

Appendix 1

List of Native Indian Fresh water fishes traded as Ornamental fish

#	FAMILY	NATIVE SPECIES (FRESHWATER)	#	FAMILY	NATIVE SPECIES (FRESHWATER)	
1	Adrianichthyidae	<i>Oryziasdancena</i>	121	Cyprinidae	<i>Garra lissorhynchus</i>	
2	Ambassidae	<i>Chanda nama</i>	122		<i>Garra nasuta</i>	
3		<i>Chanda ranga</i>	123		<i>Gonoproktopterus curmuca</i>	
4		<i>Chanda thomassi</i>	124		<i>Horadandia atukorali</i>	
5		<i>Chanda wolffii</i>	125		<i>Hypselobarbus curmuca</i>	
6		<i>Parambassis lala</i>	126		<i>Hypselobarbus jerdoni</i>	
7		<i>Parambassis ranga</i>	127		<i>Hypselobarbuslithopidos</i>	
8		<i>Parambassis thomassi</i>	128		<i>Labeo angra</i>	
9		Amblycipitidae	<i>Amblycepsmangois</i>		129	<i>Labeo ariza</i>
10	Anabantidae	<i>Anabas cobojius</i>	130		<i>Labeo bata</i>	
11		<i>Anabas testudineus</i>	131		<i>Labeo boga</i>	
12			132		<i>Labeo boggut</i>	
13	Anguillidae	<i>Anguilla bengalensis</i>	133		<i>Labeo calbasu</i>	
14	Aplocheilidae	<i>Aplocheilus blockii</i>	134		<i>Labeo dero</i>	
15		<i>Aplocheilus lineatus</i>	135		<i>Labeo dyocheilus</i>	
16		<i>Aplocheilus panchax</i>	136		<i>Labeokontius</i>	
17		<i>Aplocheilus parvus</i>	137		<i>Labeonandina</i>	
18			138		<i>Labeonigriscens</i>	
19	Badidae	<i>Badis badis</i>	139		<i>Labeorohita</i>	
20		<i>Badis badisassamensis</i>	140		<i>Laubucadadiburjori</i>	
21		<i>Badis blosyrus</i>	141		<i>Laubucalaubuca</i>	
22		<i>Badis kanabos</i>	142		<i>Neolissochilushexagonolepis</i>	
23		<i>Dario dario</i>	143		<i>Neolissochiluswynaadensis</i>	
24	Bagridae	<i>Batasio batasio</i>	144		<i>Oreichthyscosuatis(Hamilton 1822)</i>	
25		<i>Batasio fasciolatus</i>	145		<i>Osteobramabelangeri</i>	
26		<i>Hemibagrus menoda</i>	146		<i>Osteobramacotiocotio</i>	
27		<i>Hemibagrus punctatus</i>	147		<i>Osteochilusnashii(Day, 1869)</i>	
28		<i>Horabagrus brachysoma</i>	148		<i>Puntius arenatus</i>	
29		<i>Horabagrus nigricollaris</i>	149		<i>Puntius arulius</i>	
30		<i>Mystus bleekeri</i>	150		<i>P. aruliuatambraparnie</i>	
31		<i>Mystus carico</i>	151		<i>Puntius assimilis</i>	
32		<i>Mystus gulio</i>			152	<i>Puntius cauveriensis</i>
33					153	<i>Puntius chalakudiensis</i>
34			<i>Mystus tengara (Hamilton, 1822)</i>		154	<i>Puntius conchonius</i>

