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| --- |
| Table S2. Binary data of genitalia |
| Species | Locality | Specimen code in tree | MPFP | MAP | MFB | FB1 | FB2 | FB3 |
| *Parafontaria**P. doenitzi**P. doenitzi**P. doenitzi**P. erythrosoma**P. erythrosoma**P. ishiii**P. crenata**P. crenata**P. laminata**P. laminata**P. laminata**P. laminata**P. laminata**P. laminata**P. laminata**P. longa**P. longa* ?*P. longa**P. longa**Parafontaria tonominea* species complex*P. tokaiensis**P. tokaiensis**P. falcifera**P. falcifera**P. tonominea**P. tonominea**P. tonominea**P. tonominea**P. tonominea**P. tonominea**P. tonominea**P. tonominea**P. tonominea**P. tonominea**P. tonominea**P. tonominea* (a)*P. tonominea* (b)*P. tonominea**P. tonominea**P. tonominea**P. tonominea**P. tonominea**P. tonominea**P. tonominea* (a)*P. tonominea* (b)*P. tonominea**P. tonominea**P. tonominea**P. tonominea**P. tonominea**P. tonominea* (a)*P. tonominea* (b)*P. tonominea* (a)*P. tonominea* (b)*P. tonominea* (a)*P. tonominea* (b)*P. tonominea**P. tonominea*Species belonging to genera related to *Parafontaria**Levizonus montanus**L. takakuwai**L. takakuwai**Xystodesmus tokaiensis**X. serrulatus**X. gracilipes**X*. sp. 1*X*. sp. 2*Riukiaria semicircularis semicircularis**R. semicircularis semicircularis**R. semicircularis semicircularis**R. semicircularis semicircularis**R*. sp. 1*R. cornuta**R. scutata**R. scutata**R. holstii**R. holstii**R. falcifera**R. falcifera**R. chelifera**R. mundyi**Yaetakaria neptuna*Xystdesmidae gen et sp. 1Xystdesmidae gen et sp. 2Xystdesmidae gen et sp. 3*Sigmoria trimaculata trimaculata*Outgroups for phylogenetic analysis*Nedyopus* sp.Polydesmidae gen. et sp. 1Polydesmidae gen. et sp. 2Paradoxosomatidae gen. et sp. | Japan: Tochigi: FujiharaJapan: Tochigi: NikkoJapan: Tochigi: AshioJapan: Tochigi: FujiwaraJapan: Ibaraki: OaraiJapan: Chiba: NagaeJapan: Aichi: HouraiJapan: Aichi: ShinshiroJapan: Ishikawa: Kanazawa: TawaraJapan: Ishikawa: Kanazawa: HigashiJapan: Yamanashi: Daibosatsu-togeJapan: Nagano: SanadaJapan: Nagano: MatsumotoJapan: Nagano: OutakiJapan: Gifu: MiyaJapan: Fukui: FukuiJapan: Fukui: OhnoJapan: Gifu: GujoJapan: Gifu: MinoJapan: Shizuoka: Kakegawa: KamisaigoJapan: Shizuoka: Kakegawa: YasakaJapan: Toyama: NantoJapan: Ishikawa: ShiramineJapan: Tochigi: FujiharaJapan: Tochigi: AshikagaJapan: Chiba: NagaeJapan: Niigata: ItoigawaJapan: Ishikawa: ShiramineJapan: Gifu: GujoJapan: Gifu: MinoJapan: Gifu: GifuJapan: Shizuoka: MoriJapan: Aichi: ShinshiroJapan: Mie: FujiwaraJapan: Mie: YunoyamaJapan: Mie: YunoyamaJapan: Mie: KameyamaJapan: Kyoto: Sakyo: KamigamoJapan: Kyoto: Sakyo: ShugakuinJapan: Kyoto: Ukyo: KumogahataJapan: Kyoto: MiyamaJapan: Kyoto: YagiJapan: Kyoto: SonobeJapan: Kyoto: SonobeJapan: Kyoto: Mizuho: Kumano-jinjaJapan: Kyoto: Mizuho: