

# Some colourful fishes of the genus *Puntius* Hamilton

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## INTRODUCTION

CERTAIN SMALL AND colourfully marked Malaysian fishes of the genus *Puntius* Hamilton, have for several years attracted widespread attention among aquarists. Owing to certain similarities in their colour patterns, there has been some confusion between the species concerned. Meinken (1939a & 1939b), appears to have made the first detailed comparison of the six species in question, namely, *Puntius tetrazona* (Bleeker), *P. partipentazona* Fowler, *P. pentazona* (Boulenger), *P. hexazona* (Weber & de Beaufort), *P. rhombo-ocellatus* Koumans and *P. anchisporus* (Vaillant). More recently Klausewitz (1956), considered *P. hexazona* as a subspecies of *P. pentazona* and similarly *P. partipentazona* a subspecies of *P. tetrazona*. I agree with his opinions.

This account is merely an attempt to correct the synonymy and I have not set out to re-describe the species in any detail. However, a key and illustrations are provided as an aid to identification. The following abbreviations are used:— 1. BM=British Museum (Natural History); 2. ML=Rijksmuseum van Natuurlijke Historie, Leiden; 3. MNP=Museum National d'Historie Naturelle, Paris; 4. NMS=Singapore National Museum; 5. NRS=Naturhistoriska Riksmuseum, Stockholm; 6. SMF=Senckenbergische Naturforschende Gesellschaft, Frankfurt am M; 7. St.=Natural History Museum, Stanford University; 8. USNM=United States National Museum, Washington; 9. ZMA=Zoologisch Museum, Amsterdam; 10. ZSI=Zoological Survey of India, Calcutta.

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## KEY TO SOME SPECIES OF *PUNTIUS* HAMILTON

The following key has been constructed to modify and to be interposed with that given in Weber and de Beaufort (1916: 171).

- I. Linea lateralis incomplete, no rostral barbels.
- b. Linea lateralis with 6 to 11 perforated plus 8 to 14 unperforated scales, excluding 1 or 2 on caudal base. Caudal peduncle surrounded by 12 scales.
  - (i) Dark patch on dorsal fin not extending beyond basal scale row of that fin. No dark spot on L.1. . . . . *P. tetrazona tetrazona*
  - (ii) Dark patch on dorsal fin extending below fin base across 3 to 4 scale rows. Sometimes a dark spot below this on L.1. . . . . *P. tetrazona partipentazona*

## II. Linea lateralis complete.

## A. Four barbels. Anal spines rather weak.

2. 7 or less scales between L.1. and dorsal.

L.1. by exception 34, generally less.

A. 12 scales round caudal peduncle.

(a) With more or less complete transverse dark bands.

2. 3-3½ scales between L.1. and ventrals. 6 transverse markings.

(a) 5½ scales between L.1. and dorsal.

(i) A dark spot at the base of the last dorsal ray .....  
..... *P. pentazona pentazona*

(ii) No such spot ..... *P. pentazona johorensis*

(b) 4½ scales between L.1. and dorsal ..... *P. rhombo-ocellatus*

B. 14-18 scales round caudal peduncle.

(b) Height more than 2 in length.

1. L.1. 19 to 23. Caudal peduncle surrounded by 14 scales .....  
..... *P. anchisporus*.

## SYSTEMATICS

***Puntius tetrazona tetrazona* (Bleeker).**

Figure 1a.

*Capoeta tetrazona* BLEEKER, 1855, Nat. Tijd. Ned.-Indie, 9: 262—Lahat, Palembang province, Sumatra.

*Systemus (Capoeta) sumatranus* BLEEKER, 1860, Act. Soc. Sci. Indo-Neerl., 7: 354—Lahat, Sumatra.

*Puntius (Capoeta) sumatranus* BLEEKER, 1864-65, Atlas Ichth., 3: 108, pl. 103, fig. 11—Lahat, Sumatra.

*Barbus sumatranus* GUNTHER, 1868, Cat. Fish. British Mus., 7: 140—Lahat, Sumatra.

Non *Barbus sumatranus* VAILLANT, 1893a, Bull. Soc. Zool. France, 18: 57—Borneo.

