

Ants from Chiaksan National Park

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치악산 국립공원의 개미

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ABSTRACT

During April, 1991 to September, 1997, ants had been collected in Chiaksan National Park, Kangwon Province. Examining all the collections from this area, 20 species of 11 genera under 3 subfamilies had been identified.

Key wores : Ants, Chiaksan National Park, Kangwon Province, Korea, Ant fauna

INTRODUCTION

Chiaksan National Park is located at Socho-myon, Panbu-myon, and Silni-myon, Wonju-shi, and Anhung-myon, Hoingsong-gun, from 14 minutes, 37 degrees to 24 minutes, 37 degrees of north latitude, from 128 degrees to 6 minutes, 128 degrees of east latitude. It consists of Chonji-bong, 1086.5m, Biro-bong, 1288m, Sambong, 1072.6m, Hyangno-bong, 1042.9m, Mankyongdae, 1182.5m, Namdae-bong, 1187m, and Simyong-bong, 1088m. It has so deep valleys and high mountainsides that there are found abundant various trees and plants, which provide good habitats for wild animals. We have been so interested in the ant fauna of Korean peninsular that we have tried to do that since 1990. Of

course, this study may be one of them. The present studies were directed toward identification of ants in Chiaksan National Park in the hope that the result would offer distinctive informations for the ant fauna of Korea. In order to get enough samples without biased sampling, two hundred or more ant nests were excavated in this region by authors from 1991 to 1997.

MATERIALS AND METHODS

All the collections used in this paper were collected from Chiaksan National Park. Ant nests being excavated by a spade and moved to white clothes, they were vacuumed by vacuum pump modified for ant collecting. Thereafter they were put in Bouin's solution (80% ethanol 150ml, formaldehyde 15ml, picric acid 1g) and two or

three days later moved to 95% ethanol. Dried specimens were examined microscopically, using Wild M8 stereozoom-microscope, and identified in comparison with voucher specimens from Elmes and Collingwood in Great Britain, Onoyama in Japan, Rigato in Italy and Wang in China. Taxonomic keys were made following the system of Collingwood (1979) The twenty species confirmed were listed in this paper including some informations of this region.

SYSTEMATIC ACCOUNT

Subfamily Key of Family Formicidae

Subfamily 1. Ponerinae Lepeletier, 1835 침개미아과
Tribe 2. Ponerini Lepeletier, 1835: 185 침개미족
Genus 1. *Pachycondyla* Smith, 1858: 105 동보
침개미속

1. *Pachycondyla javana* (Mayr, 1867) 일본침개미

Ectomomyrmex javanus Mayr, 1867: 84;
Kim, C. 1970: 472; Terayama et al., 1992:
23; Kim et al., 1993: 119; Kim et al., 1994:
295; Yu et al., 1994: 255; Kim et al., 1995:
103; Kim et al., 1996: 121; Kim et al., 1997:
42; 1997: 116.

Pachycondyla (Ectomomyrmex) japonica
Emery, 1902: 31.

Localities: Namdaebong.

Distribution: Kaesong, Kŭmkangsan, Sŏ
kwangsa, Kyŏngsŏng, Suwon, Kanghwado, Sŏ
raksan, Songnisan, Chirisan, Sobaeksan,
Woraksan, Naejangsan, Hongdo, Hanrasan,
Moaksan, Mir ksan.

Subfamily 2. Myrmicinae Lepeletier, 1836 두마
디개미아과

Tribe 2. Crematogastrini Forel, 1893: 164 꼬리
치레개미족

Genus 2. *Crematogaster* Lund, 1831: 132 꼬리
치레개미속

Type species: *Formica scutellaris* Oliver, 1792: 479.

2. *Crematogaster matsumurai* Forel, 1901 마쓰무라 꼬리치레개미

Crematogaster laboriosa var. *matsumurai*
Forel, 1901: 372.

Crematogaster brunnea matsumurai:
Wheeler, W.M. 1929:.

Crematogaster matsumurai: Wheeler,
W.M. 1930: 65; Collingwood, 1976: 303;
Collingwood, 1981: 26; Terayama et al., 1992:
31; Kim et al., 1993: 122; Kim et al., 1994:
256; Kim et al., 1996: 124.

Localities: Biro-bong.

