

## Karyotypes of Bagrid Catfishes, *Mystus wyckii* and *Bagroides macracanthus*, from Thailand

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**Abstract** Chromosomes of bagrid catfishes, *Mystus wyckii* and *Bagroides macracanthus*, from Thailand, are observed. The karyotype of *Mystus wyckii* comprises 16 metacentric, 14 submetacentric, and 24 acrocentric chromosomes, and that of *Bagroides macracanthus* comprises 16 metacentric, 26 submetacentric, 2 subtelocentric, and 6 acrocentric chromosomes. Karyotypes of 30 species of Asian bagrid catfishes are shown in a table.

Karyotypes of 28 species in the Bagridae have been reported from India (SRIVASTAVA & DAS, 1969; RISHI, 1973; MANNA & PRASAD, 1974; DAS & KAR, 1977; MANNA & KHUDA-BUKHSH, 1978; KHUDA-BUKHSH *et al.*, 1980; TRIPATHY & DAS, 1980; BARAT & KHUDA-BUKHSH, 1986; SHARMA & TRIPATHI, 1986; KHUDA-BUKHSH & BARAT, 1987), China (LING, 1982; SHEN *et al.*, 1983; HONG & ZHOU, 1984; YU *et al.*, 1987), Korea (KIM *et al.*, 1982; LEE *et al.*, 1983; UENO, 1985) and Japan (FUJIOKA, 1973; UENO, 1974, 1985). However, there have been no reports on bagrid karyotypes from Southeast Asia, in spite of the fact that Southeast Asia is a very important area for the study on systematics and zoogeography of the Bagridae.

As we observed chromosomes of two species in the Bagridae, *Mystus wyckii* and *Bagroides macracanthus*, from Thailand, their karyotypes will be reported in the following lines.

### Materials and Method

Three specimens of *Mystus wyckii* (BLEEKER), 14.0 to 23.5 cm SL, and three specimens of *Bagroides macracanthus* BLEEKER, 20.0 to 21.5 cm SL, were collected from Nakhon Phanom Province, northeast Thailand and used for chromosome observation. Mitotic metaphase chromosomes of the kidney tissue cells were observed. Method of chromosome preparation is similar to that of OJIMA and KURISHITA (1980).

Table 1. Frequency distributions of diploid chromosome counts in two species of the Bagridae.

Species	2n										Total			
	48	49	50	51	52	53	54	55	56	57		58	59	60
<i>Mystus wyckii</i>					1		16		4		5		3	29
<i>Bagroides macracanthus</i>	5	1	17	1										24