35		<i>Mystus vittatus</i>	155		<i>Puntius denisonii</i>
36		<i>Rama chandramara</i>	156		<i>Puntius fasciatus</i> (Jerdon 1849)
37		<i>Rita gogra</i>	157		<i>Puntius filamentosus</i> (Valenciennes 1844)
38		<i>Rita rita</i>	158		<i>Puntius filamentosuslepidus</i>
39		<i>Sperata aor</i>	159		<i>Puntius gelius</i>
40		<i>Sperata seenghala</i>	160		<i>Puntius guganio</i> (Hamilton, 1822)
41	Balitoridae	<i>Aborichthys elongates</i>	161		<i>Puntius jerdoni</i>
42		<i>Aborichthys tikaderi</i>	162		<i>Puntius mahecola</i>
43			163		<i>Puntius manipurensis</i>
44		<i>Acanthocobitis botia</i>	164		<i>Puntius meingangbii</i>
45		<i>A. rubidipinnis</i>	165		<i>Puntius melanampyx</i>
46		<i>Mesonemacheilus guentheri</i>	166		<i>Puntius mudumalaiensis</i>
47		<i>Mesonoemacheilus triangularis</i>	167		<i>Puntius narayani</i>
48		<i>Nemacheilichthys rupelli</i>	168		<i>Puntius phutunio</i>
49		<i>Schistura barapaniensis</i>	169		<i>Puntius sahyadriensis</i>
50		<i>Schistura beavani</i>	170		<i>Puntius setnai</i>
51		<i>Schistura corica</i>	171		<i>Puntius shalynius</i> (Yazdani & Talukdar 1975)
52		<i>Schistura denisoniidayi</i>	172		<i>Puntius sophore</i> (Hamilton 1822)
53		<i>Schistura rupecola</i>	173		<i>Puntius tambraparniei</i>
54		<i>Schistura Savona</i>	174		<i>Puntius terio</i>
55		<i>Schistura scaturigina</i>	175		<i>Puntius ticto</i>
56		<i>Schistura tigrinum</i>	176		<i>Puntius vittatus</i> (Day 1865)
57		<i>Schisturavinciguerrae</i>	177		<i>Rajamas bola</i>
58	Belonidae	<i>Xenentodon cancila</i>	178		<i>Rasbora daniconius</i>
59	Chacidae	<i>Chaca chaca</i> (Hamilton, 1822)	179		<i>Rasbora rasbora</i> (Hamilton, 1822)
60	Channidae	<i>Channa amphibious</i>	180		<i>Rohteeogilbi</i>
61		<i>Channa aurantimaculata</i>	181		<i>Salmophasia phulo</i>
62		<i>Channa barca</i>	182		<i>Tor khudree</i>
63		<i>Channa bleheri</i>	183		<i>Tor mosal</i>
64		<i>Channa diplogramma</i>	184		<i>Tor musullah</i>
65		<i>Channa gachua</i>	185		<i>Tor progeneius</i>

