

Ants from Naejangsan National Park (Hymenoptera : Formicidae)

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내장산 국립공원 일대의 개미상

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ABSTRACT

Ants had been collected at Naejangsan Nat. Park from June, 1995 to October, 1996. As a result of all the collections were examined, 45 species of 22 genera under 4 subfamilies were identified.

Key words : Ants, Formicidae, Systematics, Mt.Naejang National Park, South Korea

INTRODUCTION

The area of Naejangsan National Park, altitude 763.2m. is located in both Chōnbug and Chōnnam, from 35 degrees, 27 minutes of north latitude to 126 degrees, 52 minutes of east latitude. Up to now the systematic studies on ants from this area have not been professionally surveyed yet. In order to investigate ant systematics of this area, more than 400 ants nests were surveyed nearly all over the area of Naejangsan National Park from June to August, 1995. Taxonomic keys were made with the system of Collingwood(1979). The 44 species confirmed were listed in this paper including some pieces of information of this area.

MATERIALS AND METHODS

The materials for this paper were from Naejangsan National Park. As soon as collected, ants were fixed in Bouin's alcoholic solution (80% ethanol 150ml, formaldehyde 15ml and picric acid 1g), and transferred 2-3 days later to 85% ethanol. Dried specimens were examined microscopically, using the Wild M8 stereozoom-microscope, and identified on comparison with voucher specimens offered from Collingwood, and Elmes, in Great Britain, Onoyama in Japan, Baroni-Urbani in Switzerland, Rigato in Italy and Wang in China, as well as type specimens from the British Natural History Museum.

SYSTEMATIC ACCOUNT

Subfamily key of Formicidae

- 1. Pedicel with one nodal segment..... 2
 - Pedicel with two nodal segments. Myrmicinae (두마디개미아과)
- 2. Gaster clearly constricted between first and second segments : final abdominal segment with strong sting. Ponerinae (침개미아과)
 - Gaster without constriction between first and second segment : sting absent 3
- 3. Cloacal orifice is tranverse slit and four abdominal segments are seen from above Dolichoderine (시베리아개미아과)
 - Cloacal orifice is circular with hairs and five abdominal segments are seen from above Formicinae (불개미아과)

Subfamily Ponerinae Lepeletier 침개미아과

Key to genera of Ponerinae

- 1. Mesopleurae with slopely running groove. *Ectomomyrmex*
 - Mesopleura flat without groove. 2
- 2. Exteranal surface of midleg tibiae with abundant hairs like spines. *Cryptopone*
 - Exteranal surface of midleg without hairs like spines. 3
- 3. Protrusion of ventral surface of petiole with convexed area. *Ponera*
 - Protrusion of ventral surface of petiole without convexed area. *Hypoponera*

Genus 1. *Ectomomyrmex* Mayr, 1867 일본침개미속
Ectomomyrmex Mayr, 1867, .
 Type species : *Ectomomyrmex javanus* Mayr, 1867

- 1. *Ectomomyrmex javanus* Mayr, 1867 일본침개미
Ectomomyrmex javanus Mayr, 1867; Kim, 1970, p.472; Terayama et al. 1992; Kim et al. 1993; Kim et al. 1994; Kim et al. 1995.
Pachycondyla (Ectomomyrmex) japonica

Emery, 1902.
Pachycondyla japonicus : Wheeler, 1928.
 Collected sites : Paekyang temple, Sangwnagbong, Naejang temple, Gachilbong, Sinseonbong.

Genus 2. *Cryptopone* Emery, 1892 장남침개미속
Cryptopone Emery, 1892.
 Type species : *Amblyopone testace* Motschulsky, 1863.

- 2. *Cryptopone sauteri* (Wheeler,1906) 장남침개미
Cryptopone sauteri Wheeler, 1906.
Euponera sauteri: Emery, 1909; 1911
Cryptopone sauteri: Brown, 1963; Kim et al. 1993, p. 119
 Collected site : Paekyang temple, Sangwangbong, Naejang temple, Gachilbong, Sinseonbong.

