1-3. Comparative Studies of Ant Faunas among Is. Seonyudo and Other Islands of West Sea in Korea

Ha So-Jin, Seong-Joon Park and Byung-Jin Kim

Division of Biological Science, Wonkwang University

According to the related references , up to now the comparative studies on the ant faunas of Korea have not been professionally surveyed yet. It seems that littles has been studies the difference and similarity of ant faunas.

This paper aims at revealing the biogeographic characteristic of ant fauna of islands among the islands of west sea in Korea, using quantitative analyses.

The data which are used in this paper is those from Is. Seonyudo and 7 islands which have been well investigated. The faunal similarity is examined using the Nomura-Simpson's Coefficient (NSC) which is defined by the following equation:

$$NSC = c / b, \quad a \geq b \ (\ 0 \leq NSC \leq 1 \ ).$$

Where a and b are the total number of species found in the 1st and 2nd areas respectively, and c is the number of species found in both areas. Futhermore, the obtained *NSC* value matrix is examined by a cluster analysis using UPGMA method.

The number and the distribution records of each species in the areas are 60 species of ants belonging to 28 genera of 4 subfamilies were recorded from 8 studied islands. Among the islands, Is. Deokjeokdo which has the highest species number (3 subfamilies 18 genera 28 species), while Is. Wonsando has the lowest species (3 subfamilies 19 genera 22 species). Is. Seonyudo has 35 species of 21 genera under 4 subfamilies.

The *NSC*-values between 8 localities of studies areas ranges from 0.500 (Is. Deokjeokdo - Is. Hongdo) to 0.909 (Is. Wonsando - Is. Hongdo). In the islands of west sea comprising Is. Seonyudo, the *NSC*-values range from 0.571 (Is.

Deokjeokdo) to 0.778 (Is. Bigeumdo). A cluster analysis using a similarity index (NSC) showed that islands of this area can be divided into 3 groups at the level of 41%. It seemed that Is. Wonsando and Is. Bigeumdo were closer (Similarity = 83%) than those between others, Is. Deokjeokdo and Is. Bigeumdo were remote (Similarity = 41%) from each conspecific population. That is, the species composition of Is. Bigeumdo(Similarity = 70%) was similar to that of the Is. Seonyudo, while that of Is. Deokjeokdo(Similarity = 41%) was differennt to that.

This research is one of comparison of the ant fauna of Korea peninsular with that of the surrounding islands.

Key words: Ant, Fauanl comparison, Nomura-Simpson's Coefficient, Korea.