富山県産セイヨウタンポポ（キク科）の染色体数

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Kyoko Sato[1], Yoshikane Iwatsubo[2], Mikio Watanabe[3], Shunsuke Serizawa[3] and Naohiro Naruhashi[2] : **Chromosome numbers of *Taraxacum officinale* (Asteraceae) in Toyama Prefecture, central Japan**

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Abstract

Chromosome numbers of *Taraxacum officinale* were examined in a total of 386 plants collected from 10 localities in the plains of Toyama Prefecture, central Honshu in Japan. They showed two chromosome counts of 2n=24 (triploid) and 32 (tetraploid).Of 386 plants examined, 231 (59.8%) were triploids and 155 (40.2%) were tetraploids. The two chromosome forms of *T. officinale* were distributed throughout all of the 10 localities studied, which indicates that the two forms of *T. officinale* are ubiquitously distributed in the plains of Toyama Prefecture.

Key words : Asteraceae, Japan, polyploidy, *Taraxacum officinale*.

The genus *Taraxacum* Weber ex Wigg., a cosmopolitan herbaceous plant growing in Europe, America, Asia and Australia, has 60 species subdivided into about 2,000 apomictic lines named microspecies (Richards 1970, 1973 ; Mabberley 1997). *Taraxacum* is generally recognized as a monobasic genus with x=8 (Darlington and Wylie 1955). Diploid races of *Taraxacum* are usually known to be sexual, while polyploids are apomicts (Richards 1970). In this genus, *T. officinale* Weber is a well known cosmopolitan dandelion with a variety of chromosome numbers as listed in Table 1. Its diploids with 2n=16 chromosomes, growing in central Europe, have many sexual races, while its triploids are nearly obligate apomicts (Stebbins 1971). Hybridization between the diploid races of *T. officinale* and the other *Taraxacum* species has also been recorded (Fürnkranz 1965). Many new apomictic races are thought to have appeared in the progeny of such hybrids (Stebbins 1971).

In Japan, *T. officinale* is an introduced plant, growing in plains and mountainous habitats. Morita (1988) had found natural hybrids between 3x *T. officinale* naturalized in Japan and native diploid *Taraxacum* plants in sect. *Mongolica* during his field research. These natural hybrid plants are very similar in outer morphology to *T. officinale*, thus *T. officinale* and the hybrids are known to be difficult to discriminate from each other by their outer morphologies (Watanabe et al. 1997 ; Shibaike and Morita 2002). Thus, in this study, these were treated as *T. officinale*, distinguishing neither *T. officinale* nor natural hybrid plants. *Taraxacum officinale* in Japan is known to have 2n=24 (Miyaji 1932 ; Okabe 1951 ; Takemoto 1954, 1956, 1961), 24+2B (Takemoto 1954), and 26 chromosomes (Takemoto 1956).

Recently, we found *T. officinale* with 2n=32 and 2n=24 in the mountainous habitat of Mt. Tateyama, located in the northern region of the Chubu district in central Japan (Sato et al. 2004). We report in this paper that these cytotypes are also prevalent in the plains of Toyama Prefecture, central Japan.

Materials and methods

A total of 386 plants of *T. officinale*, collected from 10 localities in Toyama Prefecture, central