Non *Barbus sumatranus* VAILLANT 1893b, Nouv. Arch. Mus. Hist. Nat., (3) 5: 82—Borneo.

*Puntius sumatranus* (p.p.) WEBER and DE BEAUFORT, 1916, Fish. Indo-Aust. Archipel., 3: 191—Lahat, Taluk, Ringat and Deli, Sumatra.

*Barbus tetrazona* FRASER-BRUNNER, 1938, Aquarist & Pondkpr., 7 (12): 320, 1 fig.—Sumatra; MEIKEN, 1939b, Wschr. Aquar. Terrarienk., 36 (6): 81, fig. 1.

*Puntius tetrazona tetrazona* KLAUSEWITZ, 1956, Aquar. Terrar. Z., 9 (10): 259, fig. 2.

*Specimens examined.*—SUMATRA:—Lahat, Palembang, ML. 4951, (three syntypes), BM. 1866.5.2.208, (syntype) and BM. 1867.11.28.178 (syntype), P. L. van Bloemen Waanders; Taluk, four, ZMA. 103261, J. P. Kleiweg de Zwan, 1907; Ringat, four, ZMA. 103262, J. P. Kleiweg de Zwan, 1907; Pagar Alam, five, ZMA. 103264, leg. Mus. Bogor, 25th November 1910; no exact locality, Sumatra, one, SMF. 3741, E. Schmidt, 1955.

Bleeker (1855) originally described the species under the name *tetrazona* and it is not known why he later (1857) described another species under the same name and subsequently (1860) used *sumatranus* for the earlier species. Fraser-Brunner (1938) and Meinken (1939b) have already pointed out the mistake.

The colour pattern is remarkably similar to that of *P. anchisporus* Vaillant (1902) and it is of interest that Vaillant himself (1893a and 1893b) originally confused the two species.