IjiriJapan: Kyoto: Mizuho: SarabikiJapan: Osaka: HigashiosakaJapan: Hyogo: SasayamaJapan: Hyogo: ShinguJapan: Hyogo: ShinguJapan: Wakayama: KainanJapan: Wakayama: KainanJapan: Wakayama: HidakaJapan: Wakayama: HidakaJapan: Tokushima: SanagouchiJapan: Ehime: BesshiyamaJapan: Sapporo: Hokkaido Univ.Japan: Sapporo: MaruyamaJapan: Sapporo: SankakuyamaJapan: Shizuoka: NakakawaneJapan: Wakayama: HidakaJapan: Tokushima: NishiiyayamaJapan: Kumamoto: MisatoJapan: Kagoshima: YamatoJapan: Hyogo: ShinguJapan: Ehime: SaijoJapan: Kumamoto: KikuchiJapan: Kumamoto: MisatoJapan: Kumamoto: KikuchiJapan: Kumamoto: MisatoJapan: Kagoshima: TatsugoJapan: Kagoshima: AmamiJapan: Okinawa: Kunigami: YonaJapan: Okinawa: MotobuJapan: Okinawa: Kunigami: BenokiJapan: Okinawa: Kunigami: YonaJapan: Okinawa: IshigakiJapan: Okinawa: YonaguniJapan: Okinawa: MotobuChina: Hubei: ShennongjiaChina: Sichuan: NanjiangxianChina: Sichuan: NanjiangxianCanada: Ontario: WellingtonJapan: Kagoshima: KakeromaKorea: Gangwon: BaekdamsaCanada: Ontario: WellingtonChina: Sichuan: Nanjiangxian | Y290\_D1Y95\_D2Y10\_D3Y94\_E2Y9\_E1Y11\_I1Y93\_C1Y43\_C2Y126\_M1Y218\_M2Y315\_M3Y4\_M4Y410\_M5Y119\_M6Y223\_M7Y221\_G1Y216\_G2Y96\_G3Y2\_G5Y92\_K1Y3\_K2Y5\_F1Y105\_F2Y99\_P2Y100\_P3Y103\_P4Y23\_P6Y106\_P7Y123\_P8Y153\_P9Y124\_P10Y101\_P14Y67\_P15Y104\_P16Y85\_P17Y88\_P18Y121\_P19Y32\_P23Y22\_P24Y157\_P26Y89\_P28Y102\_P32Y39\_P33Y41\_P34Y330\_P35Y278\_P36Y340\_P37Y81\_P38Y76\_P41Y58\_P42Y60\_P43Y64\_P44Y66\_P45Y36\_P46Y37\_P47Y56\_P49Y57\_P52Y8\_OL1Y226\_OL2Y6\_OL3Y129\_X1Y46\_X2Y400\_X3Y418\_X4Y401\_X5Y304\_R2Y161\_R3Y307\_R4Y111\_R5Y309\_R6Y110\_R7Y391\_R8Y415\_R9Y114\_R10Y310\_R11Y109\_R12Y393\_R13Y112\_R14Y113\_R15Y115\_Y1Y407\_OX1Y406\_OX2Y404\_OX3Y409\_OS1Y422Y426Y427Y429 | BBBBBBBBBBBBBBBBBBBBBBBNABBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBAAAAAAAAAAAANAAAAAAAAAAAANANANANA | BBBBBBBBBBBBBBBBBBBBBBBNABBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBAAAAAAAAAAAAAAANAAAAAAAAAAAANANANANA  | AAAAAABBBBBBBBBBBBBBBBBNABBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBAAAAAAAAAAAAAAANAAAAAAAAAAAANANANANA | BNABBBBBBBBBBBBBBBBBBBBNABNABNANABBBBBBBBNANANABBBBBBBBBBBBBBBBBBBBBAANANAAAAAAAAAAAAAAAAANANAANANANANANA | BNABBBBBBBBBBBBBBBBBBBBNABNABNANABBBBBBBBNANANABBBBBBBBBBBBBBBBBBAAAAANANAAAAAAAAAAAAAAAAANANAANANANANANA | ANAAAAAAAAAAAAAAAAAAAABNABNABNANABBBBBBBBNANANABBBBBBBBBBBBBBBBBBAAAAANANAAAAAAAAAAAAAAAAANANAANANANANANA |
| MPFP: A, present; B, absent. MAP: A, absent; B, present. MFB: A, absent; B, present. FB1: A, absent; B, present. FB2: A, absent; B, well-developed. FB3: A, absent; B, well-developed and partly sclerotized. See the Methods and Fig. S3 for the detailed explanations of the binary traits. (a) and (b) after species names in the *P. tonominea* species complex denote each of two sympatric species. |