の植物 13: 46 & 48. 1964) でシロバナモウズイカ *Verbascum nigrum* L. var. *album*

\* (1) 植物研究雑誌 40: 219 (1965)