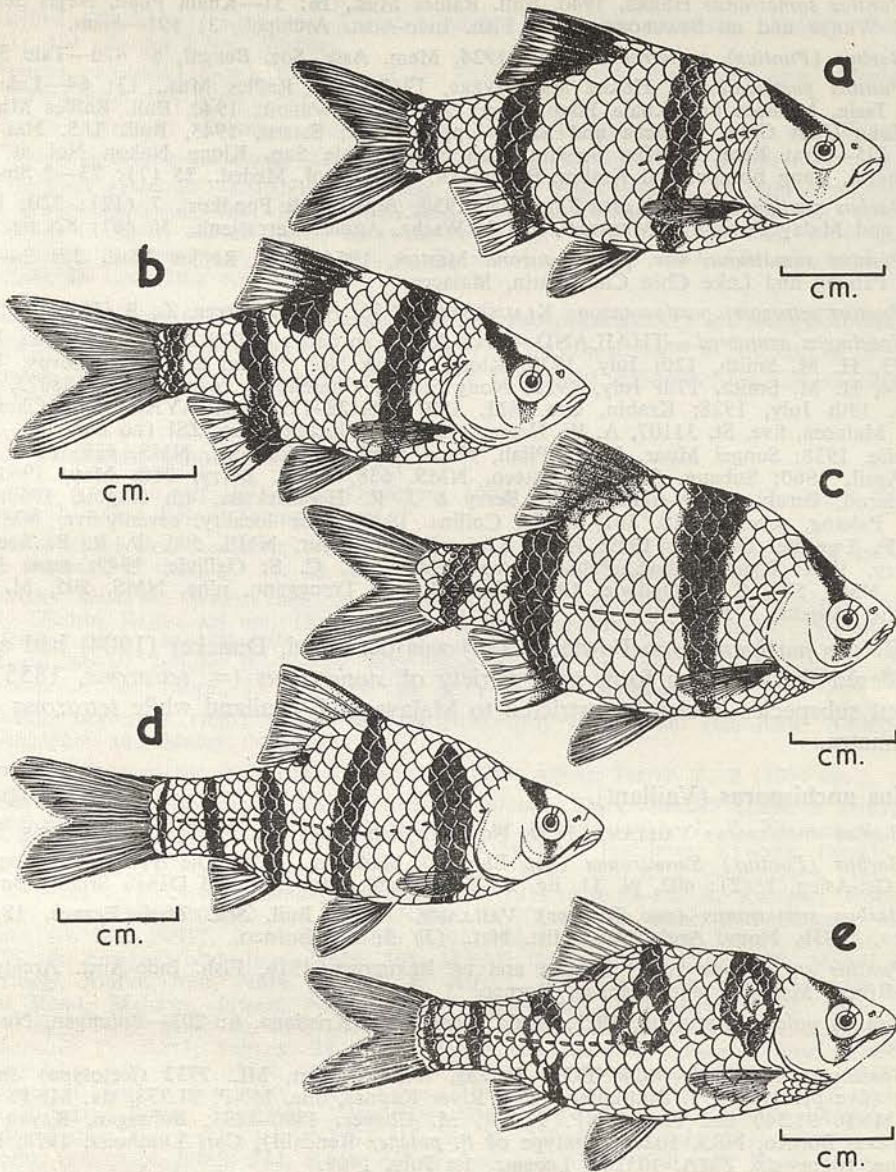


Figure 1. (a) *Puntius tetrazona tetrazona* (Bleeker), Taluk, Sumatra, 1907; (b) *P. tetrazona partipentazona* Fowler, Tasek Bera, Pahang, Malaya, 1940; (c) *P. anchisporus* (Vaillant), Poetoes Genting, Borneo, 1st July, 1909; (d) *P. pentazona pentazona* (Boulenger), Sibu, Sarawak, 28th April, 1960; (e) *P. rhombo-ocellatus* Koumans, holotype, 15 km. from Banjarماسin, Borneo.

***Puntius tetrazona partipentazona* Fowler.**

Figure 1b.

*Puntius partipentazona* FOWLER, 1934, Proc. Acad. Nat. Sci. Philadelphia, 86: 344, fig. 8—Krat, Thailand.

*Barbus sumatranus* var. DUNCKER, 1904, Mitt. Naturh. Mus. Hamburg, 21: 180, pl. 2, fig. 16—Muar River, Tebing Tinggi, Negri Sembilan.

*Puntius sumatranus* HERRE, 1940, Bull. Raffles Mus., 16: 31—Kuala Pilah, Negri Sembilan; (p.p.) WEBER and DE BEAUFORT, 1916, Fish. Indo-Aust. Archipel., 3: 191—Siam.

*Barbus (Puntius) sumatranus* HORA, 1924, Mem. Asia. Soc. Bengal, 6: 470—Tale Sap.

*Puntius partipentazona* HERRE and MYERS, 1937, Bull. Raffles Mus., 13: 64—Lake Chin Chin, Jasin, Malacca and Kuala Pilah, Negri Sembilan; TWEEDIE, 1940, Bull. Raffles Mus., 16: 74—Lake Chin Chin, Malacca and Sauk, Upper Perak; SMITH, 1945, Bull. U.S. Nat. Mus., 188: 175—Krat River at Kao Seming, Kao Sabap, Tale Sap, Klong Nakon Noi at Nakon Sritamarat, Bung Borapet and Krabin; BOESEMAN, 1957, Zool. Meded., 25 (7): 73—? Singapore.

*Barbus partipentazona* FRASER-BRUNNER, 1938, Aquarist & Pondkpr., 7 (12): 320, 1 fig.—Siam and Malay Peninsula; MEINKEN, 1939b, Wschr. Aquar. Terrarienk., 36 (6): 82, fig. 2.

*Puntius sumatranus* var. *partipentazona* MENON, 1954, Bull. Raffles Mus., 25: 24—Tasek Bera, Pahang and Lake Chin Chin, Jasin, Malacca.

*Puntius tetrazona partipentazona* KLAUSEWITZ, 1956, Aquar. Terrar. Z., 9 (10): 259, fig. 2.