66			186		<i>Tor putitora</i>
67		<i>Channa Harcourt-Butleri</i>	187		<i>Tor tor</i>
68		<i>Channa maruliusissabella</i>	188	Erethistidae	<i>Erethistes pusillus</i>
69		<i>Channa punctata</i>	189		<i>Erethistoides montana</i>
70		<i>Channa special rainbow</i>	190		<i>Hara hara</i>
71		<i>Channa stewarti</i>	191		<i>Hara horai(Misra, 1976)</i>
72		<i>Channa striata</i>	192		<i>Hara jerdoni</i>
73	Chaudhuriidae	<i>Pillaia indica</i>	193		<i>Laguvia Kapoori</i>
74	Cichlidae	<i>Etroplus canarensis</i>	194		<i>Laguvia ribeiroi</i>
75		<i>Etroplus maculatus</i>	195	<i>Laguviashawi</i>	
76		<i>Etroplussuratensis</i>	196	<i>Pseudolaguvia muricata</i>	
77		<i>Botia almorhae</i>	197	Gobiidae	<i>Brachygobius nusus</i>
78		<i>Botia dario</i>	198		<i>Glossogobius giuris (Hamilton 1822)</i>
79		<i>Botia lohachata</i>	199		<i>Gobiopterus chuno</i>
80		<i>Botia rostrata</i>	200		<i>Pseudapocryptes elongatus</i>
81		<i>Botia striata (Gunter, 1868)</i>	201		<i>Stigmatogobius sadanundio</i>
82	Cobitidae	<i>Lepidocephalichthys gunthea</i>	202	Heteropneustidae	<i>Heteropneustes fossilis</i>
83		<i>Lepidocephalichthys menoni</i>	203	Mastacembelidae	<i>Macrognathus aral</i>
84		<i>Lepidocephalus annandalei(Chaudhuri 1912)</i>	204		<i>Macrognathus pancalus</i>
85		<i>Lepidocephalus goalparensis</i>	205		<i>Mastacembalus armatus</i>
86		<i>Lepidocephalus thermalis</i>	206	Moringuidae	<i>Moringuaraitaborua</i>
87		<i>Pangiopangia</i>	207	Mugilidae	<i>Rhinomugi lcorsula</i>
88		<i>Somileptes gongota(Hamilton, 1822)</i>	208	Nandidae	<i>Nandus andrewi</i>
89	<i>Barilius bakeri</i>	209	<i>Nandus nandus</i>		
90	<i>Barilius barila</i>	210	Notopteridae	<i>Chitala chitala</i>	
91	<i>Barilius barna</i>	211		<i>Notopterus notopterus</i>	
92	<i>Barilius bendalensis</i>	212	Olyridae	<i>Olyralongicaudata (McClelland, 1842)</i>	
93	<i>Barilius canarensis</i>	213	Osphronemidae	<i>Ctenops nobilis(McClelland, 1845)</i>	
94	<i>Barilius dogarsinghi</i>	214		<i>Polyacanthus fasciatus</i>	
95	<i>Barilius evezardi</i>	215		<i>Polyacanthus lalius</i>	
96	<i>Barilius radiolatus</i>	216		<i>Polyacanthus sota</i>	
97	<i>Barilius shacra</i>	217		<i>Pseudosphromenus cupanus</i>	
98	<i>Barilius tileo</i>	218		<i>Pseudosphromenus dayi</i>	
99	<i>Barilius vagra</i>	219		Pangasiidae	<i>Pangasius pangasius (Hamilton, 1822)</i>

100	<i>Catla catla</i>	220	Schilbeidae	<i>Neotropius atherinoides</i>
101	<i>Chagunius chagunio</i>	221	Siluridae	<i>Ompok bimaculatus</i>
102	<i>Chela cachius (Hamilton 1822)</i>	222		<i>Ompok pabda</i>
103	<i>Cirrhinus fulungee</i>	223		<i>Wallago attu</i>
104	<i>Cirrhinus mrigala</i>	224	Sisoridae	<i>Bagarius bagarius</i>
105	<i>Crossocheilus latius latius</i>	225		<i>Bagarius yelleri</i>
106	<i>Danio dangila</i>	226		<i>Exostoma labiatum</i>
107	<i>Danio rerio</i>	227		<i>Gagata cenia</i>
108	<i>Devario acuticephala</i>	228		<i>Gagata gagata</i>
109	<i>Devario aequipinnatus</i>	229		<i>Gagata sexualis</i>
110	<i>Devario assamensis</i>	230		<i>Glyptothorax housei</i>
111	<i>Devario devario</i>	231		<i>Glyptothorax telchitta</i>
112	<i>Devariomalabaricus</i>	232		<i>Gogangra viridescens</i>
113	<i>Esomus barbatus</i>	233		<i>Sisor rhabdophorus</i>
114	<i>Esomusdanricus</i>	234		Syngnathidae
115	<i>Garra annandalei</i>	235	<i>Monopterusuchia</i>	
116	<i>Garra bicornuta</i>	236	<i>Microphisdeocata</i>	
117	<i>Garra gotyla</i>	237	Tetraodontidae	<i>Carinotetraodon imitator</i>
118	<i>Garra hughi</i>	238		<i>Carinotetraodon travancoricus</i>
119	<i>Garra kempfi</i>	239		<i>Tetraodon cutcutia</i>
120	<i>Garra lampta</i>	240		<i>Tetraodon fluviatilis</i>

Appendix 2

Observed key morphological characters of the Ornamental fish specimens enabling field identification of the species

