

2015년도

한국양서.파충류학회
학술발표대회 자료집



한국양서.파충류학회

The Korean Research Society of Herpetologists

정기총회 및 학술발표대의 일정표

○ 1일차 : 2015년 7월 10일(금)

15:00~18:00

○ 2일차 : 2015년 7월 11일(토)

09:30~10:00

10:00~10:20

10:20~10:40

Section 1 (: ,)

10:20~10:40 () (*Kaloula borealis*)

11:00~11:20 (*Elaphe schrenckii*)

11:20~11:40 3

11:40~12:00 .

12:00~13:00

Section 2 (: ,)

13:00~13:20 Broad introgression patterns between two Hylid species from the Korean Peninsula: the case of *Hyla suweonensis* and *H.japonica*

13:20~13:40 (*Bombina orientalis*) Aquaporin 1

13:40~14:00 (*Rana rugosa*) (*Hyla japonica*)

14:00~14:20 (*Lithobates catesbeianus*)

14:20~14:40

Section 3 (: ,)

14:40 ~ 15:00

15:20 ~ 15:40

15:40 ~ 16:00

16:00 ~ 16:20 (*Kaloula borealis*)

16:20 ~ 16:40

Section 4 (: ,)

16:40 ~ 17:00

17:00 ~ 17:20

17:20 ~ 17:40

17:40 ~ 18:00 (*Pelodiscus maackii*) (inter-Sertoli)

18:00 ~

○ 3일차 : 2013년 7월 12일(일)

09:00 ~ 12:00 () , ,

〈 목 차 〉

Session I

▶ 좌장 : 김종범(아태양서파충류연구소)

1.	<i>(Kaloua borealis)</i> 1
	1	1* . 1 . 2 . 2
	1	, 2
2.	<i>(Elaphe schrenckii)</i> 2
	1	1* , 1 , 1 , 1 , 1 , 1,2 , 3
	1	, 2 , 3
3.	3 3
	1	1,2* , 3,4 , 1,5 , 3
	1	, 2 , 3 , 4 ,
		5
4.	3 5
	1	1 , 1* , 2 , 3
	1	, 2 , 3

Session II

▶ 좌장 : 민미숙(서울대학교 수의과대학)

5.	Broad introgression patterns between two Hylid species from the Korean Peninsula: the case of <i>Hyla suweonensis</i> and <i>H.japonica</i>	6
----	---	---

Amaël Borzée^{1,2*}, JonathanJ.Fong² and YikweonJang¹

¹ Division of EcoScience, Ewha Womans University,

² School of Biological Sciences, Seoul National University

6. (*Bombina orientalis*) Aquaporin 1 7
 *

7. (*Rana rugosa*) (*Hyla japonica*) 8
 *

8. (*Lithobates catesbeianus*) 10
 1* 2 3 1 4
 1 , 2 , 3 , 4
 , 3 ,
 4

Session III

▶ 좌장 : 서재화(국립환경과학원)

9. 12
 *

10. 13
 *
 ()

11. 14
 1* 2 3
 1 , 2 , 3
 , 2 , 3

12. (*Kaloula borealis*) 15
 1* 2 3
 1 , 2 , 3
 , 2 , 3

Session IV

▶ 좌장 : 박대식(강원대학교)

13. 16
1* , 2 , 2,3 , 4 , 1
1 , 2 , 3 . , 4

14. 17

15. 19
1 , 1,2 , 1* , 3
1 , 2 3

16. (*Pelodiscus mackii*) (inter-Sertoli) 21
*,

()

(Kaloula borealis)

1* . 1 . 2 . 2

1 .
2

(Kaloula borealis)

. 2013 - 2014

136(;122, ;14)
 (snout-vent length; SVL) (body weight; BW)
 (phalange)
 (skeletochronology) (cross-section) LAG (line of arrested growth)
 (juvenile) 1 LAG
 LAG
 2.75±1.05(n=122, range=2-8) , 3.64±1.28(n=14, range=2-6)
 122 117(96 %) 2-4 , 3
 (positive) (K) 1.16,
 45.90 mm , 1.05, 43.08 mm

(Elaphe schrenckii)

1^{*}, 1, 1, 1, 1, 1,2, 3
1, 2, 3

**Report on the Diseases Occurred in the Indoor-housing Korean Ratsnakes
*(Elaphe schrenckii)***

Han-Na Cho^{1*}, Heon-Joo Lee¹, Ja-Kyeong Kim¹, Kyo-Soung Koo¹,
Woo-Jin Choi¹, Daein Kim^{1,2}, Daesik Park³