Genus 3. *Ponera* Latreille : 1804 침개미속
Ponera Latreille, 1804.
 Type species : *Formica coarctata* Latreille, 1802.

- 3. *Ponera japonica* Wheeler, 1906 침개미
Ponera japonica Wheeler, 1902 : Collingwood, 1976; Terayama et al. 1992; Kim et al. 1993; Kim et al. 1994
Ponera japonica var. *crocea* Santschi, 1941.
 Collected sites : Naejang temple, Gachilbong, Sinseonbong.

- 4. *Ponera scabra* Wheeler, 1928 거치른침개미
Ponera scabra Wheeler, 1928; Kim et al., 1993.
 Collected sites : Paekyang temple, Sangwangbong.

Genus 4. *Hypoponera* Santschi, 1938 황침개미속
Hypoponera Santschi, 1938. Soc. Ent. France, Bul. 43 : 79.
 Type species : *Ponera abeillei* André 1881.

- 5. *Hypoponera nippona* (Santschi, 1937) 긴수염황침개미
Ponera nippona Santschi, 1937.
Hypoponera nippona: Ogata, 1987.
 Collected sites : Paekyang temple, Sangwangbong
- 6. *Hypoponera sauteri* (Forel, 1912) 황침개미

Hypoponera gleadowi var. *sauteri* Forel, 1912.
Hypoponera nippona: Ogata, 1987.
Hyponera sauteri; Onoyama, 1989; Terayama et al. 1992; Kim et al., 1993; Kim et al. 1994
 Collected sites : Paekyang temple, Sangwangbong

Subfamily Myrmicinae Lepeletier, 1836 두마디개미아과

Key to Genera of Myrmicinae

1. Postpetiole attached to dorsum of first abdominal segment. *Crematogaster*
 - Postpetiole attached to anterior face of first segment. 2
2. Midleg and hindleg with comb like spines. *Myrmica*
 - Midleg and hindleg with needle like spines. 3
3. Clypeus protruded like a tomb from anterior area of antennal base. *Pristomyrmex*
 - Clypeus not protruded like a tomb. 4
4. Antennae six segmented *Strumigenys*
 - Antennae more than ten segmented 5
5. Clypeus with two vertical protruded lines. Head and thorax with concaved areas but without rugosities. 6
 - Clypeus with one vertical protruded line or rugosities. 8
6. Antennae ten segmented and club two segmented. *Solenopsis*
 - Antennae twelve segmented and club three segmented. 7
7. Propodeum with spines or projections. *Vollenhovia*
 - Propodeum flat without spines or projections. *Monomorium*
8. Area connected between midthorax and metathorax not grooved to dorsum of them. 9
 - Area connected between midthorax and metathorax grooved to dorsum of them. 10
9. Both sides of anterior face of pronotum angled in back view. *Tetramorium*

- Anterior face of pronotum round in back view. Body hairs thick to tip and look club. *Leptothorax*
- 10. Antennal club three segmented and as long as sum of other segments or longer than it. *Pheidole*
 - Antennal club five segmented and shorter than sum of other segments. 11
- 11. Head ovum form and propodeum with a pair of spines. *Aphaenogaster*
 - Head more or less angled and propodeum without spines. *Messor*

Genus 5. *Myrmica* Latreille, 1804 빨개미속
Myrmica Latreille, 1804.

Type species : *Formica rubra* Latreille, 1758.

7. *Myrmica kurokii* Forel, 1907 쿠로키빨개미
Myrmica kurokii Forel, 1907.
Myrmica kurokii Forel; Imanishi, 1930; Teranishi, 1932; Onoyama, 1980.
 Collected sites : Naejang temple, Gachilbong, Sinseonbong, Seoraebong, Bulchulbong.

Genus 6. *Aphaenogaster* Mayr, 1853 장다리개미속

Aphaenogaster Mayr, 1853.

Type species. *Aphaenogaster sarous* Mayr, 1903.