Table 1. The chromosome numbers reported previously of *Taraxacum officinale*

n	2n	References
4		Panigrahi and Kamathy (1960)
12		Tischler (1934, 1937), Rohweder (1937), Koul (1964)
16		Tischler (1934), Rohweder (1937)
24		Sharma (1970 (sec. Goldblatt 1981))
	8	Panigrahi and Kamathy (1960), Sharma and Chatterjee (1961)
	9	Panigrahi and Kamathy (1960)
	16	Fürnkranz (1960, 1966), Kashin et al. (2003)
	18	Fürnkranz (1960)
	21－23	Fürnkranz (1966)
	22	Belaeva and Siplivinsky (1975)
	22－24	Heitz (1926)
	24	Miyaji (1932), Poddubnaja-Arnoldi and Dianowa (1934, 1937 (sec. Fedorov 1969)), Pólya (1950), Okabe (1951), Takemoto (1954, 1956, 1961) Malecka (1958, 1962, 1968, 1971), Mulligan (1959, 1984 (as 24 I to 16 I+1 II+2 III)), Fürnkranz (1960, 1966), Koul (1963 (as 8 II+8 I and 24), 1964), Mehra et al. (1965), Sharma and Sarkar (1967–68 (sec. Moore 1973)), Chuhsanova et al. (1968), Taylor and Mulligan (1968), Chatterjee and Sharma (1969), Gill (1969), Murín and Váchová (1970), Arevshatian (1970, 1973), Lee (1970), Lee and Oh (1970), Fernandes and Queirós (1971), Lovka et al. (1971), Kartashova et al. (1974 a, 1974 b (sec. Goldblatt 1988)), Magulaev (1976 (sec. Goldblatt 1981)), Peng and Hsu (1977, 1978), Van Loon and de Jong (1978), Kliphuis and Wieffering (1979), Krasnikov (1986), Lavrenko and Serditov (1987), Luque and Díaz Lifante (1991), Zhai and An (1996), Zhai et al. (1997), Dmitrieva (2000 (sec. Goldblatt and Johnson 2006)), Kashin et al. (2003)
	24－26	Juel (1905)
	24+1B	Krasnikov (1990 (sec. Goldblatt and Johnson 1996))
	24+2B	Takemoto (1954), Dmitrieva and Parfenov (1985), Parfenov and Dmitrieva (1987), Dmitrieva (2000 (sec. Goldblatt and Johnson 2006))
	26	Takemoto (1956), Gill (1969), Fernandes and Queirós (1971), Gupta and Garg (1987), Gupta et al. (1989)
	27	Mehra et al. (1965), Gill (1969)
	32	Fürnkranz (1960), Mehra et al. (1965), Chatterjee and Sharma (1969), Gill (1969), Lavrenko and Serditov (1987), Lavrenko et al. (1988), Zhai and An (1996), Zhai et al. (1997), Kashin et al. (2003)
	34	Fürnkranz (1960)
	36	Fürnkranz (1960)
	37	Fürnkranz (1960)
	40	Gill (1969), Mehra and Remanandan (1969), Fernandes and Queirós (1971)
	44	Gill (1969)
	48	Gill (1969)

Table 2. Collection localities, numbers of individuals and chromosome numbers of *Taraxacum officinale* in Toyama Prefecture

Locality	Number of individuals		
	2n=24	2n=32	Total
Miyazaki, Asahi-machi, Shimoniikawa-gun	21 (51.2%)	20 (48.8%)	41
Miyano, Kurobe City	27 (65.9%)	14 (34.1%)	41
Kakizawa, Kamiichi-machi, Nakaniikawa-gun	23 (62.2%)	14 (37.8%)	37
Tabata, Toyama City	23 (63.9%)	13 (36.1%)	36
Furukawa, Toyama City	6 (18.8%)	26 (81.2%)	32
Gofuku, Toyama City	43 (84.3%)	8 (15.7%)	51
Nakajinzu, Yatsuo-machi, Toyama City	13 (34.2%)	25 (65.8%)	38
Kojo, Takaoka City	25 (80.6%)	6 (19.4%)	31
Ohzakai, Himi City	28 (73.7%)	10 (26.3%)	38
Tochihara, Toga-mura, Nanto City	22 (53.7%)	19 (46.3%)	41
Total	231 (59.8%)	155 (40.2%)	386

