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Supporting Information

Mercury in wild fish from high-altitude aquatic ecosystems in the Tibetan Plateau

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39 **Age Estimation**

40 In this study, fish samples of *Schizothorax macropogon*, *Schizothorax o'connori*,
41 *Schizopygopsis younghusbandi*, *Oxygymnocypris stewartii*, *Ptychobarbus dipogon* and
42 *Schizothorax waltoni* were estimated for their ages based on the Von Bertalanffy growth
43 functions (VBGF) developed earlier from TP fish. The sex ratio of the samples was assumed
44 50%:50%, and the average age of male and female fish was then calculated. Details for each
45 fish species are given below. The readers are reminded that the age determination here is only
46 rough estimation. Back calculating the fish age from length results in a mathematical
47 estimation bias due to switching independent and dependent variables in the equation.

48 **Schizothorax macropogon (1):**

49 Sampling information: Yarlung Tsangbo River, 2004-2006, n=293;

50 Male: $L_t = 49.622[1 - e^{-0.074(t+4.017)}]$

51 Female: $L_t = 65.676[1 - e^{-0.053(t+3.305)}]$

52 Where L denotes the length (cm), t denotes the age (year).

53 **Schizothorax o'connori (2):**

54 Sampling information: Yarlung Tsangbo River, 2008-2009, n=1126;

55 Male: $L_t = 49.97[1 - e^{-0.095(t+0.896)}]$

56 Female: $L_t = 57.69[1 - e^{-0.081(t+0.946)}]$

57 **Schizopygopsis younghusbandi (3):**

58 Sampling information: Yarlung Tsangbo River and Lhasa River, 2002-2005, n=606;

59 Unisex: $L_t = 52.45[1 - e^{-0.06702(t-0.1)}]$

60 **Oxygymnocypris stewartii (4):**

61 Sampling information: Yarlung Tsangbo River, 2008-2009, n=712;

62 Male: $L_t = 59.93939[1 - e^{-0.1686(t-0.6171)}]$

63 Female: $L_t = 87.74821[1 - e^{-0.1069(t-0.5728)}]$

64 **Ptychobarbus dipogon (5):**

65 Sampling information: Yarlung Tsangbo River and Lhasa River, 2004-2006, n=582;

66 Male: $L_t = 49.423 [1 - e^{-0.1197(t+0.7296)}]$

67 Female: $L_t = 59.866 [1 - e^{-0.0898(t+0.7261)}]$

68 **Schizothorax waltoni (6):**

69 Sampling information: Yarlung Tsangbo River, 2004-2006, n=201;

70 Male: $L_t = 68.98 [1 - e^{-0.051(t+3.275)}]$

71 Female: $L_t = 69.11 [1 - e^{-0.056(t+2.466)}]$

72 Table S1. Elevation, number of fish samples, records of temperature and pH data for each sampling site.

Type of ecosystem	Site	Elevation	Number of fish samples	Period	Monthly Mean Minimum ^a	Monthly Mean Maximum ^a	Annual Mean ^a	pH
River	Bomi	2720	7	1961-2003	-11.5	26.3	8.6	8.4
	Bayi	2885	54	1954-2003	-8.8	24.7	8.7	
	Nyang	2915	9	1954-2003	-8.8	24.7	8.7	
	Lulang	3250	6	2007	-18.2 ^b	25.2 ^b	5.6 ^b	
	Lhasa	3585	29	1955-2003	-12.5	26	7.8	
	Dazhuka	3775	7	1975-2003	-14.9	25.3	7.3	
	Rongbu	4270	8	1959-2003	-24.5	21.7	2.4	
Lake	Basong Tso	3484	1	-	-	-	6.3	7.2
	Ranwu	3850	6	1978-2003	-15.1	23.1	4.5	-
	Bangong Tso	4240	7	1961-2003	-25.4	23.3	0.5	-
	Lang Tso	4300	1	1977-2003	-12.4	24.5	6.8	9.5
	Yamdruk Tso	4440	4	1971-2010	-	-	3	9.2-9.3
	Nam Co	4725	27	2006-2008	-20.1 ^c	14.6 ^c	-0.6 ^c	7.8-9.5

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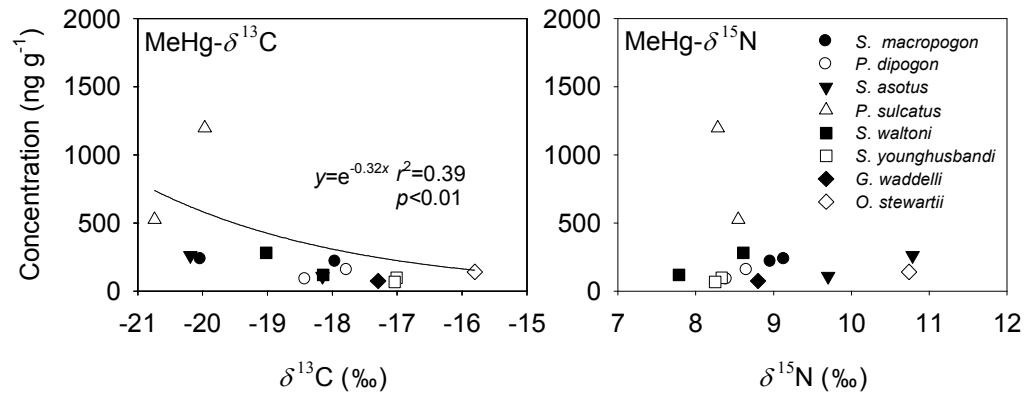
74 Notes:

75 ^a Since there is no long-term temperature monitoring at the sampling sites, data were collected from the nearest and elevation-comparable
 76 meteorological stations operated by the China Meteorological Administration.

77 ^b Cited from Wang et al., 2010.(7), the minimum and maximum of the temperature represent the lowest and highest records based on a 10
 78 minutes average logging over 2007.

79 ^c Cited from Kang et al., 2011. (8).

Figure S1. Relationship between MeHg concentrations and stable isotope signatures ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$) in the fish from the Yarlung Tsangbo River (Bayi, site 11).



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