Distribution: Kanghwado, Songnisan, Keryongsan,
Sobaeksan. Naejangsan, Jinhae, Tolsando,
Namhaedo, Odongdo, Chejudo.

Tribe 3. Pheidolini Emery, 1877: 72 흑개미족

Genus 3. *Aphaenogaster* Mayr, 1853: 107 장다
리개미속

3. *Aphaenogaster famelica* (Smith, 1874) 황장다리개미

Ischnomyrmex famelica Smith, 1874: 405.

Aphaenogaster famelica: Mayr, 1879: 669.

Stenamma (Aphaenogaster) famelica: Wheeler,
W.M. 1906: 315.

Aphaenogaster (Attomyrma) famelica :
Emery, 1921: 57; Kim, C.W. 1963: 344;
Kim,

C.W. 1970: 475; Collingwood, 1981: 26; Kim
& Kim, 1982: 104; 1983: 72; Terayama et
al., 1992: 26; Kim et al., 1993: 122; Kim et
al., 1994: 296; Yu et al., 1994: 256; Kim et
al., 1995: 104.

Localities: Kuryonggsa.

Distribution: On-Dzong (Kangwondo, North
Korea), Kŭmgangsan, Seoul, Kach'ilbong,
Ch'iaksan, Chogesan, Piagol, Kayasan,
Chejudo.

Genus 4. *Pheidole* Westwood, 1839: 219. 흑개
미속

4. *Pheidole fervida* Fr. Smith, 1874 극동흑개미

Pheidole fervida Fr. Smith, 1874: 406; Forel, 1900: 285; Teranishi, 1940: 4; Ogata, 1982: 195; Imai, 1966: 119.

Pheidole fervida var. *kwazana* Teranishi, 1940: Kupyanskaya, 1990: 124.

Pheidole fervida: Kim, 1963: 344; Kim, C.W. 1970: 477; Collingwood, 1976: 302; Collingwood, 1976: 302; Kim & Kim, 1983: 71; Terayama et al., 1992: 27; Kim et al., 1993: 124; Kim et al., 1994: 299; Yu et al., 1994: 257; Park, 1995: 49; Kim et al., 1995: 105; Kim et al., 1996: 122; Kim et al., 1997: 45; 1997: 118.

Localities: Kuryongsa.

Distribution: Kaesong, Pakyon Pokpo, Sagampo, Kŭmgangsan, Pyongyang, Sŏkwangsa, Kanghwado, Sŏraksan, Seoul, Songnisan, Woraksan, Keryongsan, Chirisan, Namhaedo, Gŏjedo, Naejangsan, Odongdo, Yokchido, Hansnado, Hanllasan, Moaksan, Mirŏksan.

5. *Pheidole noda* F. Smith, 1874 흑개미

Pheidole nodus F. Smith, 1874: 407; Forel, 1900: 268; Ogata, 1982: 196.

Pheidole nodus: Kim, 1963: 344; Kim, C.W. 1970: 476; Kim & Kim, 1983: 69; Terayama et al., 1992: 27; Kim et al., 1993: 125; Yu et al., 1994: 257; Kim et al., 1996: 123; Kim et al. 1997: 46.

Localities: Kuryongsa.

Distribution: S raksan, Seoul, Songnisan, Woraksan, Keryongsan, Naejangsan Chirisan, Sŏnamsa, Paekyangsa, Kayasan, Yudalsan, Choongmu, Ullŏngdo, Namhaedo, Gŏjedo, Odongdo, Yokchido, Hansnado, Pigŏmdo, Hanllasan, Moaksan.

Tribe 4. Myrmecini Ashmead, 1905: 383 가시방패개미족

Genus 5. *Pristomyrmex* Mayr, 1866: 903 그물등개미속

6. *Pristomyrmex pungens* Mayr, 1866 그물등개미

Pristomyrmex pungens Mayr, 1866: 904.

Pristomyrmex pungens: Kim, C.W. 1963: 103; Kim, C.W. 1970: 481; Collingwood, 1976: 303; Collingwood, 1981: 27; Kim & Kim, 1982: 101; Kim & Kim, 1983: 58; Terayama et al., 1992: Kim et al., 1993: 125; Kim et al., 1994: 299; Yu et al., 1994: 257; Kim et al., 1995: 105; Kim et al., 1996: 124; Kim et al., 1997: 47; 1997: 119.

