

*Sinistras chois*, a new genus and species of  
terrestrial cave snails from Jeju Island, Korea  
(Gastropoda: Subulinidae)

Gab Man Park

Department of Parasitology, Kwandong University College of Medicine

## Introduction

The purpose of this paper is to describe a new species of terrestrial cave snails of the family Subulinidae from Korea. The snails in this family have cone-shaped or cylindrical shells. The new species are described on the basis of the shell structure and the anatomical characteristics. Species are numerous and very localized in their distributions. Subulinidae are a characteristic and important component of the terrestrial snail fauna existing in tropical to subtropical areas. Chromosomal information reported in the literature about the family Subulinidae, refer to two species. Laws (1965) and Burch (1967) reported chromosomal numbers of  $n=31$  for *Subulina octoma* and  $n=25$  for *Lamellaxis mauritanus*.

## Materials and Methods

All of the 25 specimens were collected by Mr. Y. G. Choi of the Korean Institute of Biospeleology. These specimens were preserved in 70% alcohol after being fixed in 10% formalin. Relaxed, alcohol-preserved specimens were used for dissection. Mitotic chromosome spreads of gonadal tissues were obtained by a modification of the standard air-dry technique (Park et al., 2000).

## Results

**Description.** Shells are illustrated in Figs. 1 and 2. Shell is 7.2-13.1 mm high; height/width ratio is, 480-546%. Whorls, 8-10, rounded. Spire outline convex. Aperture oblong ovate in shape, thin all around, occupying 19-21% of the shell length, no umbilicus, the body whorl occupies 34-36% of the shell length, with a roundly convex periphery. Columella is thin, the outer lip is rather thin, of which the upper end is slightly concave and forms a very shallow sinus. Outer aperture

lip not reflected. Inner surfaces of the whorls are smooth. No parietal callus and parietal wall. Protoconch rounded, protruding, with about 1.5 whorls. No operculum.

Radular formula: one central tooth + six lateral teeth + 12 marginal teeth (from paratype). Central tooth trapezoidal, somewhat short; basal process well excavated; basal cusps elongate (about as long as basal process). Central cusps of central and lateral teeth dagger-like, slightly enlarged. Marginal teeth have three cusps. Genital system is characterized by a longer receptaculum seminis than diverticulum. Epiphallus is almost uniformly thickened, about 6 mm long, with a retractor muscle connected at the middle. Vagina is almost the same as or somewhat shorter than the penis sheath, and is somewhat narrowed toward the atrium. The stalk of the bursa copulatrix considerably thickened near the vagina, strikingly thickened in the middle, about 6 mm. Receptaculum seminis is oblong, connected at the end of the stalk, and about 0.7 mm long. Penis is without large glands. Ovary is a small, unlobed mass filling about 0.5 whorls posterior to the stomach. Pallial oviduct is large. Oviduct has a single, thickened coil on the albumen gland. Twenty-one mitotic cells were studied. The chromosome number and karyotype of this new species were counted  $2n=56$  and  $8M+15SM+5ST$ , respectively.

**Type locality.** Holotype and paratype from Gungi Cave stream 3 km eastwest of Hyubje-ri, Hallim-eup, Bukjeju-gun, Jeju-do, Korea ( $33^{\circ}22'58''$  N,  $126^{\circ}14'47''$  E).

## Summary

A terrestrial cave snail (Gastropoda: Subulinidae), *Sinistras chois* n. gen., n. sp., from the Gungi-cave in Jeju Island, South Korea represents a monotypic genus, and is proposed as a new genus in the family Subulinidae. Diagnostic features of the genus include a sinistral shell, that has a minute-sized, elongate conic-shaped, apical microsculpture with low tubercles. The chromosome number and karyotype are  $2n=56$  and  $8M+15SM+5ST$ , respectively.

## References

- Burch, J.B. 1967. Cytological relationships of Pacific gastropods. *Venus (Japanese Journal Malacology)*. **25**: 118-135.
- Laws, H.M. 1965. Chromosomes of snails introduced into South Australia and the Northern Territory. *Rec. S. Australian Mus.* **15**: 79-87.
- Park, G.M., Yong, T.S., Im, K.I. & Chung, E.Y. 2000. Karyotypes of three species of *Corbicula* (Bivalvia: Veneroida) in Korea. *Journal of Shellfish Research*. **19**: 979-982.