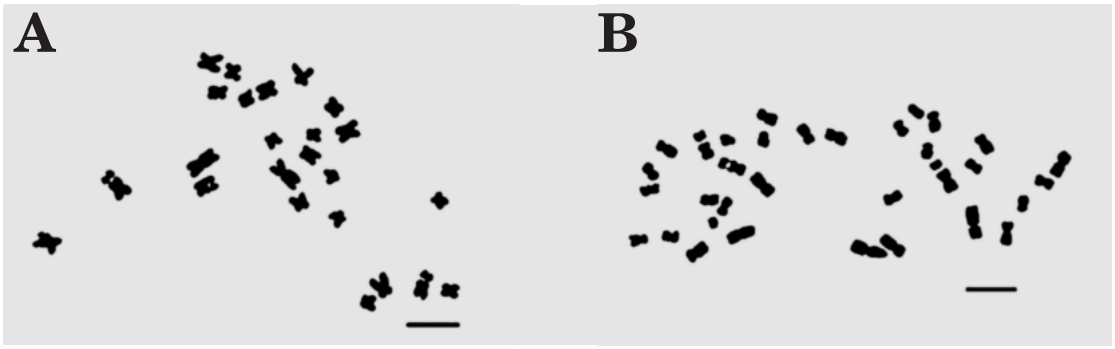

Fig.1. Somatic metaphase chromosomes of *Taraxacum officinale* collected from Nakajinzu, Yatsuo-machi, Toyama City, Toyama Pref. A : 2n=24. B : 2n=32. Bar : 5 μm.

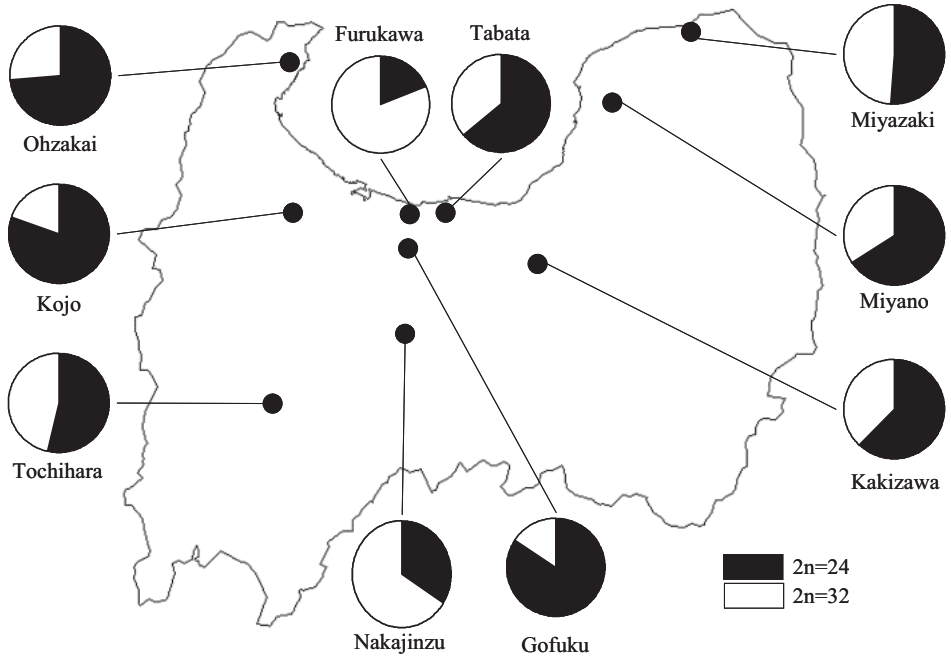

Fig. 2. Pie graphs showing the frequencies of two cytotypes 3x (2n=24) and 4x (2n=32) of *Taraxacum officinale* in Toyama Prefecture. Detailed localities are given in the Table 2.

Honshu in Japan, were used in this study (Table 2). In the 10 localities, each plant was collected at intervals of more than 20 meters. The plants were grown in plastic pots at the experimental garden of the University of Toyama. Their chromosome numbers were examined in meristematic cells, with fully spread metaphase chromosomes, from their root tips.

Newly formed root tips collected from the potted plants were pretreated in 2.2 mM 8–hydroxyquinoline solution at room temperature for 1 to 1.5 h and kept at ca. 5℃ for 15 h. These root tips were fixed in a mixture of glacial acetic acid and absolute ethyl alcohol (1 : 3) at room temperature for 1 h, macerated in 1 N hydrochloric acid at 60℃ for 10 minutes, and then washed in tap water. Meristems of the root tips were stained in 1 drop of 1.5% lacto-propionic orcein on a glass slide, and a common squash technique was applied in preparation.

