**Supplementary Table S1.** Comparison of *Paramonostomum* species according the body shape and size. Measurements are given in micrometers. Abbreviations: A, absent; Bif, bifurcal; BL, body length; BR, brackish water; BW, body wide; Ca, caeca; BF, bursa of Fabricius; CSL, cirrus-sac length; DaeCSb/ BL, distance ratio from anterior end to cirrus-sac base/ body length; DH, definitive host; DpeVt/BL, distance ratio from the posterior end to vitellaria tip/ body length; EL, egg length; F, family; FW, freshwater; GD, geographical distribution; GP, genital pore; H, habitat; Int, intestine; M, marine; O, order; P, present; Ph, pharynx; Post, postbifurcal; Pre, prebifurcal; R, references; Rec, rectum; Si, site of infection

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| **Species and shape** |  **BL**  |  **BW**  | **Ph** | **GP** | **CSL** | **DaeCSb/BL** | **DpeVt/BL** | **EL** | **DH (O/ F)** | **H** | **Si** | **GD** | **R** |
| **"Oval group"**  |   |   |   |   |   |   |   |   |   |   |   |   |   |
| *P. parvum* Stunkard and Dunihue, 1931 | 250-500 | 200-350 | A | Post | 35-60 | 0.35 | 0.77 | 21-24 | Anseriformes: Anatidae | FW | Int | North America | Stunkard and Dunihue (1931), Harwood (1939), Bullock (1952) |
| *P. pseudoalveatum* Price, 1931 | 387-496 | 310-341 | A | Pre | 74-97 | 0.33 | 0.7 | 18-20 | Anseriformes: Anatidae, Rodentia: Cricetidae | FW, BR, MA, TE | Int | North America, South America | Price (1931), Bullock (1952), Drago et al. (2007) |
| *P. anatis* Garkavi, 1965 |  420-600  |  280-380  | A | Bif | 100-200 | - | - | 16-18 | Anseriformes: Anatidae | BR | Int | Europe, Asia | Garkavi (1965), Filimonova (1985) |
| *P. brantae* Bullock, 1952 | 500-900 | 300-500 | A | Post | 120-250 | 0.42 | 0.62 | 15-19 | Anseriformes: Anatidae | FW | Int, Ca | North America | Bullock (1952) |
| *P. alveatum* (Mehlis in Crepiln, 1846) Lühe, 1909-Type species |  600-1,000  |  400-700  | A | Pre/ Bif/ Post | 180-240 | 0.37 | 0.73 | 19-21 | Anseriformes: Anatidae, Charadriiformes: Scolopacidae, Charadriidae | FW, BR, MA | Int | Europe, Asia, North America | Creplin (1846), Lühe (1909), Bullock (1952), Stunkard (1967) |
| *P. bursae* Smith and Hickman, 1983 | 950-1,650 | 610-910 | A | Post | 160-330 | 0.35 | 0.55 | 18-23 | Gruiformes: Rallidae | FW, MA | Ca | Asia | Baugh (1958) |
| *P. philippinense* Velasquez, 1969 | 1,036-1,680 | 490-630 | A | Pre | 160-294 | 0.48 | 0.26 | 15-18 | Anseriformes: Anatidae | FW | Ca | Asia | Velasquez (196)9 |
| *P. orientalis* Bhutta and Khan, 1975 | 2,030 | 1,060 | A | Post | 490 | 0.34 | 0.66 | 15-17 | Aves: "Kraig" | - | Int | Asia | Bhutta and Khan (1975) |
| *P. fulicai* Baugh, 1958 | 2,400 | 1,600 | A | Bif | 564 | 0.38 | 0.49 | 18-21 | Anseriformes: Anatidae | FW | BF | Australia | Smith and Hickman (1983) |
| **"Pyriform group"**  |   |   |   |   |   |   |   |   |   |   |   |   |   |
| *P. palwanense* Fischthal and Kuntz, 1972 | 322-355  | 154-170 | A | Post | 42 | 0.39 | 0.36 | 19-26 | Cuculiformes: Cuculidae | TE | Int | Asia | Fischthal and Kuntz (1972) |
| *P. macrostomum* Kü, 1938 | 1,032 | 608 | A | Post | 296 | 0.49 | 0.47 | 18-20 | Gruiformes: Rallidae | FW | Ca | Asia | Kü (1938) |
| *P. himantopodis* Harwood, 1939 | 1,100-1,600 | 400 | A | Post | 340-730 | 0.49 | 0.43 | 20 | Charadriiformes: Recurvirostridae | FW, BR | Int | Caribe | Harwood (1939) |
| *P. dadui* Birmani, Dharejo and Khan, 2020 | 1,660-2,480 | 960-1,300 | A | Bif | 410-630 | 0.39 | 0.56 | 13-18 | Gruiformes: Rallidae | FW, MA | Int | Asia | Birmani et al. (2020) |