Diagnostic Characters As per available keys	Pool barb (n=1)	Spotfin barb (n=1)	Green Swamp barb (n=2)	Swamp barb (n=2)	Barb (n=3)	Flying barb (n=3)	Minor carp (n=6)	Miniscale shark (n=1)
Dorsal fin rays	iii9	iii9				ii6	ii10	iii15
Pectoral fin rays	i15	i15				i14-15	i15	i16
Pelvic fin rays	i8	i8				i6-7	i8	i8
Anal fin rays	iii5	iii5				iii5	ii5	ii5
Caudal fin rays								
Lateral lines scales	24	24	24	24	20			83
Lateral line	complete	complete	Complete	Complete	In complete	Incomplete		
Lateral Transverse scales			6 / 1/4	6 / 1/4	8			12
Predorsal Scales	9	9	11	11	9	17		
Prepelvic scales			11	11	10			
Pre Anal scale			19	19	16			
Circumpeduncular Scales			14	14	8	14		
Other Characters	Body is deep, its dorsal profile more convex than ventral	Body is deep, its dorsal profile more convex than ventral	Barbles 1 pair present	Barbles 1 pair present	Scales from the dorsal fin origin to lateral line is 3	Pelvic fins are reddish while the others are orange	Eyes are large	
	Barbels absent	Barbels absent						
	Body is silvery, back of the body is greyish, a deep black round blotch is present at the base of the caudal fin and central part of the dorsal fin	Body is silvery, back of the body is greyish, a deep black round blotch is present at the base of the caudal fin and central part of the dorsal fin	Body marked with 2 dark bloches first behind operculum and another near the base of caudal fin	Body marked with 2 dark bloches first behind operculum and another near the base of caudal fin	Pores on lateral line is 3	Colour greyish green in colour, sprinkled with fine dots, belly silvery white,	A small tubercles above andibular symphysis	
Specimen Identified as	<i>Puntius sophore</i>	<i>Puntius sophore</i>	<i>Puntius chola</i>	<i>Puntius chola</i>	<i>Puntius manipurensis</i>	<i>Esomus danricus</i>	<i>Labeo bata</i>	<i>Labeo gonius</i>

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Diagnostic Characters As per available keys	Kalabans (n=5)	Turquoise Danio (n=1)	Giant Danio (n=3)	Indian Hill trout (n=5)	Indian Hill trout (n=2)	Gangetic latia (n=4)	Garra (n=5)
Dorsal fin rays	ii 11	iii11	iii9-12	7	7	iv8	7
Pectoral fin rays	i 16	i12	i11	14	10 – 12	i13	10-11
Pelvic fin rays	i 7	i6	i6	8	8	i8	7
Anal fin rays	ii 5	iii15	iii15	8	11	ii5	5
Caudal fin rays					10+9		10+9
Lateral lines scales		17	37	45	38+2	40	35+1
Lateral line		Complete	complete				
Lateral Transverse scales	7/1/8						3 ^{1/2} /1/4 ^{1/2}
Predorsal Scales			14		15-16		10 – 11
Prepelvic scales							
Pre Anal scale							
Circumpeduncular Scales					14		16
Other Characters	Snout without any lateral lobe, Pores on snout generally present	Body rhomboidal in shape	Barbels were found to be present	Barbels present (maxillary and rostral)	Barbles are absent	Gill rakers 37, presence of maxillary and rostral barbels, rostral barbels often short and rudimentary	Transverse row of tubercles on snout
	Dorsal fin higher than body depth Snout with distinct groove	Back of the body reyish, belly silvery, anterior part of the body reticulated at the centre by blue lines, which is again divided from each other by yellow bands	Body is blue in colour with a lateral band of blue band, both above and below is marked with golden golden bands	maxillary barbells often rudimentary. 12 dark bands descending towards the the lateral lines	11 dark bands descending towards the the lateral lines, dark spots on scales	Upper half of the body is greyish with irregular dark punctuations. Faint longitudinal stripes on flanks which broaden near the base of caudal fin	7 Stripes on caudal Peduncle
	Dorsal fin inserted above last quarter of pectoral fin	3 bluish lines divided by yellow ones extending backwards to caudal fin		dark spots on scales	Dorsal and caudal fins yellowish grey in colour Scales moderate	W- shaped Band on Caudal fin is absent Rostral Lobe on Snout is absent	
Specimen Identified as	<i>Labeodero</i>	<i>Devariodevario</i>	<i>D. aequipinnatus</i>	<i>Bariliusbendelisis</i>	<i>B. barna</i>	<i>Crossocheilus latius</i>	<i>Garra arupi</i>