¹Department of Biological Sciences, Kangwon National University, ²Department of Natural Environment Research, National Institute of Ecology, ³Division of Science Education, Kangwon National University

2014, 2015

. 2014

. 2015

4 3

3

1, 1,2*, 2, 3,4, 3, 1,5, 3, 4, 5, 3

Endangered risk analysis of Korean three rare reptile species

Il-hun Kim^{1,2*}, Hoan-Jin Jang^{3,4}, Nam-Ho Roh^{1,5}, Daesik Park³

¹Department of Biological Sciences, Kangwon National University,

²National Marine Biodiversity Institute of Korea,

³Division of Science Education, Kangwon National University,

⁴National Institute of Ecology. ⁵Natural Environmental Restoration Institute

2 11 24 31 (3 4)
 1,988 30
 1.6% , (22 , 1.2%) (1201 , 63.2%), (522 , 27.5%),
 (124 , 6.53%) 30
 (IUCN)
 32 14 2010
 26 IUCN
 7 (26.9%)

(*Gekko japonicus*), (*Scincella huanrenensis*), (*Hierophis spinalis*) 3

IUCN

(,)

(433.9km²)

, IUCN

(Vulnerable)

(Endangered)

Huanren

5

(28,039.8km²)

15
(Endangered)

(89,222.4km²),

(Least Concern)

2005

2012

3

10

33

II

(*Elaphe schrenckii*),

(*Eremias argus*)

3

3

3

3

IUCN

1, 2, 1, 1*, 2, 3, 2, 3

Study of amphibian disease in Korean frog farms

Kyosoung Koo¹, Sera Kwon^{1*}, Jingu Lee², Daesik Park³

¹Department of Biology, Kangwon National University,

²Gyeonggi-do Agricultural Research & Extension Service,

³Division of Science Education, Kangwon National University

() (,
 4 (, ,
 2 (,
 10 , 10
 9ml 1ml
 petrifilm APC() petrifilm Y/M()
 petrifilm APC Y/M 35°C 48 , 25°C 120
 (P > 0.05).
 (P = 0.055).
 (P < 0.05).
 () PCR

Broad introgression patterns between two Hylid species from the Korean Peninsula: the case of *Hyla suweonensis* and *H.japonica*

Amaël Borzée^{1,2*}, JonathanJ.Fong² and YikweonJang¹

¹ Division of EcoScience, Ewha Womans University, Republic of Korea.

² School of Biological Sciences, Seoul National University, Republic of Korea

One of the hypotheses explaining population declines in connection to the loss of ecological diversity is speciation reversal, which is the genetic re-admixture of two divergent species. Two closely related treefrog species are present in Korea: the abundant *Hyla japonica*, and the endangered *H.suweonensis*. We tested the hypothesis of speciation reversal by examining traces of introgression between the two treefrog species. One mitochondrial and six microsatellite markers were used following a north-south transect, along the longest continuity of *H.suweonensis* populations, and a west-east transect, investigating the same patterns on a landscape limiting environment. The clear mitochondrial distinction between the two species contrasted with the results of the software STRUCTURE, based on microsatellites, revealing the broad introgression of *H.suweonensis*' genome into *H.japonica*, on a scale comparable to its distribution. This is correlated with a higher genetic diversity (H_e), number of alleles (A_e), and allelic richness (AR) for the sites where both species were present in comparison with sites with only a single species. A suite of t-tests for H_e , A_e , and AR between hetero-specific populations were not significant ($t=0.406, p>0.699$), while t-tests between the average per loci for the sites with either species against the sites with both species displayed significant differences ($t=3.096, p<0.027$). Finally, the presence of cytonuclear disequilibrium for both species, namely individuals with nuclear genome from one species but displaying mtDNA from the other, are evidence of non-directional hybridisation. Thus, our analyses reveal an accentuated gene exchange between the two species. Together with the information on habitat modification, our findings suggest that the adaptive genetic structure of *H.suweonensis*, differentiated from the sympatric *H.japonica*, may be lost through ecological homogenization.