| **"Elongate group"** |   |   |   |   |   |   |   |   |   |   |   |   |   |
| *P. caeci* Smith and Hickman, 1983 | 597-907 | 151-219 | A | Pre | 290-400 | 0.55 | 0.37 | 23-29 | Anseriformes: Anatidae, Podicipediformes: Podicipedidae | FW, MA | Int, Ca, Rec | Australia | Smith and Hickman (1983) |
| ***P. deseado* n. sp.** | **608-784** | **212-279** | **A** | **Post** | **97-146** | **0.43** | **0.38** | **25-33** | Charadriiformes: Haematopodidae | **MA** | **Int, Ca** | **South America** | **This study** |
| *P. actitidis* Cable, Connor and Balling, 1960 | 760-960 | 290-330 | A | Post | 280-430 | 0.52 | 0.41 | 18-20 | Charadriiformes: Scolopacidae, Charadriidae | FW, BR, MA | Int, Ca | Caribe | Cable et al. (1960) |
| *P. alveoelongatum* Filimonova, 1971 | 784-1,075 | 358-448 | A | Bif | 340 | 0.52 | 0.37 | 22 | Anseriformes: Anatidae, Charadriiformes: Scolopacidae | FW, BR, MA | Ca | Russia | Filimonova (1971, 1985), McDonald (1981) |
| *P. musculosum* Belopol´skaya, 1968 |  1,130-1,520  |  290-390  | A | Bif | 216-343 | - | - | 18-21 | Charadriiformes: Scolopacidae | - | Ca | Russia | Filimonova (1985) |
| *P. histrionici* Ching, 1961 | 1,357-1,938 | 433-609 | A | Post | 427-644 | 0.54 | 0.33 | 17-22 | Anseriformes: Anatidae | FW | Int | North America | Ching (1961) |
| *P. bucephalae* Yanaguti, 1935 | 1,500-2,120 | 450-600 | A | Post | 450 | 0.5 | 0.48 | 19-21 | Anseriformes: Anatidae | FW, BR | Ca | Asia | Yamaguti (1935), Van Strydonck (1965) |
| *P. nettioni* Baugh, 1958 | 1,660-1,900 | 498-581 | A | Pre | 498-451 | 0.38 | 0.45 | 16 | Anseriformes: Anatidae | FW, BR | Rec | Asia | Baugh (1958) |
| *P. chabaudi* Van Strydonck, 1965 | 1,720-2,470 | 544-775 | A | Post | 447-732 | 0.43 | 0.38 | 19-25 | Anseriformes: Anatidae, Charadriiformes: Haematopodidae | FW, MA | Int | Europe | Van Strydonck (1965) |
| *P. kuntzi* Bhutta and Khan, 1975 | 1,730-2,580 | 700-1,120 | A | Post | 313-343 | 0.27 | 0.61 | 18-20 | Gruiformes: Rallidae | FW, BR | Int | Asia | Bhutta and Khan (1975) |
| *P. signiense* Jones and Williams, 1969 | 1,800-3,200 | 800-1,400 | A | Pre | 320-480 | 0.24 | 0.74 | 17-19 | Charadriiformes: Chionidae | MA | Rec, BF | Antarctic Argentina | Jones and Williams (1969) |
| *P. macrocvesiculum* Dharejo, Bilqees and Khan, 2006 | 1,880-1,980 | 710-740 | P | Post | 230-260 | 0.33 | 0.43 | 16-20 | Gruiformes: Rallidae | FW | Int | Asia | Dharejo et al. (2006) |
| *P. harwoodi* Nath and Pande, 1962 | 2,040-2,330 | 700-810 | A | Pre | 593 | 0.3 | 0.52 | 19 | Anseriformes: Anatidae | FW | Ca | Asia | Nath and Pande (1962) |
| *P. bubaki* Birmani, Naz, Khan and Shaikh, 2013 | 2,240-3,260 | 800-1,220 | P | Bif | 740-870 | 0.37 | 0.48 | 19-21 | Gruiformes: Rallidae | FW | Int | Asia | Birmani et al. (2013) |
| *P. thapari* Gupta and Gupta, 1976 | 2,400-2,660 | 800-480 | A | Pre | 620-700 | 0.33 | 0.53 | 15-18 | Anseriformes: Anatidae | FW | Int | Asia | Gupta and Gupta (1976) |
| *P. salimi* Gupta and Singh, 1985 | 2,670-3,420 | 960-1,160 | A | Pre | 740-840 | 0.32 | 0.54 | 11-18 | Anseriformes: Anatidae | FW, MA | Ca | Asia | Gupta and Singh (1985) |
| *P. ovatum* Hsü, 1935 | 2,700-4,500 | 800-1,100 | A | Post | 860 | 0.34 | 0.58 | 15 | Anseriformes: Anatidae | FW, BR, MA | Ca | Asia | Hsü (1935) |
| *P. makundi* Gupta and Singh, 1985 | 2,780-2,910 | 960-1,040 | A | Pre | 770-810 | 0.33 | 0.51 | 17-20 | Anseriformes: Anatidae | FW | Int | Asia | Gupta and Singh (1985) |