8. *Aphaenogaster* (*Aphaenogaster*) *smithiesii* Forel, 1911 일본장다리개미
Aphaenogaster schmitzi japonica Forel, 1902.
Aphaenogaster(Attomyrma) syrica japonica; Emery, 1921.
Aphaenogaster(Attomyrma) smythiesii japonica; Wheeler, 1928.
Aphaenogaster japonica ; Choi et. al. 1985; Kim et al. 1993, p.122.
 Collected sites : Paekyang temple, Sangwangbong, Naejang temple, Gachilbong, Sinseonbong.

Genus 7. *Pheidole* Westwood, 1839 흑개미속
Pheidole Westwood, 1839.

Type species : *Atta providens* Sykes, 1835.

9. *Pheidole fervida* Fr. Smith, 1874 극동흑개미
Pheidole fervida Fr. Smith, 1874.
Pheidole fervida var. *kwazana* Teranishi, 1940.
Pheidole fervida : Collingwood, 1976; Kim, 1963; Kim, 1970; Kim and Kim, 1983; Kim, 1986; Terayama et al. 1992; Kim et al. 1993; Kim et al. 1994; Park, 1995; Kim et al. 1995.
 Collected sites : Paekyang temple, Sangwangbong, Naejang temple, Gachibong, Sinseonbong.
10. *Pheidole nodua* F. Smith, 1874 흑개미
Pheidole nodus F. Smith, 1874.
Pheidole nodus: Kim & Kim, 1993.
 Collected sites : Reference Record : Kim et. al. 1993.
- Genus 8. *Tetramorium* Mayr, 1855 주름개미속
Tetramorium Mayr, 1855.
 Type species. *Formica caespitum* Linnaeus, 1758.
11. *Tetramorium caespitum* (Linnaeus, 1758) 주름개미
Formica caespitum Linnaeus, 1758.
Tetramorium caespitum : Mayr, 1855.
Tetramorium caespitum semileve var. *jacoti* Wheeler, 1923 (syn. by Yasumatsu, 1962).
Tetramorium caespitum; Teranish, 1940; Kim, 1963; Kim, 1970; Collingwood, 1976, 1981; Kim and Kim, 1982; Kim and Kim, 1983; Kim, 1986; Terayama et al. 1992; Kim et al. 1993, 1994, 1995.
 Collected sites : Paekyang temple, Sangwangbong, Naejang temple, Ggachibong, Sinseonbong, Seoraebong, Bulchoolbong, Reference Record (Kim, 1982,1987; Kim, et.al. 1993;Lim, 1993; Park, 1993; Kim & Kim, 1994; Kim, 1994)
- Genus 9. *Vollenhovia* Mayr, 1865 에메리카개미속
Vollenhovia Mayr, 1865.
 Type species : *Vollenhovia punctatastriata* Mayr, 1865.
12. *Vollenhovia emery* Wheeler, 1928 에메리카개미
Vollenhovia emery Wheeler, 1906.
Vollenhovia emery : Kim & Kim, 1982, 1983; Choi et. al. 1985; Kim et al. 1993.
 Collected sites : Paekyang temple, Sangwangbong, Naejang temple, Ggachibong, Sinseonbong, Seoraebong, Bulchoolbong.
- Genus 10. *Leptothorax* Mayr, 1855 호리가슴개미속
Leptothorax Mayr, 1855.
 Type species : *Formica acervorum* Fåbricius, 1793.
13. *Leptothorax koreanus* Teranishi, 1940 진호리가슴개미
Leptothorax(*Nesomyrmex*) *koreanus* Teranishi, 1940.
Leptothorax koreanus : Kim & Kim, 1982, 1983.
 Collected sites : Paekyang temple, Sangwangbong, Naejang temple, Ggachibong, Sinseonbong, Seoraebong, Bulchoolbong.
- Genus 11. *Monomorium* Mayr, 1855 집개미속
Monomorium Mayr, 1855.
 Type species. *Monomorium minutum* Mayr, 1855.
14. *Monomorium chinense* Santschi, 1925 점정꼬마개미
Monomorium minutum var. *chinense* Santschi, 1925.
Monomorium minutum: Teranishi, 1940.
Monomorium chinense : Bolton, 1989 ; Terayama et al. 1992; Kim et al. 1993, 1994, 1995.
 Collected sites : Paekyang temple, Sangwangbong.
- Genus 12. *Solenopsis* Westwood, 1841 열마디개미속
Solenopsis Westwood, 1841.

