

SHORT NOTES

Chromosomes of bipaliid land planarians from the vicinity of Nagasaki in Kyûshû, Southern Japan (Platyhelminthes, Tricladida, Terricola)

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Nagasaki Prefecture is located in the north-western part of Kyûshû, Southern Japan; it consists of peninsulas and many islands on the East China Sea (Nagasaki City: lat. 32°44'N, long. 129°53'E; alt. 26 m; average air temp., 15.6°C; total rainfall, 1,967 mm/y). Eight species of bipaliid land planarians were collected in the vicinity of Nagasaki City. They consist of three identified and five unidentified species. Their external appearance and collection records will be given here, together with tentative karyological data. For examination of chromosome numbers and karyotypes, our standard method was employed (OKI et al., 1980, 1991).

1. *Bipalium nobile* Kawakatsu et Makino, 1982. Nagasaki City (Nameshi: 22 VI, '98); Nishisonogi-gun (Iôjima: 28 IV, '98). Typical appearance was observed (120–300 mm long and 5–10 mm wide). Chromosome no.: $2x = 10$, with a karyotype of $2m + 2m + m + sm + 2sm + 2sm$ (Nameshi).

2. *Bipalium multilineatum* Makino et Shirasawa, 1983. Nagasaki City (Bunkyô: 24 and 29 IV, '98); Nishisonogi-gun (Kinkai, 2 sts. 25 VI, '96 / 28 VII '99; Nagayo: 30 VI, '97 / 7 V, '98). Typical appearance was observed (40–150 mm long and 2–3 mm wide). Chromosome no.: $2x = 10$, with karyotypes of $2m + sm + st + 2sm + 2sm + sm + st$ (Bunkyô), $2m + 2sm + 2st + 2sm + 2sm$ (Kinkai) and $2m + sm + st + 2st + 2st + sm + st$ (Nagayo). No sexual animal is known in this fissiparous species.

3. *Bipalium kewense* Moseley, 1878. Nagasaki City (Kakidô: 4 VII, 25 X, '96; Bunkyô: 26 IX, '96); Nishisonogi-gun (Nagayo: 17 XI, '97 / 13 IV, 8 X, '98). Typical appearance was observed (60–200 mm long and 3–5 mm wide). Chromosome no.: $2x = 18$, with karyotypes of $2m + 2m + 2m + 2st + 2sm + 2sm + 2sm + 2sm + 2sm$ (Bunkyô and Kakidô) and $2m + 2m + 2m + 2sm + m + st + 2st + 2st + 2sm + 2sm$ (Nagayo).

4. *Bipalium* sp. Nagasaki-1. Isahaya City, Nagasaki Pref. (26 XI, '97). A lunate or semilunate head moderately large (70 mm long and 4 mm wide); dark brown above with one mid-dorsal and two lateral stripes; with a pair of indistinct, dark lateral stripes on the ventral side. Chromosome no.: $2x = 10$, with a karyotype of $2m + 2m + 2m + 2m + 2sm$.

5. *Bipalium* sp. Nagasaki-2. Shimabara City, Nagasaki Pref. (14 VI, '98). A lunate head well developed (70 mm long and 6 mm wide); dark grayish brown above with one mid-dorsal and two marginal stripes; with a pair of indistinct, lateral stripes on the ventral side. Chromosome no.: $2x = 10$, with a karyotype of $2m + 2sm + 2sm + 2m + m + sm$.

6. *Bipalium* sp. Nagasaki-3. The same locality as *B.* sp. Nagasaki-2 (5 XI, '97). A semilunate head well developed (80 mm long and 5–7 mm wide); light yellowish brown above with one broad mid-dorsal and two thin marginal stripes; with a pair of indistinct, lateral stripes on the ventral side. Chromosome no.: $2x = 10$, with a karyotype of $2m + 2m + m + sm + 2m + 2m$.

7. *Bipalium* sp. Nagasaki-4. Nagasaki City (Bunkyô: 24 X, '97, 16 II, '99). A lunate head moderately developed (30 mm long and 2–4 mm wide); dark brown above with one blackish mid-dorsal stripe; without stripes on the ventral side. Chromosome no.: $2x = 10$, with a karyotype of $2m + m + sm + 2sm + 2m + 2m$.

8. *Bipalium* sp. Nagasaki-5. Shimabara City, Nagasaki Pref. (Benten: 20 & 29 X, '96); Kitatakaki-gun (Takakichô: 14 III, '98). A semilunate head moderately large (200 mm long and 10–15 mm wide); blackish brown to black above; with a pair of dark, indistinct stripes on each lateral side of the creeping sole. Chromosome no.: $2x = 12$, with a karyotype of $2m + 2st + 2m + 2sm + 2m + 2m$.

Photographs of live specimens and idiograms of these eight bipaliid species can be found in a preprint paper by KAWAKATSU et al. (2000).

Note. Species of *Bipalium* Stimpson, 1857, and *Novibipalium* Kawakatsu, Ogren et Froehlich, 1998, cannot be separated on the basis of external morphology. Thus, it is possible that the five unidentified *Bipalium* species may include *Novibipalium* species (KAWAKATSU et al., 1998).

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