(Bombina orientalis)

Aquaporin 1

*, ,

Change of the aquaporin 1 expression in Fire-bellied toad (*Bombina orientalis*)
kidney by cold-stress

Han Dae Kim*, Chan Jin Park, Myung Chan Gye
Department of Life Sciences, Hanyang University

,
(Bombina orientalis)

ADH

ADH

aquaporin(AQP)

AQPs

AQP1

38cm

immunohistochemistry

AQP1

0°C

. AQP1

, 0°C

/

4°C

, 0°C

4°C

AQP1

AQP1 0°C

mRNA

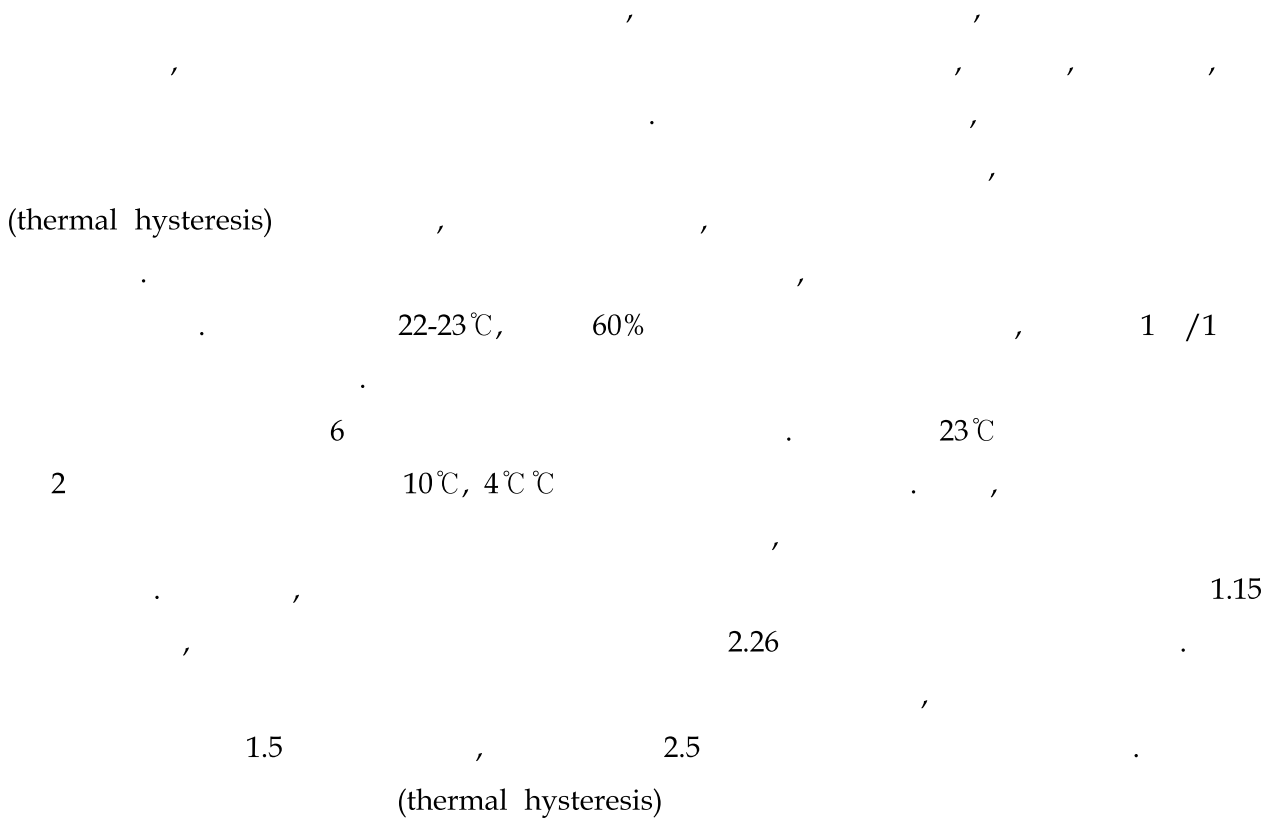
(Rana rugosa)

(Hyla japonica)

*, ,

Comparison of the hibernation adaptability of both Wrinkled frogs (*Rana rugosa*) and Tree frogs (*Hyla japonica*)

Sang Ha Song*, Chan Jin Park, Myung Chan Gye
Department of Life Sciences, Hanyang University



nanoliter osmometer (Otago Osmometers, Dunedin, New Zealand)

Gwak et al. (2010)

()

0.1 °C

0.1°C

0.3°C

(ice binding protein)

(Lithobates catesbeianus)

1, 2, 3, 1, 4, 2, 3, 4

Studies on diet items of American bullfrog (*Lithobates catesbeianus*) in Ga-hang wetland, Korea

Jeong-Hyun Lee^{1*}, Chang-woo Lee², Jeong-cheol Lim³, Byeong-Gug Yang¹, Daesik Park^{4*}

¹Division of Exhibition and Education, National Institute of Biological Resources, Seo-gu, Incheon 404-170, Korea

²Bureau of Conservation Ecology Department of Eco-safety, National Institute of Ecology, Seocheon-gun, Chungcheongnam-do 325-813, Korea

³National Wetlands Center, National Institute of Environmental Research, Changnyeong-gun, Gyeongsangnam-do 635-833, Korea