- Type species. *Solenopsis mandibularis* Westwood, 1840.
15. *Solenopsis japonica* (Wheeler, 1928) 일본열마디개미
Formica fugax var. *japonica* Wheeler, 1928, Bull. Lab. Zool. Portici, 21 : 113.
Solenopsis japonica : Santschi, 1934; Terayama et al, 1992; Kim et al, 1993; Kim et al, 1994; Kim et al, 1995.
 Collected sites : Naejang temple, Ggachibong, Sinseonbong.
- Genus 13. *Pristomyrmex* Mayr, 1866 그물등개미속
Pristomyrmex Mayr, 1866.
 Type species. *Pristomyrmex pungens* Mayr, 1866.
16. *Pristomyrmex pungens* Mayr, 1866 그물등개미
Pristomyrmex pungens Mayr, 1866.
Pristomyrmex pungens: Kim, 1970; Collingwood, 1976; Kim & Kim, 1982; Kim & Kim, 1983; Terayama et al, 1992; Kim et al, 1993; Kim et al, 1994; Kim et al, 1995.
 Collected sites : Paekyang temple, Sangwangbong, Naejang temple, Ggachibong, Sinseonbong, Seoraebong, Bulchoolbong.
- Genus 14. *Crematogaster* Lund, 1831 밀드리개미속
Crematogaster Lund, 1831.
 Type species : *Formica scutellaris* Oliver, 1792.
17. *Crematogaster laboriosa* F. Smith, 1874 밀드리개미
Crematogaster laboriosa F. Smith, 1874; Kim et. al, 1993.
 Collected sites : Reference Record(Kim, 1982, 1987; Kim, et. al, 1993; Lim, 1993; Park, 1993; Kim & Kim, 1994; Kim, 1994).
18. *Crematogaster brunnea teranishii* Santschi, 1930 검정밀드리개미
Crematogaster brunnea teranishii Santschi, 1930; Terayama et al, 1992; Kim et al, 1993, 1995.
Crematogaster teranishii: Choi, 1986.
 Collected sites : Paekyang temple, Sangwangbong, Naejang temple, Ggachibong, Sinseonbong, Seoraebong, Bulchoolbong.
19. *Crematogaster matsumurai* Forel, 1901 마쓰무라밀드리개미
Crematogaster laboriosa var. *matsumurai* Forel, 1901.
Crematogaster brunnea matsumurai: Wheeler, W.M, 1929.
Crematogaster matsumurai : Wheeler, W.M, 1930.
 Collected sites : Paekyang temple, Sangwangbong,
20. *Crematogaster matsumurai vagula* Wheeler, 1928 등굣은밀드리개미
Crematogaster matsumurai vagula Wheeler, 1928.
Crematogaster brunnea ruginota var. *vagula* : Santschi, 1930.
 Collected sites : Naejang temple, Seoraebong, Bulchoolbong.
- Genus 15. *Strumigenys* Smith, 1860 비늘개미속
Strumigenys Smith, 1860.
 Type species. *Strumigenys mandibularis* Smith, 1860.
21. *Strumigenys lewisi* Cameron, 1866 비늘개미
Strumigenys lewisi Cameron, 1866.
Strumigenys lewisi: Kim, 1970; Kim, 1963; Collingwood, 1976; Kim and Kim, 1982; Terayama et al, 1992; Kim et al, 1993, 1984, 1995.
 Collected sites : Paekyang temple, Sangwangbong, Seoraebong, Bulchoolbong.

Subfamily Dolichoderinae Forel 시베리아개미아과

Genus 16. *Ochetellus* Shattuck, 1992 흰발마디개미속

Ochetellus Shattuck, 1992.
Type species : *Hypoclinea glabra* Mayr, 1862.