Results and discussion

Taraxacum officinale studied had two chromosome forms: triploids with 2n=24 chromosomes, and tetraploids with 2n=32 chromosomes (Fig. 1). In Japan, *T. officinale* with 2n=24+2B chromosomes (Takemoto 1954), and with 2n=26 chromosomes (Takemoto 1956) have also been recorded. In the present study, however, aneuploids and plants with B chromosomes were not detected. Of 386 plants examined, 231 (59.8%) were triploids and 155 (40.2%) were tetraploids. Both chromosome forms of *T. officinale* were found in each of the 10 localities studied. As shown in Table 2 and Fig. 2, the frequency of triploid *T. officinale* in the 10 localities ranged from 18.8% to 84.3%. The present study shows that both 2n=24 and 2n=32 forms of *T. officinale* are prevalent in the studied areas, which indicates that the two forms of *T. officinale* are distributed throughout the plains of Toyama Prefecture.

The analysis of ploidy level by flow cytometry revealed in Japanese *T. officinale* among others also triploid and tetraploid plants (Shibaike and Morita 2002; Shibaike 2005; Shibaike et al. 2005) and some of them are thought to have appeared in the progeny of hybrids between *T. officinale* and native sexual diploid *Taraxacum* by using allozyme marker (Watanabe et al. 1997) and DNA marker (Shibaike and Morita 2002). Flow cytometry can reveal ploidy level, however, it cannot be used to distinguish between plants with B chromosomes and aneuploids such as trisomics.

As shown in Table 1, *T. officinale* is known to have B chromosomes and a variety of aneuploids. In Japan, *T. officinale* with 24+2B (Takemoto 1954) and 26 chromosomes (Takemoto 1956) were also reported. In the present study, however, we found no B chromosomes or aneuploids in *T. officinale* distributed in Toyama Prefecture.

References

Arevshatian, I. G. 1970. New data on the chromosome numbers of *Taraxacum* Weber species from Armenia. Bot. Zhurn. **55**: 1167–1170. (in Russian)

Arevshatian, I. G. 1973. Numbers of chromosomes and sizes of microspores of *Taraxacum* Weber in Armenia. Biol. J. Armenii **26** (3): 38–43. (in Russian)

Belaeva, V. A. and Siplivinsky, V. N. 1975. Chromosome numbers and taxonomy of some species of Baikal flora. Bot. Zhurn. **60**: 864–872. (in Russian)

Chatterjee, T. and Sharma, A. K. 1969. Cytotaxonomy of Cichorieae. Genetica **40**: 577–590.

Chuhsanova, N. A., Svechnikova, L. I. and Alexandrova, T. V. 1968. Data on karyology of the family Compositae Giseke. Tsitologiia **10**: 198–206. (in Russian)

Darlington, C. D. and Wylie, A. P. 1955. Chromosome atlas of flowering plants, 2nd ed. p. 249. George Allen and Unwin, London.

Dmitrieva, S. A. and Parfenov, V. I. 1985. Kariologicheskaja kharakteristika nekotorykh vidov poleznykh rastenij flory Belorussii. Izv. Akad. Nauk. Beloruussk. SSR. Ser. Biol. Nauk **6**: 3–8. (in Russian)

Fedorov, A. A. 1969. Chromosome numbers of flowering plants. p. 141. Komar. Bot. Inst., Acad. Sci. U.S.S.R., Leningrad. (in Russian)

Fernandes, A. and Queirós, M. 1971. Contribution à la connaissance cytotaxinomique des Spermatophyta du Portugal. II. Compositae. Bol. Soc. Brot. **45** (ser. 2): 5–121.

Fürnkranz, D. 1960. Cytogenetische Untersuchungen an *Taraxacum* im Raume von Wien. Österreich. Bot. Zeitschr. **107**: 310–350.

Fürnkranz, D. 1965. Beiträge zur Cytogenetik experimenteller und natürlicher Hybriden bei *Taraxacum*. Ber. Deutsch. Bot. Ges. **78**: 139–142.