⁴Division of Science Education, Kangwon National University, Chuncheon-si, Kangwon-do, 200-701, Korea

(Lithobates catesbeianus) 2003 IUCN 100
(IUCN, 2003),

1957 1971

1998

, 2013

(Genus)

(Speices)

2014 4 9

139

118

4 10 20 46 62 63 (12

) 646

(Class Insecta) 65.5%, (Class Crustacea) 13.5%, (Class Gastropoda) 7.9%,
 (Class Amphibia) 7.3%, (Class Arachnida) 4.2%, (Class Osteichthyes) 4.2%,
 (Class Oligochaeta) (Class Mammalia) 0.3%, (Class Chilopoda) (Class Aves) 0.2%,
 54.3%, 13.4%, 12.5%, 8.1%, 5.6%, 2.6%, 1.1%, 1.0%, 0.9%, 0.5% .
 , 63.6%, 54.8% . , ,
 3 , , ,
 sp.(*Scolopendra* sp.), (*Vespa mandarinis*), (*V. velutina*), (*Polistes snelleni*)
 (*Bufo gargarizans*), (*Pelophylax nigromaculatus*)
 (*Parus major*), (*Apodemus agrarius*), (*Crocidura lasiura*) ,
 118 (cannibalism)
 1 0.8%
 (Speices) ,

*

The bad effect of Sabang-Dam on the amphibians

Eun-Young Kim, Jong-Bum Kim
Asia-Pacific Amphibians-Reptiles Institute

2015 2014

2011~2013 3 45% 3 446 7 725 4 . 1986

25

, , , ,

()

Wildlife Habitat Restoration Practice Using Habitat Suitability Index of Narrow-mouth Frog(*Kaloula borealis*)

Yun-Jin Shim*, Dong-Jin Lee, Duck-Ho Kim, Deok-Heum Jeong, Dong-Gil Cho

NEXUS Environmental Design Centre

(Habitat Suitability Index, HSI)

2014

13,034m²

2014

(

)

1^{1*}, 2², 3³
, 2², 3³

Kinematics of Prey Capture in Boreal Digging Frog (*Kaloula borealis*)

Sang-beom Ko^{1*}, Jae-Young Song², Min-Ho Chang³

¹Jeju National University Middle School, ²Korea National Park Service, ³National Institute of Ecology

(sit-and-wait)

140~280ms

125ms

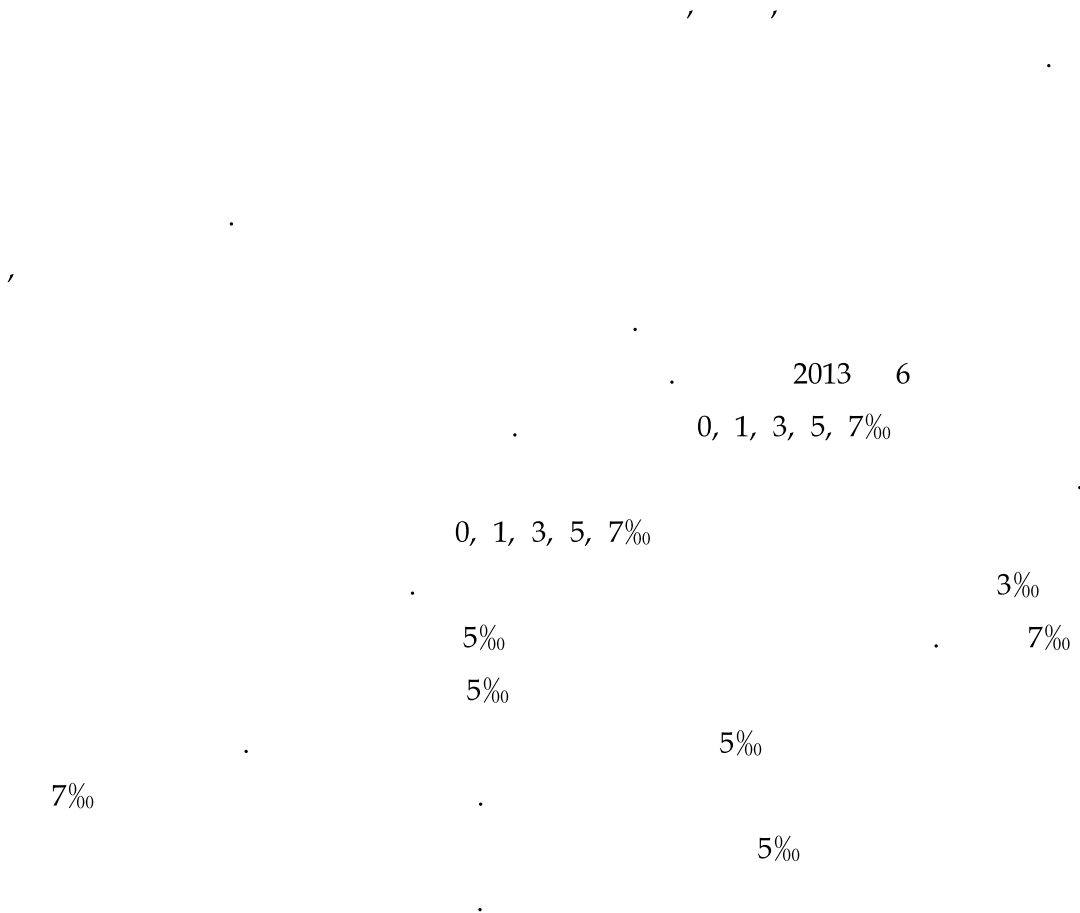
(Kaloula borealis)