- 22. *Ochetellus itoi* (Forel, 1900) 흰발마디개미
Iridomyrmex itoi Forel, 1900.
Iridomyrmex itoi var. *abbotti* Wheeler, 1906.
Ochetellus itoi Forel : Shattuk, S.O., 1992 : Kim et al., 1994.
Collected sites : Seoraebong, Bulchoolbong.

Subfamily Formicicinae Latreille, 1809 불가미아과

type genus : *Formica* Linnaeus 1758.
Key to Genera of Formicinae

- 1. Antennal insertions set at a distance behind posterior clypeal margin. *Camponotus*
- Antennal insertions more or less contiguous with posterior clypeal margin. 2
- 2. Antennae eleven segmented. *Plagiolepis*
- Antennae twelve segmented. 3
- 3. Eyes at or in front of midlength of sides of head; petiole inclined forward, petiole nodal or scale form and overhung by first gaster tergite. *Paratrechina*
- Eyes behind midlength of sides head; petiole nodal or as a vertical scale not over-hung by first gaster. 4
- 4. Mandibles sickle shaped, pointed, *Polyergus*
- Mandibles with broad masticatory border, coarsely dentate. 5
- 5. Propodeal spiracle ellipsoid or slitlike set at a distance from posterior propodeal declivity. Funiculus segments from two to five ong or longer than segments from six to eleven. *Formica*
- Propodeal spiracle broadly oval or circular, set close to or at the posterior propodeal margin. *Lasius*

Genus 17. *Polyergus* Latreille, 1804 사무라이

개미속

Polyergus Latreille, 1804.
Type species : *Formica rufescens* Latreille, 1798

- 23. *Polyergus samurai* Yano, 1804 사무라이개미
Polyergus rufescens samurai Yano, 1911.
Polyergus samurai : Emery, 1925.
Collected sites : Reference Record : Kim et. al. 1993.

Genus 18. *Plagiolepis* Mayr, 1861 잘룩개미속

Plagiolepis Mayr, 1861.
Type species : *Formica pygmae* Latreille, 1798

- 24. *Plagiolepis manczshurica* Ruzsky, 1905 만주잘룩개미
Plagiolepis pygmae var. *manczshurica* Ruzsky, 1905.
Collected sites : Paekyang temple, Sangwangbong, Naejang temple, Ggachibong, Sinseonbong, Seoraebong, Bulchoolbong.

Genus 19. *Paratrechina* Motschulsky, 1863 사구라이개미속

Paratrechina Motschulsky, 1863, Bull. Soc. Nat. Moscou 36 : 13.
Type species : *Paratrechina currens*, Wheeler, 1911.

- 25. *Paratrechina flavipes* (Fr. Smith, 1874) 스미드개미
Tapinoma flavipes F. Smith, 1874.
Prenopsis flavipes : Mayr, 1886.
Paratrechina flavipes : Emery, 1925 : Kim, 1987 : Terayama et al. 1992 : Kim et al. 1993, 1994.
Collected sites : Paekyang temple, Sangwangbong, Naejang temple, Ggachibong, Sinseonbong.

Genus 20. *Lasius* Fäbricius, 1804 풀잎개미속

Lasius Fäbricius, 1804.
Type species : *Formica nigra* Presl, 1822.