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Diagnostic Characters As per available keys	Molacarplet (n=1)	Pale carplet (n=1)	Neon Hatchet (n=2)	Torrent stone carp (n=1)	Queen loach (n=4)	Bengal loach (n=2)	Ladder loach (n=1)	Gangetic loach (n=1)
Dorsal fin rays	iii7	iii7	ii7	ii 8	ii10	ii10	i9	i9
Pectoral fin rays	i14	i14	i10	viii 7-8	ii10	ii10	ii 10	ii 10
Pelvic fin rays	i8	i8	i6	ii 7	i7	i7	i 7	i 7
Anal fin rays	ii6	ii6	ii20	ii 6	i5	i5	i 5	i 5
Caudal fin rays				9 + 8	i9+8 i	i9+8 i	i9+8 i	i9+8 i
Lateral lines scales	80	80	53	38				
Lateral line	incomplete	incomplete	Complete				Complete	Complete
Lateral Transverse scales			10/1/4	3 ^{1/2} /1/2 ^{1/2}				
Predorsal Scales			28	12-13				
Prepelvic scales								
Pre Anal scale								
Circumpeduncular Scales								
Other Characters	Body is elongate Small scales, lateral line incomplete	Body is elongate Small scales, lateral line incomplete	The body is deep and compressed, mouth is slightly oblique	Body brown on back, abdomen pale and with 7-10 dark spots along lateral line	Possess 7 verti- cal bars on the body with narrower interspaces	Possess 7 verti- cal bars on the body with narrower interspaces	There are pale spots within the dark verti- cal bars	There are pale spots within the dark vertical bars
	Golden yellow with a broad silvery lateral band on body	Golden yellow with a broad silvery lateral band on body	The colour is mostly shining silver, translucent a shining greenish longitudinal from level of dorsal fin		lacks any distinct markings on the interspaces	lacks any distinct markings on the interspaces	All the bars are interconn- ected like a network	All the bars are interconnected like a network
Specimen Identified as	<i>Amblypharyngodon mola</i>	<i>A. mola</i>	<i>Chela cachius</i>	<i>Psilorhynchus homaloptera</i>	<i>Botia dario</i>	<i>Botia dario</i>	<i>Botia rostrata</i>	<i>Botia rostrata</i>