Fürnkranz, D. 1966. Untersuchungen an Populationen des *Taraxacum-officinale*-Komplexes im Kontaktgebiet der diploiden und polyploiden Biotypen. Österreich. Bot. Zeitschr. **113**: 427–447.

Gill, L. S. 1969. A note on the cytomorphology of *Taraxacum officinale* complex from N. W. Himalayas. Bull. Bot. Surv. India **11**: 205–206.

Goldblatt, P. (ed.). 1981. Index to plant chromosome numbers 1975–1978. p.138. Missouri Botanical Garden, St. Louis.

Goldblatt, P. (ed.). 1988. Index to plant chromosome numbers 1984–1985. p.64. Missouri Botanical Garden, St. Louis.

Goldblatt, P. and Johnson, D. E. (eds.). 1996. Index to plant chromosome numbers 1992–

1993. p.69. Missouri Botanical Garden, St. Louis.

Goldblatt, P. and Johnson, D. E. (eds.). 2006. Index to plant chromosome numbers 2001–2003. p.56. Missouri Botanical Garden, St. Louis.

Gupta, R. C. and Garg, R. K. 1987. Bir, S. S. (ed.). SOCGI plant chromosome number reports-IV. J. Cytol. Genet. **22**: 162–163.

Gupta, R. C., Gill, B. S. and Grag, R. K. 1989. Chromosomal conspectus of western Himalayan Compositae. Aspects Pl. Sci. New Delhi **11**: 427–437.

Heitz, E. 1926. Der Nachweis der Chromosomen. Vergleichende Studien über ihre Zahl, Grösse und Form im Pflanzenreich. I. Zeitschr. Bot. **18**: 625–681.

Juel, H. O. 1905. Die Tetradenteilungen bei *Taraxacum* und anderen Cichorieen. K. Svenska Vetenskps-Akad. Handl. **39**: 1–21, pls. 1–3.

Kartashova, N. N., Malakhova, L. A. and Kozlova, A. A. 1974 a. Study of the chromosome of the representatives of the Ob region flora. I. Number of chromosomes of the Tomsk district. Nauch. Dokl. Vyssh. Shk., Biol. Nauk. **4**: 114–119. (in Russian)

Kashin, A. S., Demotshco, Yu. A. and Martinova, V. S. 2003. Karyotypic variation in population of apomictic and sexual species of agamic complexes of Asteraceae. Bot. Zhurn. **88**: 35–51. (in Russian with English summary)

Kliphuis, E. and Wieffering, J. H. 1979. Löve, Á. (ed.). IOPB chromosome number reports LXIV Taxon **28**: 391–408.

Koul, M. L. H. 1963. Cytology of some Composites. J. Sci. Res. Banaras Hindu Univ. **14**: 20–22.

Koul, M. L. H. 1964. Chromosome numbers in some medicinal composites. Proc. Ind. Acad. Sci., B. **59**: 72–76, pl. I.

Krasnikov, A. A. 1986. Chromosome numbers of *Taraxacum officinale* (Asteraceae) from Kurgan, Omsk and Tumen Regions. Bot. Zhurn. **71**: 115–116. (in Russian)

Lavrenko, A. N. and Serditov, N. P. 1987. Chromosome numbers in some members of Urals flora (the Komi Autonomous Soviet Socialist Republic). Bot. Zhurn. **72**: 846–847. (in Russian)

Lavrenko, A. N., Serditov, N. P. and Ulle, Z. G. 1988. Chromosome numbers in some species of Asparagaceae, Asteraceae and Ranunculaceae from the north Urals (Komi ASSR). Bot. Zhurn. **73**: 605–607. (in Russian)

Lee, Y. N. 1970. Chromosome number of flowering plants in Korea (3). J. Korean Res. Inst. Better Living **5**: 127–129, pls. 1–3.

Lee, Y. N. and Oh, Y. C. 1970. Taxonomic study on genus *Taraxacum* in South Korea. J. Korean Res. Inst. Better Living **4**: 63–68, pls. 1–2. (in Korean with English summary)

Lovka, M., Sušnik, F., Löve, Á. and Löve, D. 1971. Löve, Á. (ed.). IOPB chromosome number reports XXXIV. Taxon **20**: 785–797.