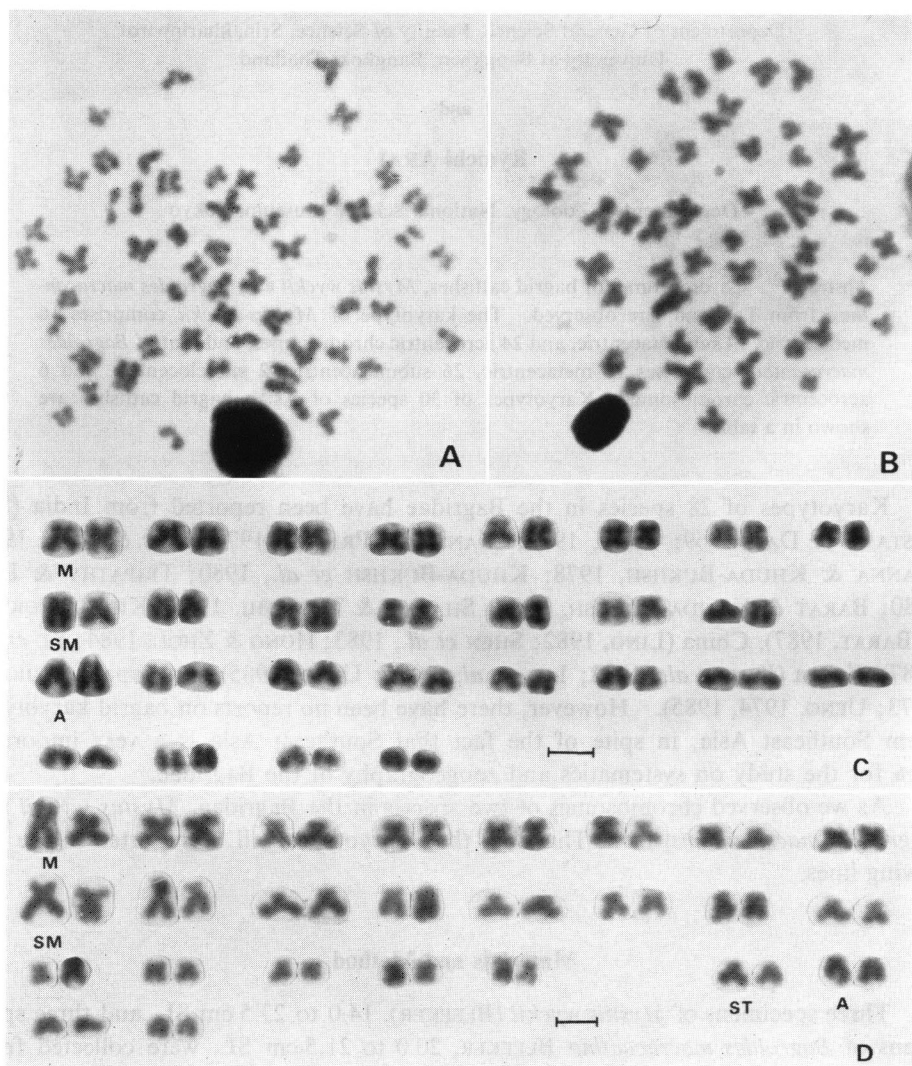


Fig. 1. Mitotic metaphase chromosomes and karyotypes of two bagrid catfishes. A and C, *Mystus wyckii*; B and D, *Bagroides macracanthus*. Each scale indicates 5  $\mu$ . M, meta-centric; SM, submetacentrics; st, subtelocentric; A, acrocentric.

Table 2. Karyotypes of the family Bagridae from Asia.