*Specimens examined.*—THAILAND:—Ban Ang, Kao Sabap, 2,000 ft. altitude, three, USNM. 103373, H. M. Smith, 12th July, 1928; Klong Nakon Noi, Nakon Sritamarat, seven, USNM. 108074, H. M. Smith, 17th July, 1928; Nong Samet, Chantabun, two USNM. 108073, H. M. Smith, 19th July, 1928; Krabin, two, BM. 1897.10.8.128–129; MALAYA:—Lake Chin Chin, Jasin, Malacca, five, St. 31107, A. W. Herre, 1934; same locality, two, ZSI (no number), M.W.F. Tweedie, 1938; Sungei Muar, Kuala Pilah, Negri Sembilan, fourteen, NMS. 639, P. Y. Berry, 7th April, 1960; Subang, Selangor sixteen, NMS. 638, P. Y. Berry, 28th May, 1960; Lake Chenderoh, Perak, twenty-eight, P. Y. Berry & J. R. Hendrickson, 4th August, 1960; Tasek Bera, Pahang, seven, NMS. 501, H. D. Collins, 1940; same locality, seventy-five, NMS. 503, M.W.F. Tweedie, October, 1949; Kuala Lipis, Pahang, four, NMS. 506, P. R. B. Speakman, January, 1958; Kuala Tahan, Pahang, two, NMS. 502, C. S. Ogilvie, 1949; same locality, three, NMS. 504, C. S. Ogilvie, 1950; Kuala Brang, Trengganu, nine, NMS. 505, M. W. F. Tweedie, August, 1950.

Before *partipentazona* Fowler (1934) was described, Duncker (1904) had already considered the Malayan form as a variety of *sumatranus* (= *tetrazona*, 1855). The present subspecies is clearly restricted to Malaya and Thailand while *tetrazona* occurs in Sumatra.

### ***Puntius anchisporus* (Vallant).**

Figure 1c.

*Barbus anchisporus* VAILLANT, 1902, Notes Leyden Mus., 24: 96, fig. 27—Kapoegas, Borneo.

*Barbus (Puntius) Sumatranus* (nec Bleeker) MARTENS, 1876, Die Preussische Expedition nach Ost-Asien, 1 (2): 402, pl. 11, fig. 2—Bengkayang, Mandhor and Danau Sriang, Borneo.

*Barbus sumatranus* (nec Bleeker) VAILLANT, 1893a, Bull. Soc. Zool. France, 18: 57—Borneo; 1893b, Nouv. Arch. Mus. Hist. Nat., (3) 5: 82—Borneo.

*Puntius anchisporus* (p.p.) WEBER and DE BEAUFORT, 1916, Fish. Indo-Aust. Archipel., 3: 190—Rivers Mahakan and Kapuas, Borneo.

*Puntius pulcher* RENDAHL, 1922, Medd. Zool. Mus. Kristiana, 6: 203—Bulungan, North-east Borneo.

*Specimens examined.*—BORNEO:—Sintang, Kapuas River, ML. 7732 (lectotype) and ML. 12241 (five paratypes), J. Buttikofer, 1894; River Kapuas, one, MNP. 91.338, six, MNP. 91.339, one, MNP. 91.340 and one, MNP. 91.341, M. Chaper, 1890–1891; Bulungan, Kayan River, North-east Borneo, NRS. 10279 (syntype of *P. pulcher* Rendahl), Carl Lumholtz, 1914; Poetoes Genting, twenty-six, ZMA. 103263, Lorentz, 1st July, 1909.

The specimen shown in Vaillant's figure, measuring 65.6 mm. total length, ML. 7732, is herein designated as the Lectotype.

*P. pulcher* Rendahl (1922) was erroneously described with an incomplete lateral line. Rendahl obviously included the unperforated scales beyond the caudal flexure in his lateral line count. The caudal peduncle is surrounded by 14 scales and not 12 scales as described.

### ***Puntius pentazona pentazona* (Boulenger).**

Figure 1d.

*Barbus pentazona* BOULENGER, 1894, Ann. Mag. Nat. Hist., (6) 13: 248—Baram, Sarawak.

*Barbus (Barbodes) pentazona* STEINDACHNER, 1901, Abh. Senckenb. Naturf. Gesellsch., 25 (2): 454—Baram River, Borneo.

*Puntius pentazona* (p.p.) WEBER and DE BEAUFORT, 1916, Fish. Indo-Aust. Archipel., 3: 182—Baram River and Akah River, Borneo.

*Barbus pentazona* MEINKEN, 1939b, Wschr. Aquar. Terrarienk., 36 (6): 882, fig. 4.