Luque, T. and Díaz Lifante, Z. 1991. Chromosome numbers of plants collected during Iter Mediterraneum I in the SE of Spain. Bocconea **1**: 303–364.

Mabberley, D. J. 1997. The plant-book, 2nd ed. p. 700. Cambridge University Press, Cambridge.

Malecka, J. 1958. Chromosome numbers of some *Taraxacum*-species in Poland. Acta Biol. Cracov., Ser. Bot. **1**: 55–56.

Malecka, J. 1962. Cytological studies in the genus *Taraxacum*. Acta Biol. Cracov., Ser. Bot. **5**: 117–136, pls. 21–22.

Malecka, J. 1968. Löve, Á. (ed.). IOPB chromosome number reports XVIII. Taxon. **17**: 419–422.

Malecka, J. 1971. Cyto-taxonomical and embryological investigations on a natural hybrid between *Taraxacum kok-saghyz* Rodin and *T. officinale* Weber and their putative parent species. Acta Biol. Cracov., Ser. Bot. **14**: 179–197, pls. 27–29.

Mehra, P. N., Gill, B. S., Mehta, J. K. and Sidhu, S. S. 1965. Cytological investigations on the Indian Compositae. I. North-Indian taxa. Caryologia **18**: 35–68.

Mehra, P. N. and Remanandan, P. 1969. Löve, Á. (ed.). IOPB chromosome number reports XXII. Taxon **18**: 433–442.

Miyaji, Y. 1932. On the chromosome numbers in the genus *Taraxacum*. Bot. Mag., Tokyo **46**: 406–408. (in Japanese)

Moore, R. J. (ed.). 1973. Index to plant chromosome numbers 1967–1971. p.430. International Bureau for Plant Taxonomy and Nomenclature,

