

B109

Screening of Necrotizing Spiders in Korea Using Non-radioactive Sphingomyelinase Assay (I)  
Yong-Seok Choi<sup>P</sup>, Myung-Jin Moon<sup>C</sup>

Department of Biological Sciences, Dankook University, Cheonan 330-714

Spider bites cause a range of symptoms from simple swellings to disfiguring necrotic lesions, and occasionally death. There are now more than 40,000 identified spider species in the world, and considered about 100 species as actually dangerous to human. While spider bites are not a major medical problem in Korea, it would be of great value to know which species of spiders pose a threat to human health. A middle molecular weight protein, sphingomyelinase D, has been identified in the venom of the brown recluse spider and strong evidence suggests that they have a major role in spider bite necrosis (Tambourgi et al., 1998). To expedite the identification of necrotizing species, we propose to investigate using recently developed non-radioactive assay for sphingomyelinase for rapidly screening the necrotizing venoms. Here, we demonstrates the fetal toxicity of total 18 species (12 genera 9 families) among 631 identified spider species of Korea.

B110

Vocal Communication of Young Black-tailed Gulls (*Larus crassirostris*) as to the Parent Breeding Behavior  
Tae-Ho Kim<sup>P</sup>, Hoon Chung<sup>1</sup>, Shi-Ryong Park<sup>C</sup>

<sup>P</sup>Department of Biology Education, Korea National University, Cheongwon 363-791; <sup>1</sup>The Korea Institute of Ornithology, Kyunghee University, Seoul 130-701

We've investigated the vocal and behavioral reactions of chicks in black-tailed gull, *Larus crassirostris*, in accordance with the stimulative actions given by their parent in laboratory condition. The each of rates in begging call and pecking has dramatically increased when their parent's stuffing was presented in front of chick's visual sense. Moreover, chirrah call rate also had tendency to add up when parent's mew call was signaled to them. Especially, the relative trend between mew call intensity of parent and chirrah call intensity of chicks lies in direct proportion. The food quality was also core factor changing the extend of rate in begging call, pecking and call intensity. For example, the more chicks have starved, the greater therate, duration, dominant frequency in begging call respectively has been. On conclusion, it's strongly been believed that chirrah call of chicks plays a significant role in matching to the parent's mew call and that chicks demand the food as amount as they need through regulative process in rate of begging call and pecking and in begging call duration as well. Therefore, the parents-offspring communication system in black-tailed gull was significant in the viewpoint of social behavior.

B111

Response the Extent to a Change of Mew Call in Black-tailed Gull (*Larus crassirostris*)  
Ji-Yeon Shon<sup>P</sup>, Hoon Chung<sup>1</sup>, Shi-Ryong Park<sup>C</sup>

<sup>P</sup>C Department of Biology Education, Korea National University, Cheongwon 363-791; <sup>1</sup>Institute of Ornithology, Kyunghee University, Seoul 130-701

The young black-tailed gulls, *Larus crassirostris*, recognize various adult voice signal based on the simple patterns. We investigated behavior change in black-tailed gulls through precise regulation of adult mew call. The first, response of young black-tailed gulls decreased to significantly greater high frequency than control and low frequency. The second, response of young black-tailed gulls decreased to significantly greater short call duration than control and long call duration. The third, young black-tailed gulls hide oneself when mew call of shorter call interval play a chick. The fourth, response of young black-tailed gulls respond to an increase in behavior with an increase in mew call intensity. We played mew call of high frequency, short call duration, and short call interval on adult black-tailed gulls through these results. Analysis result by observer program 4.0 was significantly behavior change of flight time and course between control group and playback group. We conclude that the young black-tailed gull distinguish base on the simple structure (frequency, duration, interval, and intensity) between aggressive call and contact call

B112

임실납자루 *Acheilognathus somjinensis*와 칼납자루 *A. koreensis*의 조개내 산란선택  
김익수<sup>C</sup>, 양현<sup>P</sup>

전북대학교 자연과학대학 생물과학부, 전주 561-756

임실납자루 *Acheilognathus somjinensis*는 납자루아과 Acheilognathinae에 해당하며 섬진강 수계인 전북 임실군 관촌면 일대에만 국한되어 서식하는 한국 고유종으로 동소적으로 서식하는 유연종인 칼납자루 *A. koreensis*와는 산란기 암컷의 산란관이 길어서 꼬리지느러미 기점을 지나고 성숙란의 형태가 둥근 마름모형이어서 잘 구분되어진다. 두 종의 산란시기는 3월말부터 시작하여 7월 중순까지 동일하게 지속된다. 두 종이 동소적으로 서식하는 수역에서 채집된 암수이매패는 7종으로 이중 임실납자루는 곶채두드럭조개 *Lamprotula leai*와 *Lamprotula* sp.에만 산란하였으며 칼납자루는 주로 말조개 *Unio douglasiae*에 산란하며 간혹 작은말조개 *U. d. sinuolatus*, 작은대칭이 *Anodonta arcaiformis flavotincta*에 산란하기도 하였다. 또한 임실납자루는 산란관이 길고 수정란이 접착성을 띠고 있지 않아 조개 새엽 중간부에 각각 분리되어 산란하며, 칼납자루는 산란관이 짧고 수정란이 접착성을 띠고 있어 조개 새엽 기부에 난괴를 형성하여 산란하였다.