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Diagnostic Characters As per available keys	Moosefaced loach (n=1)	Zipper loach (n=1)	Striped loach (n=1)	River Catfish (n=2)	Gangetic ailia (n=1)	Copper catfish (n=2)	Gagata (n=2)	Gagata/Indian Gagata
Dorsal fin rays	ii8 ^{1/2}	12½	12½	17	Absent	I6	6	6
Pectoral fin rays	i10	13	13	I11	I16	18		8
Pelvic fin rays	i6	8	8	i5	i5	i6		i5
Anal fin rays	ii5 ^{1/2}	5½	5½	iii40	70	iv10	11	10
Caudal fin rays	i7+7i	8+8	8+8					
Lateral lines scales								
Lateral line		Complete	Complete					
Lateral Transverse scales								
Predorsal Scales								
Prepelvic scales								
Pre Anal scale								
Circumpeduncular Scales								
Other Characters	The colour is white on the sides, above clouded with dotted spots, and below silvery	Absence of a suborbital flap in male, the flap being replaced by a suborbital groove	Absence of a suborbital flap in male, the flap being replaced by a suborbital groove	presence of cleft of mouth only provides easy diagnosis of both the species	Dorsal fin is absent. Caudal fin edged with black	Skin on head is tuberculated. Occipital process not reaching basal bone of dorsal fin.	Dorsal part of thoracic region with 4 black stripes	Maxillary barbels shorter than head
	The lateral line runs straight above the middle.	lateral line reaches at least to anus	lateral line reaches at least to anus	Teeth on palate in a band narrower than premaxillary band or just equal to, nasal barbels reach a short distance behind posterior edge of eyes	Thebody colour is silvery to dull brown without any black blotch on caudal fin base or along side of body	Body is darkish brown above and sides, yellow below; head, sides and fins mottled with dark spots	Maxillary barbel is longer than head. Dorsal-fin spine produced into long filament. Pectoral-fin spine is without filamentous projection.	Pectoral fins without any filamentous prolongation
Specimen Identified as	<i>Canthophrys gongota</i>	<i>Acanthocobitis botia</i>	<i>A. botia</i>	<i>Eutropiichthys murius</i>	<i>Ailia coila</i>	<i>Glyptothorax telchitta</i>	<i>Gagata dolichonema</i>	<i>Gagata cenia</i>

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Diagnostic Characters As per available keys	Whiptail catfish (n=1)	Suckerthroat (n=3)	Giant Moth Catfish (n=1)	Copper catfish (n=2)	Two Stripe Gulper Catfish	Walking catfish (n=1)	Glass fish (n=4)	Mud perch (n=2)
Dorsal fin rays	I6	I6		4	5	74	VIII14,I	XIV13
Pectoral fin rays	I8	I13		I13	i12	10	i12	15
Pelvic fin rays	i7	i5		i8	i6	i5	I5	I5
Anal fin rays	ii4	iii9		60	ii52	58	III14	III9
Caudal fin rays								
Lateral lines scales							60	
Lateral line		complete						
Lateral Transverse scales							7	
Predorsal Scales								
Circumpeduncular Scales								
Other Characters	Blakish above and lighter below	The body is greyish brown in colour with irregular blotches. Thoracic adhesive apparatus with 12-14 transverse laminae. Slender caudal peduncle, larger eye.	The body is ventrally flattened. Barbels present in 4 pairs, maxillary barbels are broader at the base.	The colour of the body is silvery, dorsally dark greyish brown in colour, al large spot on the shoulder on lateral line, a small black spot on the caudal peduncle	Mandibular barble extend to posterior border of eye	The dorsal and lateral surfaces of head and body were grey to dark grey, fading to pale grey on the ventral surfaces.	The body is deep compressed with mouth oblique.	Body colour is greenish-brown in nature with three vertical patchy bloches
	Rayed dorsal fin serrated anteriorly (28-29), presence of 67-70 Lateral line ossicles	Skin was observed to be smooth with tuberculate in some areas as per description. Barbels was present in four pairs. Maxillary barbel with the ventral surface is densely covered with papillae barbels extending about two-thirds of distance between its base and base of first pectoral-fin	Dorsal spine is serrated distinctly. Pectoral spine had divergened 9-12 serrations on the anterior margin.	Body is elongate and compressed Caudal fin deeply forked Barbels were present in two pairs, maxillary barbells were long and extended beyond the anal fin origin	Maxillary barbels much shorter, extend only to the middle or tip of the pectoral fin	Dorsal and caudal fins grey to dark grey with very thin hyaline distal margin. barbells were found in four pairs. Maxillary barbel was found to be extending near to base of first dorsal-fin ray. Nasal barbel was observed extending near to tip of occipital process.	Appearance of the body is transparent with a trace of greenish-yellow and a silvery stripe on the side of the body, a dusky spot on the shoulder is also seen.	Scales ctenoid in nature. Lateral line interrupted Body is rhomboidal and fairly deep and compressed. Dorsal and anal spines are strong and the second spine is the longest, caudal fin is round in shape
Specimen Identified as	<i>Sisor rhabdophorus</i>	<i>Pseudecheneis sulcata</i>	<i>Erethistes pussilus</i>	<i>Ompok bimaculatus</i>	<i>Ompok pabda</i>	<i>Clarias batrachus</i>	<i>Pseudambassis ranga</i>	<i>Nandus nandus</i>