- 26. *Lasius japonicus* Santschi, 1937 고동털개미

- Lasius emarginatus* var. *japonicus* Santschi, 1941.
Formica niger Linnaneus, 1781.
Formica nigra Linnaneus, 1758.
Lasius niger : Teranishi, 1940; Kim, 1963, Kim, 1970; Collingwood, 1976, 1981; Kim, 1987; Terayama *et al.* 1992; Kim *et al.* 1993.
Lasius japonicus Santschi, 1937; Seifert, B. 1992; Kim & Lim, 1993; Kim *et al.* 1993, 1995.
 Collected sites : Paekyang temple. Sangwangbong.
27. *Lasius* (s. str.) *alienus* (Förster, 1850) 누운털개미
Formica aliena Förster, 1850.
Lasius alienus: Ruszsky, 1986; Collingwood, 1976, 1981; Kim, 1987.
Lasius niger var. *alieno-niger* Forel, 1874; Collingwood, 1982; Terayama *et al.* 1992; Kim *et al.* 1993, 1994, 1995.
 Collected sites : Reference Record : Lim, 1994.
28. *Lasius hayashi* Yamauchi & Hayashida 1970
 하야시털개미
Lasius hayashi Yamauchi & Hayashida 1970
 Collected sites : Reference Record (Kim, 1982, 1987; Kim, *et al.* 1993; Lim, 1993; Park, 1993; Kim & Kim, 1994; Kim, 1994).
29. *Lasius* (*Dendrolasius*) *spathepus* Wheeler, 1910
 민넙새개미
Lasius spathepus Wheeler, 1910.
Lasius spathepus : Kim, 1963; Collingwood, 1976; Kim, 1987; Terayama *et al.* 1992.
 Collected sites : Paekyang temple. Sangwangbong. Reference Record (Kim, 1982, 1987; Kim, *et al.* 1993; Lim, 1993; Park, 1993; Kim & Kim, 1994; Kim, 1994).
30. *Lasius* (*Cautholasius*) *talpa* Wilson, 1955 두더지털개미
Lasius talpa Wilson, 1955.
Lasius talpa : Collingwood, 1976; Kim, 1987; Terayama *et al.* 1992.
- Genus 21. *Formica* Linnaeus 1758, 불개미속
Formica Linne' 1758.
 Type species : *Formica rufa* Linnaeus, 1758.
31. *Formica japonica* Motschulsky, 1866. 곱개미
Formica japonica Motschulsky, 1866.
Formica fusca var. *japonica* : Emery, 1909.
Formica fusca japonica : Emery, 1925; Kim, 1963, 1976.
Formica japonica : Dlussky, 1967; Kim, 1987; Kim *et al.* 1993, 1995.
 Collected sites : Paekyang temple. Sangwangbong, Naejang temple, Ggachibong, Sinseonbong, Seoraebong, Bulchoolbong. Reference Record (Kim, 1982, 1987; Kim *et al.* 1993; Lim, 1993; Park, 1993; Kim & Kim, 1994; Kim, 1994).
32. *Formica fusca* Linnaeus, 1758 흑개미
Formica fusca Linnaeus, 1758.
Formica fusca : Terayama *et al.* 1992; Kim *et al.* 1993, 1995.
 Collected sites : Reference Record : Park, 1993
33. *Formica* sp. 5
 Collected sites : Naejang temple, Ggachibong, Sinseonbong, Seoraebong, Bulchoolbong.
34. *Formica lugubris* Zetterstedt, 1838 얼룩개미
Formica lugubris Zetterstedt, 1838; Collingwood, 1979; Kim & Park, 1994.
 Collected sites : Naejang temple, Ggachibong, Sinseonbong.
35. *Formica sanguinea* Latreille, 1798 분개미
Formica sanguinea Latreille, 1798.
Formica sanguinea : Mayr, 1861; Forel, 1913; Kim, 1963, 1970; Collingwood, 1978; Kim, 1987.
 Collected sites : Reference Record : Park, 1993.
- Genus 22. *Camponotus* Mayr, 1861 왕개미속
Camponotus Mayr, 1861.
 Type species : *Formica ligniperda* Latreille, 1802.