1, 2, 3
1, 2, 3

Effect of Salinity on the Survival and Growth of Tadpole of Boreal Digging Frog(*Kaloula borealis*)

Sang-beom Ko^{1*}, young-Min Ko², Jung-hyun Lee³

¹Jeju National University Middle School, ²Jeju Girl High School, ³National Institute of Biological Resources



Research Status of Wildlife Disease in Ministry of Environment

Jae-Hwa Suh

Biosafety Research Team, Environmental Health Research Department,
National Institute of Environmental Research

2002 (SARS, Severe Acute Respiratory Syndrome)
10 (SFIS, Severe Fever with Thrombocytopenia
Syndrome), (EHF, Ebola Hemorrhagic Fever), (MERS, Middle
East Respiratory Syndrome)

(人獸共通感染症)

(BL3) " " '18 " 3
" " 5
'17 " " ,
" " .

			8 (3 , 5)	'14
	1 , '15	2	, '15	
3		'09	180	'15
1,026	, '16	1,500		.
	AI		(, , CWD,)
	(SFTS)	.		,

1, 1, 1, 3
 1, 2, 3

Searching Korean Sea Snakes and Their Classification Based on the Obtained Photographs

Heon-Joo Lee¹, Il-Hun Kim^{1,2}, Jaejin Park^{1*}, Daesik Park²

¹Department of Biology, Kangwon National University

²Marine Biodiversity Institute of Korea, Seocheon 325-902, Korea

³Division of Science Education, Kangwon National University

(Family Elaphidae) (True sea snake;
 Hydrophinae Subfamily) (Sea krait; Laticaudinae Subfamily),
 60 (Hydrophis platurus),
 (H. cyanocinctus), (H. melanocephalus) 3

Lee *et al.*(2003)

6
 1
 10
 6
 2
 8

2

(C1011221-01-01)

3

(Pelodiscus maackii)

(inter-Sertoli)

*

Inter-Sertoli Tight Junctions in the Testis of the Korean Soft-Shelled Turtle *(Pelodiscus maackii)*

Chan Jin Park*, Myung Chan Gye

Department of Life Sciences, Hanyang University

Expression of claudin 11 (CLDN11), a tight junction (TJ) protein, was examined in the Korean soft-shelled turtle (*Pelodiscus maackii*) testis. Spermatogenesis began during the breeding season and peaked at the end of the breeding season. Spermiation started in summer and peaked in autumn. The deduced amino acid sequence of *P. maackii* CLDN11 was similar to those of avian and mammalian species. During the nonbreeding season when spermatogenesis and testosterone production were active, testicular Cldn11 levels were high. In the seminiferous epithelium, strong, wavy CLDN11 strands parallel to the basement membrane delaminate the spermatogonia, and early spermatocytes are in the open compartment. Zonula occludens 1 (ZO-1) was found within the CLDN11 strands parallel to the basement membrane or at the outermost periphery of the seminiferous epithelium close to the basal lamina. During the breeding season, when circulating testosterone levels and spermatogenic activity was low, testicular CLDN11 level was lower than those during the nonbreeding season. CLDN11 was found at apicolateral contact sites between adjacent Sertoli cells devoid of the postmeiotic germ cells. At this time, lanthanum tracer diffused to the adluminal compartment of seminiferous epithelium. In cultured testis tissues, testosterone propionate significantly increased the level of Cldn11 mRNA. In *P. maackii* testis, CLDN11 participates in the development of the bloodtestis barrier (BTB), where the CLDN11 expression was coupled with spermatogenic activity and circulating androgen levels, indicating the conserved nature of TJs expressing CLDN11 at the BTB in amniotes.