Species	2n	M	SM	ST	A	NF	Locality	Reference	
<i>Bagroides macracanthus</i>	50	16	26	2	6	92	Thailand	This paper	
<i>Coreobagrus brevicorpus</i>	44	22	14	0	8	80	Korea	KIM <i>et al.</i> , 1982	
<i>C. ichikawai</i>	56	18	14	-24-		88	Japan	UENO, 1985	
<i>Leiocassis crassilabris</i>	52	24	14	14	0	90	China	HONG & ZHOU, 1984	
<i>L. longirostris</i>	52	20	16	16	0	88	China	HONG & ZHOU, 1984	
<i>Mystus bleekeri</i>	56	20	14	10	12	90	India	SHARMA & TRIPATHI, 1986	
<i>M. cavasius</i>	58	18	16	10	14	92	India	SHARMA & TRIPATHI, 1986	
"	58	14	26	4	14	98	India	KHUDA-BUKHSH <i>et al.</i> , 1980	
"	58	18	22	0	18	98	India	TRIPATHY & DAS, 1980	
<i>M. corsula</i>	58	22	20	0	16	100	India	BARAT & KHUDA-BUKHSH, 1986	
<i>M. elongatus</i>	60	20	12	16	12	92	China	YU <i>et al.</i> , 1987	
<i>M. gulio</i>	58	30	12	2	14	100	India	MANNA & KHUDA-BUKHSH, 1978	
<i>M. macropterus</i>	60	20	12	16	12	92	China	HONG & ZHOU, 1984	
<i>M. seenghala</i>	54	28	12	8	6	94	India	SHARMA & TRIPATHI, 1986	
"	50	30				20	80	India	SRIVASTAVA & DAS, 1969
<i>M. tengara</i>	male	54	10	-38-	6		India	} RISHI, 1973	
	female	54	9	-38-	7		India		
<i>M. vittatus</i>		54	22	20	12	0	96	India	SHARMA & TRIPATHI, 1986
"		54	22	26	6	0	102	India	TRIPATHY & DAS, 1980
"	type A	54	20	24	10	0	98	India	} MANNA & PRASAD, 1974
"	type B	58	16	10	20	12	84	India	
"		50						India	SRIVASTAVA & DAS, 1969
<i>M. wyckii</i>		54	16	14	0	24	84	Thailand	This paper
<i>Pelteobagrus eupogon</i>		50	20	14	16	0	84	China	HONG & ZHOU, 1984
<i>Pe. fulvidraco</i>		52	24	14	10	4	90	China	HONG & ZHOU, 1984
"		52	18	26	- 8-		96	Korea	KIM <i>et al.</i> , 1982
"		52	24	24	0	4	100	Korea	LEE <i>et al.</i> , 1983
"		52	28	12	12	0	92	China	SHEN <i>et al.</i> , 1983
"		52	-22-		24	6	74	China	LING, 1982
<i>Pe. nitidus</i>		52	20	16	16	0	88	China	HONG & ZHOU, 1984
"		52	22	20	-10-		94	Korea	KIM <i>et al.</i> , 1982
<i>Pe. nudiceps</i>		56	18	12	-26-		86	Japan	UENO, 1985
"		56	-44-		-12-		100	Japan	FUJIOKA, 1973
<i>Pe. vachelii</i>		52	22	16	14	0	90	China	HONG & ZHOU, 1984
"		52	16	20	-16-		88	Korea	UENO, 1985
<i>Pseudobagrus adiposalis</i>		50	20	14	14	2	84	China	YU <i>et al.</i> , 1987
<i>Ps. aurantiacus</i>		48	20	12	16	0	80	Japan	} UENO, 1974
"		56	24	12	-20-		92	Japan	
<i>Ps. emarginatus</i>		52	20	20	-12-		92	Korea	UENO, 1985
<i>Ps. pratti</i>		52	20	14	8	10	86	China	YU <i>et al.</i> , 1987
<i>Ps. tenuis</i>		52	22	16	14	0	90	China	HONG & ZHOU, 1984
<i>Ps. truncatus</i>		52	26	14	12	0	92	China	YU <i>et al.</i> , 1987
<i>Ps. ussuriensis</i>		52	18	16	-18-		86	Korea	KIM <i>et al.</i> , 1982
"		52	24	18	10	0	94	China	HONG and ZHOU, 1984
<i>Ps. sp.</i>		48	20	14	-14-		82	Korea	KIM <i>et al.</i> , 1982
"		48	18	14	-16-		80	Korea	UENO, 1985
<i>Rita chrysea</i>		54	28	20	6	0	102	India	DAS & KAR, 1977
<i>R. rita</i>		54	14	34	6	0	102	India	KHUDA-BUKHSH & BARAT, 1987

Classification of chromosomes is adopted from LEVAN *et al.* (1964). Metacentrics and submetacentrics are described as two-arm chromosomes, and subtelocentrics and acrocentrics as one-arm chromosomes.

### Results

*Mystus wyckii* (Fig. 1 A and C). As shown in Table 1, the diploid chromosome number is 54. The karyotype comprises 16 metacentric, 14 submetacentric, and 24 acrocentric chromosomes. The arm number is 84.

*Bagroides macracanthus* (Fig. 1 B and D). The diploid chromosome number of this species is 50. The karyotype comprises 16 metacentric, 26 submetacentric, 2 subtelocentric, and 6 acrocentric chromosomes. The arm number is 92.

### Discussion

Table 2 shows karyotypes of 30 species in the family Bagridae from Asia. The diploid chromosome number of *Mystus wyckii* is 54, which is common in *Mystus* and also found in *Rita* from India. That of *Bagroides macracanthus* is smaller than those of *Leiocassis*, *Mystus*, and many species of both *Pelteobagrus* and *Pseudobagrus*. The diploid chromosome number of *Mystus* ranges from 50 to 60:  $2n=50-54$  from India and Thailand,  $2n=56-58$  from India,  $2n=60$  from China. The reason why  $2n$  of *Mystus* is so variable is not known, but one of reasons may be attributable to a confused status of classification of the genus. Besides, it seems puzzling that  $2n=54$  has not been observed in *Pelteobagrus* ( $2n=50-56$ ) and *Pseudobagrus* ( $2n=48-56$ ). To solve such problems, it is necessary to examine karyotypes of more species of the family Bagridae.

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