36. *Camponotus kiusuensis* Santsch, 1937 갈색발왕개미
Camponotus kiusuensis Santsch, 1937; Imai, 1966; Kim, 1987; Terayama *et al.* 1992.
 Collected sites : Paekyang temple, Sangwangbong.
37. *Camponotus japonicus* Mayr, 1866 일본왕개미
Camponotus japonicus Mayr, 1866.
Camponotus pennsylvanicus var. *japonicus* Emery, 1893.
Camponotus herculeanus saxatilis Ruzsky, 1894.
Camponotus herculeanus japonicus var. *sanguinea* Karawajew, 1929.
Camponotus herculeanus var. *koreanus* Teranishi <Syn.By Yasumatu & Brown,1915>.
Camponotus herculeanus japonicus var. *aterrima* Karawajew, 1912.
Camponotus japonicus ; Kim, 1963; Kim 1970; Collingwood, 1976, 1981; Kim, 1986, 1987; Terayama *et al.* 1992, 1993; Kim *et al.* 1994, 1995.
 Collected sites : Paekyang temple, Sangwangbong, Naejang temple, Ggachibong, Sinseonbong, Seoraebong, Bulchoolbong, Reference Record(Kim, 1982, 1987; Kim *et al.* 1993; Lim, 1993; Park, 1993; Kim & Kim, 1994; Kim, 1994).
38. *Camponotus obscuripes* Mayr, 1879 홍가슴개미
Camponotus ligniperda var. *obscuripes* Mayr, 1879.
Camponotus obscuripes : Kim, 1963, 1976; Kim & Kim, 1987.
 Collected sites : Paekyang temple, Sangwangbong, Naejang temple, Ggachibong, Sinseonbong.
 Remark : This species seems to be regarded as misidentification of *C. atrox* (Terayama *et al.* 1991). But in this paper this is identified according to earlier references of Korean ant fauna.
39. *Camponotus nawai* Ito, 1914 나도네눈개미
Camponotus fallax var. *nawai* Ito, 1914 :Emery, 1925
Camponotus nawai : Terayama and Satoh, 1990.
 Collected sites : Paekyang temple, Sangwangbong.
40. *Camponotus tokioensis* Ito, 1912. 제주왕개미
Camponotus tokioensis Ito, 1912.
Camponotus (*Myrmentoma*) *itoi tokioensis* : Emery, 1925.
Camponotus (*Myramblys*) *itoi tokioensis* : Wheeler, 1928.
Camponotus (*Myrmentoma*) *tokioensis* : Menozzi, 1940.
 Collected sites : Paekyang temple, Sangwangbong, Reference Record : Terayama *et al.* 1991.
41. *Camponotus jejuensis* Kim *et al.* Kim, 1986 한라왕개미(개칭)
Camponotus jejuensis Kim & Kim, 1986.
Camponotus jejuensis; Terayama *et al.* 1992; Kim *et al.* 1993; Kim *et al.* 1994; Kim *et al.* 1995.
 Collected sites : Paekyang temple, Sangwangbong, Naejang temple, Ggachibong, Sinseonbong, Seoraebong, Bulchoolbong, Reference Record(Kim, 1982, 1987; Kim *et al.* 1993; Lim, 1993; Park, 1993; Kim & Kim, 1994; Kim, 1994).
42. *Camponotus itoi* Forel, 1912 이도왕개미
Camponotus (*Myrmamblys*) *itoi* Forel, 1912. Ann. Soc. Ent. Belg. 56 : 340.
 Collected sites : Paekyang temple, Sangwangbong, Naejang temple, Ggachibong, Singeonbong.
43. *Camponotus concavus* Kim & Kim, 1994 흑색패인왕개미
Camponotus concavus Kim & Kim, 1994. Korean, J. Entomol, 24 : 285-292.
 Collected sites : Kim & Kim, 1994.
44. *Camponotus fuscus* Kim & Kim, 1994 검정네

눈개미(개칭)

Camponotus fuscus Kim & Kim, 1994.
Korean J. Entomol. 24 : 285-292.
Collected sites : Kim & Kim, 1994.

Camponotus (*Myrmentoma*) *caryae* var.
quadronotatus: Wheeler, 1928.

Camponotus quadronotatus: Collingwood,
1976; Wang, Xio & Wu, 1989.

Collected sites : Naejang temple, Ggachinbong,
Sinseonbong.

45. *Camponotus quadrinotatus* Forel, 1886 네눈개미
Camponotus marginatus var *quadrinotatus*
Forel, 1886. Ann. Soc. Ent. Belg. 30 : 142.