Utecht.
Morita, T. 1988. Recent topics about *Taraxacum* agamosperms. Collect. Breed. **50**: 128–132. (in Japanese)
Mulligan, G. A. 1959. Chromosome numbers of Canadian weeds. II. Canad. J. Bot. **37**: 81–92.
Mulligan, G. A. 1984. Chromosome numbers of some plants native and naturalized in Canada. Nat. Canad. **111**: 447–449.
Murín, A. and Váchová, M. 1970. Májovský, J. (ed.). Index of chromosome numbers of Slovakian flora Part 1. Acta Fac. Rerum Nat. Univ. Comen. Bot. **16**: 1–26.
Okabe, S. 1951. On the chromosome numbers in Asiatic species of *Taraxacum*. Coord. Res. Gen. **2**: 3–6. (in Japanese with English summary)
Panigrahi, G. and Kamathy, R. V. 1960. Studies on Indian biotypes of *Taraxacum officinale* Weber. Proc. Ind. Sci. Congr. **47**: 74.
Parfenov, V. I. and Dmitrieva, S. A. 1987. Kariologicheskaja kharakteristika predstavitelej flory sosudistykh rastenij Berezinskogo Biosfernogo Zapovednika. II. Zapov. Belorussii Issl. **11**: 62–69. (in Russian)
Peng, C.-I. and Hsu, C.-C. 1977. Löve, Á. (ed.). IOPB chromosome number reports LVIII. Taxon **26**: 557–565.
Peng, C.-I. and Hsu, C.-C. 1978. Chromosome numbers in Taiwan Compositae. Bot. Bull. Acad. Sin. **19**: 53–66.
Poddubnaja-Arnoldi, V. and Dianowa, V. 1934. Eine zytoembryologische Untersuchung einiger Arten der Gattung *Taraxacum*. Planta **23**: 19–46.
Pólya, L. 1950. Magyarországi növényfajok kromoszómaszámai II. Ann. Biol. Univ. Debreceniensis **1**: 46–56.
Richards, A. J. 1970. Eutriploid facultative agamospermy in *Taraxacum*. New Phytol. **69**: 761–774, pl. 1.
Richards, A. J. 1973. The origin of *Taraxacum* agamospecies. Bot. J. Linn. Soc. **66**: 189–211.
Rohweder, H. 1937. Versuch zur Erfassung der mengenmässigen Bedeckung des Darss und Zingst mit polyploiden Pflanzen. Ein Beitrag zur Bedeutung der Polyploidie bei der Eroberung neuer Lebensräume. Planta **27**: 500–549.
Sato, K., Iwatsubo, Y., Watanabe, M. and Ohta, M. 2004. *Taraxacum officinale* complex in Mt. Tateyama. Bull. Toyama Sci. Mus. (27): 53–60. (in Japanese with English summary)
Sharma, A. K. and Chatterjee, T. 1961. Structural hybridity in a diploid *Taraxacum*. Naturwissenschaften **48**: 109–110.
Shibaike, H. 2005. Agamospermous triploids meet sexual diploids: a case study of *Taraxacum officinale* in Japan. Biol. Sci. (Tokyo) **56**: 74–82. (in Japanese)
Shibaike, H. and Morita, T. 2002. Hirogaru zasshu tanpopo. Iden **56** (2): 16–18. (in Japanese)
Shibaike, H., Uetake, T., Kusumoto, Y., Yano, H. and Ide, M. 2005. Genetic diversity of hybrid dandelions and their clone distribution in Kanto plain. Pap. Environ. Inform. Sci. (19): 279–284. (in Japanese with English summary)
Stebbins, G. L. 1971. Chromosomal evolution in higher plants. 216 pp. Edward Arnold, London.
Takemoto, T. 1954. Cytological studies on *Taraxacum*. II. Jpn. J. Genet. **29**: 177. (in Japanese)
Takemoto, T. 1956. Cytological studies on *Taraxacum*. IV. Jpn. J. Genet. **31**: 312–313. (in Japanese)
Takemoto, T. 1961. Cytological studies on *Taraxacum* and *Ixeris* I. Some Japanese species of *Taraxacum*. Bull. Sch. Educ., Okayama Univ. (11): 77–94.
Taylor, R. L. and Mulligan, G. A. 1968. Flora of Queen Charlotte Islands. Part 2. p.120. Queen's Printer, Ottawa.
Tischler, G. 1934. Die Bedeutungen der Polyploidie für die Verbreitung der Angiospermen, erlautert an den Arten Schleswig-Holsteins, mit Ausblicken auf andere Florengebiete. Bot. Jahrb. Syst. **67**: 1–36.
Tischler, G. 1937. Die Halligenflora der Nordsee im Lichte cytologischer Forschung. Cytologia Fujii Jub. Vol.: 162–170.
Van Loon, J. C. and de Jong, H. 1978. Löve, Á. (ed.). IOPB chromosome number reports LIX. Taxon **27**: 53–61.
Watanabe, M., Ogawa, M., Naito, T., Kanzaki, M., Shimomura, H. and Serizawa, S. 1997. Frequency and distribution of the hybridized alien dandelions in Osaka Prefecture. Bull. Kansai Organ. Nat. Conserv. **19** (2): 69–77. (in Japanese)

Zhai, D.-T. and An, Z.-X. 1996. A new species of *Taraxacum* from Xinjiang. Acta Phytotax. Sin. **34**: 318–323, pl. I. (in Chinese with English summary)

Zhai, D.-T., An, Z.-X. and Tan, D.-Y. 1997. A search for sexual and agamospermous *Taraxacum* species in Xinjiang. Acta Bot. Boreal.-Occid. Sin. **17**: 1–7, pl. I. (in Chinese with English summary)

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佐藤杏子[1]・岩坪美兼[2]・渡邊幹男[3]・芹沢俊介[3]・鳴橋直弘[2]：富山県産セイヨウタンポポ（キク科）の染色体数

富山県内10ヵ所より採集したセイヨウタンポポ（*Taraxacum officinale* Weber）386個体の染色体数を明らかにした。観察を行った386個体中231個体（59.8%）は2n=24の三倍体であり，155個体（40.2%）は2n=32の四倍体であった。10ヵ所すべての採集地で2つの細胞型が観察されたことから，富山県には遍在的に2つの細胞型が混生していることが明らかとなった。

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