| *P. kampurense* Gupta and Gupta, 1976 | 3,000 | 950 | A | Post | 1,030 | 0.44 | 0.43 | 4-5 | Anseriformes: Anatidae | FW, MA | Int | Asia | Gupta and Gupta (1976) |
| *P. ionorne* Travassos, 1921 |  3,200  |  1,500  | A | Post | 610 | 0.27 | 0.77 | 19 | Gruiformes: Rallidae, Charadriiformes: Jacanidae, Chionidae | FW, MA | Int, Ca | South America | Travassos (1921, 1969) |
| *P. kherai* Gupta and Singh, 1985 | 3,220-3,870 | 1,030-1,070 | A | Pre | 830-1,080 | 0.31 | 0.49 | 14-19 | Anseriformes: Anatidae | FW, BR | Ca | Asia | Gupta and Singh (1985) |
| *P. querquedulum* Lal, 1936 | 3,398 | 1,110 | A | Pre | 930 | 0.55 | 0.33 | 20 | Anseriformes: Anatidae, Pelecaniformes: Ardeidae | BR | Ca | Asia, Europe | Lal (1936) |
| *P. obtortum* Caballero, 1942 | 3,500 | 1,540 | P | Post | 916 | 0.41 | 0.39 | 24 | Anseriformes: Anatidae | FW | Int, Rec | Mexico | Caballero (1942) |
| *P. poecilorhynchai* Gupta and Gupta, 1976 | 3,600-5,760 | 1,120-1,560 | A | Pre | 1,080-1,680 | 0.35 | 0.51 | 12-16 | Anseriformes: Anatidae | FW, MA | Int | Asia | Gupta and Gupta (1976) |
| *P. aythyae* Thebo, Naz, Dharejo, Siyal and Birmani, 2019 | 3,300-3,760 | 1,100-1,500 | P | Post | 1,925 | 0.28 | 0.47 | 10 | Anseriformes: Anatidae | FW | Int | Asia | Thebo et al. (2019) |
| *P. antarcticum* Graefe, 1968 | 4,010 | 1,830 | A | Pre | 726 | 0.26 | 0.72 | 21-23 | Charadriiformes: Chionidae, Laridae | FW | Rec | Antarctic Argentina | Graefe (1968), Oddening (1982) |
| **"Overlong group"** |   |   |   |   |   |   |   |   |   |   |   |   |   |
| *P. microstomum* Moghe, 1932 | 1,348-1,624 | 375-409 | A | Post | 413 | 0.34 | 0.44 | - | Charadriiformes: Scolopacidae | BR | Int | Asia | Moghe (1932) |
| *P. bagodaroi* Birmani, Burinro, Shaikh and Dharejo, 2016 | 1,470-3,960 | 410-880 | P | Post | 640-680 | 0.4 | 0.57 | 18 |  | FW, BR, MA | Int | Asia | Birmani et al. (2016) |
| *P. bilqeesae* Ghazi, Khan and Sayed, 2013 | 1,810-1,940 | 350-480 | A | Post | 110-120 | 0.30 | 0.53 | 25-31 | Anseriformes: Anhimidae | FW, BR | Int | Asia | Ghazi et al. (2013) |
| *P. echinum* Harrah, 1922 | 2,000-2,500 | 600-700 | A | Post | 580 | 0.38 | 0.35 | 20 | Rodentia: Cricetidae | FW, BR, TE | Int | North America | Harrah (1922) |
| *P. dollfusi* Van Strydonck, 1965 | 2,200-3,850 | 340-429 | A | Pre | 655-1,194 | 0.35 | 0.43 | 16-21 | Anseriformes: Anhimidae | FW | Int | Europe | Van Strydonck (1965) |
| *P. elongatum* Yamaguti, 1934 | 2,300-6,900 | 500-880 | A | Post | 1,800 | 0.49 | 0.39 | 22-23 | Galliformes: Phasianidae, Anseriformes: Anatidae | FW | Int | Asia | Yamaguti (1934), Hsü (1935) |
| *P. casarcum* Lal, 1936 | 3,800 | 950 | A | Pre | 910 | 0.26 | 0.55 | 15 | Anseriformes: Anatidae | FW | Ca | Asia | Lal (1936) |
| *P. malerischi* Dunagan, 1957 | 4,100-4,300 | 750-790 | A | Pre | 1,900-2,190 | 0.50 | 0.47 | 26-28 | Anseriformes: Anatidae | MA | Ca | North America | Dunagan (1957) |
| *P. galli* Tanveer and Chisthi, 2001 | 4,350-4,450 | 1,100-1,125 | A | Bif | 1,130-1,150 | 0.32 | 0.6 | 20-25 | Galliformes: Phasianidae | TE | Int | Asia | Tanveer and Chisthi (2001) |
| *P. indica* Gupta and Gupta, 1976 | 4,550-5,200 | 1,310-1,470 | A | Pre | 1,000-1,450 | 0.28 | 0.58 | 10-17 | Anseriformes: Anatidae | FW | Int | Asia | Gupta and Gupta (1976) |
| *P. fuscicollis* Nasir, Díaz and Guevara, 1970 |  5,910  |  1,350  | A | Pre | 2,000 | 0.42 | 0.35 | - | Charadriiformes: Scolopacidae | FW, BR, MA | Int | South America | Nasir et al. (1970) |