*Puntius pentazona pentazona* KLAUSEWITZ, 1956, Aquar. Terrar. Z., 9 (10): 288, fig. 1.

*Specimens examined.*—BORNEO:—Baram, Sarawak, BM. 1889.7.31.12, (three syntypes), C. Hose; Baram, Sarawak, one, BM. 1894.8.3.61, C. Hose; Akah River, Sarawak, four, BM. 1895.7.2.64, C. Hose; Baram River, Sarawak, two, SMF. 886, W. Kukenthal, 1894; Stambak, Saribas River, Sarawak, one, NMS. 512, L. K. Charles, August 1952; Sibuluan, Sarawak, twelve, NMS. 500, D. Cox, 28th April, 1960.

The series I have examined appear to be morphologically indistinguishable from specimens of *P. pentazona johorensis* (Duncker). The colouration in life and of preserved specimens is furthermore identical except for the slight difference in the markings as noted in the key.

### ***Puntius pentazona johorensis* (Duncker).**

*Barbus tetrazona* var. *johorensis* DUNCKER, 1904, Mitt. Naturh. Mus. Hamburg. 21: 178, pl. 1, fig. 3—Muar River, Tebing Tinggi.

*Barbus (Barbodes) hexazona* WEBER and DE BEAUFORT, 1912, Fische, in: A. Maass, Durch Zentral Sumatra, 2: 527, pl. 11, fig. 2—Taluk and Gunung Sahilan, Sumatra.

*Puntius hexazona* WEBER and DE BEAUFORT, 1916, Fish. Indo-Aust. Archipel., 3: 181, fig. 73—Djambi, Bagan api api, Taluk and Lalak on River Inragiri, Sumatra; TWEEDIE, 1936, Bull. Raffles Mus., 12: 20—Woodlands, Singapore; HERRE and MYERS, 1937, op. cit., 13: 63—Mawai district, Johore; BOESEMAN, 1957, Zool. Meded., 25 (7): 73—? Singapore; ALFRED, 1961, Malayan Nat. Journ., 15 (1 & 2): 10, pl. 3, fig. 15—Singapore.

*Puntius pentazona* (p.p.) WEBER and DE BEAUFORT, 1916, Fish. Indo-Aust. Archipel., 3: 182—Singapore and Malay Peninsula.

*Barbus pentazona* var. *hexazona* KLAUSEWITZ, 1956, Aquar. Terrar. Z., 9 (10): fig. 1, p. 258.

*Specimens examined.*—SUMATRA:—Gunung Sahilan, ZMA. 103200 (thirteen syntypes of *B. hexazona*) and Taluk, ZMA. 100253 (syntype of *B. hexazona*), J. P. Kleiweg de Zwan, 1907; Lalak, Indragiri, one, ZMA. 103201, donated by Mus. Hamburg; Rawang, Djambi, nine, ZMA. 103202, P. E. Moorlenburgh, 23rd April 1909; MALAYA:—Singapore, two, BM. 1912.2.2.19–20, J. P. Arnold; Singapore, two, BM. 1913.10.30.27–28, A. Rachow; Woodlands, Singapore, two, ZMA. 103202 and three, NMS. 507, Tan Teck Swee, 28th January 1913; ? Singapore, six, ML. 20912, A. Werner, 10th July 1956; Mawai District, Johore, five, St. 34727, two, ZSI (no number) and three, NMS. 508, M.W.F. Tweedie, February 1937; Mawai Estate, Kota Tinggi, Johore, four, NMS. 513, E. R. Alfred, 15th December 1957; 5½ mile Durian Tunggul Road, Malacca, fifteen, NMS. 533, T. Selvarajah, 12th April 1960; Muar River, Tebing Tinggi, Negri Sembilan, BM. 1905.5.6.6 (ex Sel. Mus. Nr. 1295, paratype of *B. tetrazona* var. *johorensis* Duncker); Subang, 24 miles from Kuala Lumpur, Selangor, four, NMS. 499, Lim Boo Liat, 24th June 1956; 4½ mile Meru Road, Klang, Selangor, sixty-two, NMS. 498, Lim Boo Liat, 3rd August 1960; Krian Swamp, Perak, six, BM. 1911.2.14.9–14, E. Seimund; Merchang swamp forest, Trengganu, forty-four, NMS. 510, M. W. F. Tweedie, August 1950; River Merchang, Trengganu, ten, NMS. 515, E. R. Alfred, 3rd July 1958; Rantau Abang, Trengganu, twenty-six, NMS. 514, E. R. Alfred, 2nd July 1958; 12th mile Kuala Brang Road, Trengganu, fifteen, NMS. 511, M.W.F. Tweedie, August 1950.