Table. A list of ants from Mt. Naejang National Park

No.	Science name	1	2	3	4	Remarks
1	<i>Ectomyrmex javanus</i>	●	●			
2	<i>Cryptopone sauteri</i>	●	●			
3	<i>Ponerajaponica</i>		●			
4	<i>Ponera scabra</i>	●				
5	<i>Hypoponera nippona</i>	●				
6	<i>Hypoponera sauteri</i>	●				
7	<i>Myrmica kurokii</i>		●	●		
8	<i>Aphaenogaster japonica</i>	●	●			
9	<i>Pheidole fervida</i>	●	●	●		
10	<i>Pheidole nodus</i>				●	
11	<i>Tetramorium caespitum</i>	●	●	●		
12	<i>Vollenhovia emeryi</i>	●	●	●		
13	<i>Leptothorax koreanus</i>	●	●	●		
14	<i>Monomorium chinense</i>	●				
15	<i>Solenopsis japonica</i>		●			
16	<i>Pristomyrmex pungens</i>	●	●	●		
17	<i>Crematogaster laboriosa</i>				●	
18	<i>Crematogaster teranishi</i>	●	●	●		
19	<i>Crematogaster matsumurai</i>	●				
20	<i>Crematogaster matsumurai vagula</i>			●		
21	<i>Strumigenys lewisi</i>	●		●		
22	<i>Ochetellus itoi</i>			●		
23	<i>Polyergus samurai</i>				●	
24	<i>Plagiolepis manzurica</i>	●	●	●		
25	<i>Paratrechina flavipes</i>	●	●			
26	<i>Lasius japonicus</i>	●			●	
27	<i>Lasius alienus</i>				●	
28	<i>Lasius hayashi</i>		●		●	
29	<i>Lasius spathepus</i>	●			●	
30	<i>Lasius talpa</i>		●		●	
31	<i>Formica japonica</i>	●	●	●	●	
32	<i>Formica fusca</i>				●	
33	<i>Formica sp.5</i>		●	●		
34	<i>Formica lugubris</i>		●			
35	<i>Formica sanguinea</i>				●	
36	<i>Camponotus kiusiuensis</i>	●				
37	<i>Camponotus japonicus</i>	●		●	●	
38	<i>Camponotus obscuripes</i>	●	●			
39	<i>Camponotus nawai</i>	●				
40	<i>Camponotus tokioensis</i>	●				
41	<i>Camponotus jejuensis</i>				●	
42	<i>Camponotus itoi</i>	●	●			
43	<i>Camponotus concavus</i>				●	
44	<i>Camponotus fuscus</i>				●	
45	<i>Camponotus quadrinotatus</i>		●		●	
		26	23	14	15	

1: Paekyang temple → Sangwangbong → Paekyang temple, 2: Naejang temple → Ggachinbong → Sinseonbong → Naejang temple, 3: Naejang temple → Seoraebong → Bulchoolbong → Naejangsa, 4: Reference Record(Kim, 1982,1987; Kim,et.al., 1993; Lim, 1993; Park, 1993; Kim & Kim, 1994; Kim, 1994)

요 약

저자들은 1995년 6월부터 1996년 10월까지 내장산 국립공원 일대에 서식하고 있는 개미류에 대한 조사 연구를 수행하였다. 채집된 모든 표본을 동정한 결과 4아과 22속 45종이 서식하는 것으로 나타났다. 침개미아과는 *Ectomomyrmex* 1종, *Cryptone* 1종, *Ponera* 2종, *Hyponera* 2종을 합하여 6종이었으며 두마디개미아과는 *Myrmica* 1종, *Aphaenogaster* 1종, *Pheidole* 2종, *Tetramorium* 1종, *Vollenhovia* 1종, *Leptothorax* 1종, *Monomorium* 1종, *Solenopsis* 1종, *Pristomyrmex* 1종, *Crematogaster* 4종, *Strumigenys* 1종을 합하여 15종 이었다. 시베리아개미아과는 *Ochetellus* 1종 뿐이었고 불개미아과는 *Polyergus* 1종, *Plagiolepis* 1종, *Paratrechina* 1종, *Lasius* 5종, *Formica* 5종, *Camponotus* 10종을 합하여 23종 이었다.

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