Diagnostic Characters As per available keys	Leaf fish (n=1)	Mud perch (n=2)	Tank goby (n=5)	Climbing perch (n=1)	Climbing gourami (n=1)	Blue Badis (n=2)	Chameleon Fish(n=2)	Bullseye snakehead (n=1)
Dorsal fin rays	XIV13	D1- IV, D2- I8	VI+I 9	XVIII 10	XVIII 10	XVI 10	XVI 10	51
Pectoral fin rays	15	16	I21	i14	i14	12	12	17
Pelvic fin rays	I5	I5		I5	I5	I5	I5	6
Anal fin rays	III9	III9	18	X10	X10	III8	III8	34
Caudal fin rays								14
Lateral lines scales		52		29	29			67
Lateral line								
Lateral Transverse scales								
Predorsal Scales								
Prepelvic scales								
Pre Anal scale								
Circumpeduncular Scales								
Other Characters	Body colour is greenish-brown in nature with three vertical patchy blotches	Caudal fin slightly emarginate	Body without longitudinal lines	Depth of the body is 3 times in standard length	Depth of the body is 3 times in standard length	The specimen had conspicuous dark blotch covering superficial part of cleithrum above the base of pectoral fin.	The specimen had conspicuous dark blotch covering superficial part of cleithrum above the base of pectoral fin.	A large black ocellus on upper caudal fin base, V - shaped sharp isthmus
	Scales ctenoid in nature. Lateral line interrupted Body is rhomboidal and fairly deep and compressed. Dorsal and anal spines are strong and the second spine is the longest, caudal fin is round in shape	Fins hyaline with golden tinge The colour of the body was dull brown on the dorsal side and silvery on the ventral	The colour of the body was yellowish brown and had five blotches. The dorsal, pectoral and caudal fins were mottled with dark spots.				It had a series of prominent dark blotches along dorsal fin base and middle of dorsal fin; and also had indistinct bars on side.	It had a series of prominent dark blotches along dorsal fin base and middle of dorsal fin; and also had indistinct bars on side.
Specimen Identified as	<i>Nandus nandus</i>	<i>Rhinomugil corsula</i>	<i>Glossogobiusguiris</i>	<i>Anabas testudineus</i>	<i>A. testudineus</i>	<i>Badis badis</i>	<i>Badis badis</i>	<i>Channa marulius</i>

Continued...

Diagnostic Characters As per available keys	Walking snakehead (n=2)	Ceylone snakehead (n=3)	Spotted snakehead / Green snakehead / Chekered snake fish (n=4)	Black spot grouper (n=1)	Snakehead murrel/Banded snakehead/Strip ed snakehead (n=2)	Barred Spiny eel (n=2)	Tire track eel (n=2)	Oscillated puffer fish (n=1)
Dorsal fin rays	36	36	32	36	46	XXV 40	XXXII 76	11
Pectoral fin rays	14	14	17	i 14	17	17	28	20
Pelvic fin rays	6	6	6		6			
Anal fin rays	23	23	23	24	29	III 42	78	10
Caudal fin rays				13		12	16	
Lateral lines scales	47	47	38	47	56			
Lateral line								
Lateral Transverse scales								
Predorsal Scales	12	12	12		20			
Prepelvic scales								
Pre Anal scale								
Circumpeduncular Scales								
Other Characters	Pectoral fin extending to anal fin, caudal fin rounded	Pectoral fin extending to anal fin, caudal fin rounded	The colour varies from green to black on its dorsal sides and flanks	Presence of ZigZag Caudal bars	The body is greyish green to dark green in colour on upper side and pale yellow from the middle.	Dorsal fin was observed to have 25 spines. The body is olive green on dorsal with many yellowish spots on flanks	Body is rich brown in colour with zig-zag lines, sometimes connected to form network	The body colour was olive green and yellowish at the flanks with dark reticulated markings.
	An Ocellus at the end of the dorsal fin	An Ocellus at the end of the dorsal fin	several dark blotches and black spots on the body can be observed		There were also presences of angular bands that run obliquely from snout to edge of gill cover.	Dark brown vertical stripes to the posterior of the body. Caudal fin with numerous black spots	A row of black spots is also visible along the base of dorsal fin	A dark ocellus was observed just in front of the dorsal and anal fin.
	pectoral fins were with a series of blue and faint orange vertical bands	pectoral fins were with a series of blue and faint orange vertical bands						
Specimen Identified as	<i>Channa orientalis</i>	<i>Channa orientalis</i>	<i>Channa punctatus</i>	<i>Channa melanostigma</i>	<i>Channa striata</i>	<i>Macrogathus pancalus</i>	<i>Mastacembelus armatus</i>	<i>Tetraodon cutcutia</i>