The earlier name *johorensis* Duncker (1904) is now available for *hexazona* Weber and de Beaufort (1912) which has already been considered by Klausowitz (1956) as a subspecies of *P. pentazona* (Boulenger).

Owing to the very slight difference in markings between the Bornean and the Malayan subspecies, it is not surprising that Weber and de Beaufort (1916) have confused the two forms.

### ***Puntius rhombo-ocellatus* Koumans.**

Figure 1e.

*Puntius rhombo-ocellatus* KOUMANS, 1950, Temminckia, 5: 189—15 km. from Bandjermasin, Borneo.

*Barbus tetrazona* BLEEKER, 1857, Act. Soc. Sci. Indo-Neerl., 2: 14—River Kahajan, Borneo.  
*Systemus (Barbodes) tetrazona* BLEEKER, 1860, Act. Soc. Sci. Indo-Neerl., 7: 341—River Kahajan, Borneo.

*Puntius (Barbodes) tetrazona* BLEEKER, 1864-65, Atlas Ichth., 3: 102, pl. 144, fig. 7—River Kahajan, Borneo.

*Barbus tetrazona* GUNTHER, 1868, Cat. Fish, British Mus., 7: 124—River Kahajan, Borneo.

Non *Barbus tetrazona* VAILLANT, 1893a, Bull. Soc. Zool. France, 18: 57—Seboreang, Borneo.

*Puntius tetrazona* (p.p.) WEBER and DE BEAUFORT, 1916, Fish. Indo-Aust. Archipel., 3: 183—River Kahajan, Borneo.

Non *Puntius tetrazona* HERRE and MYERS, 1937, Bull. Raffles Mus., 13: 64—Singapore, Gunong Pulai and Kuala Pilah.

*Barbus pentazona* var *tetrazona* MEINKEN, 1939b, Wschr. Aquar. Terrarienk., 36 (6): 82, fig. 3.

*Barbus kahajani* HOEDEMAN, 1956, Het. Aquarium, 26 (12): 288, 1 fig.—River Kahajan, Borneo.

*Specimens examined.*—BORNEO:—About 15 km. from Bandjermasin in a canal along the highway from Oelin to Bandjermasin, ML. 16869 (holotype) and ML. 11905 (two paratypes), collected by the Zoological Gardens of the Hague; River Kahajan, BM. 1866.5.2.186, (holotype of *B. tetrazona* Bleeker, 1857), C. Helfrich.

Hoedeman has shown that *Capoeta tetrazona* Bleeker (1855), suppresses *Barbus tetrazona* Bleeker (1875) and accordingly he proposed the name *B. kahajani* for the latter. I now find that it can be referred to the present species.

The positions of the transverse markings opposite the dorsal and anal fins are not quite correctly shown in Bleeker's illustration (1864-65, plate 144, figure 7) of his type specimen. The first of these runs from the origin and anterior part of the dorsal base, not as far back along that fin base as he has shown. The marking behind this reaches the origin and anterior third of the anal base; in the *Atlas* this is shown as reaching the posterior half of the base of that fin. An additional faint, transverse stripe on the base of the caudal fin is not shown in his figure. In common with *P. pentazona pentazona* (Boulenger), there is a dark spot on the base of the last 2 dorsal rays.

I have examined the 3 specimens MNP. 91.352 and MNP. 91.353, reported by Vaillant (1893a) as *B. tetrazona* Bleeker and re-diagnose them as *P. everetti* Boulenger. I have also seen one specimen from Kuala Pilah, St. 31112, referred to this species by Herre and Myers (1937) and find it to be *P. dunckeri* (Ahl).

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