Appendix 3

K2P Distance table of the ornamental fish species under study

A. Intra-specific Distance

Species 1	Species 2	Intra-specific Distance	Species 1	Species 2	Intra-specificDistance
Semiplotussemiplotus	Semiplotussemiplotus	0.000	Gagatacena	Gagatacena	0.008
Labeodero	Labeodero	0.000	Devarioaequipinnatus	Devarioaequipinnatus	0.009
Labeocalbasu	Labeocalbasu	0.000	Bariliuscf.bendelisis	Bariliuscf.bendelisis	0.010
Puntius manipurensis	Puntius manipurensis	0.000	Puntius sophore	Puntius sophore	0.011
Bariliussp	Bariliussp	0.000	Acanthocobitisbotia	Acanthocobitisbotia	0.011
Botiarostrata	Botiarostrata	0.000	Mystusvittatus	Mystusvittatus	0.012
Devariodevario	Devariodevario	0.000	Anabas testudineus	Anabas testudineus	0.012
Sisorrabdophorus	Sisorrabdophorus	0.000	Parambassisranga	Parambassisranga	0.012
Labeobata	Labeobata	0.000	Channa marulius	Channa marulius	0.012
Esomusdanricus	Esomusdanricus	0.001	Labeogonius	Labeogonius	0.012
Aliacoila	Aliacoila	0.001	Badisbadis	Badisbadis	0.013
Garaarupi	Garaarupi	0.001	Glossogobiusguiris	Glossogobiusguiris	0.014
Botiadarario	Botiadarario	0.002	Chela cachius	Chela cachius	0.020
Chitalachitala	Chitalachitala	0.002	Channa orientalis	Channa orientalis	0.021
Eutropiichthysmurius	Eutropiichthysmurius	0.002	Channa striata	Channa striata	0.026
Gagatadolichonema	Gagatadolichonema	0.003	Mastacembelusarmatus	Mastacembelusarmatus	0.037
Barbonymusgonionotus	Barbonymusgonionotus	0.004	Gogangraviridescens	Gogangraviridescens	0.042
Crossocheiluslatius	Crossocheiluslatius	0.004	Canthophrysgongota	Canthophrysgongota	0.043
Notopterusnotopterus	Notopterusnotopterus	0.005	Channa punctatus	Channa punctatus	0.005
Puntius chola	Puntius chola	0.005	Clariasbatrachus	Clariasbatrachus	0.005
Pseudecheneissulcata	Pseudecheneissulcata	0.005	Macrognathuspancalus	Macrognathuspancalus	0.006
Rhinomugilcorsula	Rhinomugilcorsula	0.005	Amblypharyngodonmola	Amblypharyngodonmola	0.006
Mystusgulio	Mystusgulio	0.005	Nandusnandus	Nandusnandus	0.006
Ompokbimaculatus	Ompokbimaculatus	0.008			