Localities: Namdaebong. Kuryongsa.

Distribution: Kŭmgangsan, Sŏraksan, Seoul, Suwon, Yangjugun Kyohyŏnri, Kwangjugun Pungsanri, Chiaksan Kuryongsa, Naejangsan, Chirisan Chŏgsanri, Chejudo, Moaksan, Mirŏksan.

Tribe 5. Myrmecini Emery 1877: 71 빨개미족

Genus 6. *Myrmica* Latreille, 1804: 179 빨개미속

7. *Myrmica cadusa* Kim et al., 1997 향아리빨개미

Myrmica cadusa Kim et al., 1997: 425.

Myrmica cadusa : Kim et al. 1997: 425

Localities: Biro - bong.

Distribution: Moaksan.

8. *Myrmica kotokui* Forel, 1911 코토쿠빨개미

Myrmica rubra kotokui Forel, 1911: 267.

Myrmica kotokui : Collingwood, 1976: 300; Terayama et al., 1992: 23; Kim et al., 1993: 124; Ryu, 1994: 12; Yu et al., 1994: 257.

Localities: Biro - bong.

Distribution: Chann - Pay plateau (Ryanggang), Samziyan (1500m).

9. *Myrmica kurokii* Forel, 1907 쿠로키빨개미

Myrmica rubra kurokii Forel, 1907: 18.

Myrmica kurokii Forel: Emery, 1908: 171; Weber, 1947: 469; Collingwood, 1976: 301; Collingwood, 1981: 26; Kim & Kim, 1983: 56; Terayama et al., 1992: 25; Yu et al.,

1994: 257; Kim et al., 1996: 122; Kim et al., 1997: 119.

Localities: Biro - bong.

Distribution: Ryanggang Paektusan(1900m), Sŏ-raksan, Hongchŏngun Kebangsansan, Sobaeksan, Naejangsan, Moaksan.

10. *Myrmica sulcinodis* Nylander, 1846 어리뿔개미

Myrmica sulcinodis Nylander, 1846: 934; Mayr, 1855: 409; Teranishi, 1940: 4; Kim, C.W. 1963: 343; Kim, C. 1970: 474; Hauschteck, 1965: 323; Collingwood, 1976: 300; Kim & Kim, 1983; Kim et al., 1993: 124; Yu et al., 1994: 257.

Localities: Biro - bong.

Distribution: Chann - Pay plateau, Samzuyan (1700m) (Ryanggang).

Tribe 6. Tetramorini Emery, 1895: 770 주름개미족

Genus 7. *Tetramorium* Mayr, 1855: 423 주름개미속

11. *Tetramorium caespitum* (Linnaeus, 1758) 주름개미

Formica caespitum Linnaeus, 1758: 581.

Tetramorium caespitum: Mayr, 1855: 426.

Tetramorium caespitum semileve var. *jacoti* Wheeler, 1923: ? (syn. by Yasumatsu, 1962).

Tetramorium caespitum: Teranishi, 1940: 18; Kim, C.W. 1963: 345; Kim, C.W. 1970: 482; Collingwood, 1976: 304; Collingwood, 1981: 27; Kim & Kim, 1982: 102; Kim & Kim, 1983: 67; Terayama et al., 1992: 28; Kim et al., 1993: 126; Kim et al., 1994: 300; Yu et al., 1994: 257; Kim et al., 1995: 106; Kim et al., 1996: 123; Kim et al., 1997: 47; 1997: 119.

Localities: Kuryongsa.

Distribution: Pyŏngyang, Nŭnggrado, Pakyonsan, Pakyon - Pokpo, Sanchontong, Wonsan, Sisungho, Kŭngangsansan, Chann - Pay plateau,

Samziyan, Naejangsan, Sŏraksan, Hoingsŏnggun Kapchŏnmyŏn, Hongchŏn, Choonchŏn, Chiaksan, Dokgosan, Seoul, Suwon, Woraksan, Songnisan, Keryongsan, Moaksan, Chirisan, Kayasan, Sunchŭn, Chokyesan, Odongdo, Mungapdo, Namhaedo, Hanllasan, Moaksan, Mirŏksan.

Subfamily 3. Formicicinae Latreille, 1809 불개미아과

Tribe 7. Camponotini Forel, 1878: 374 왕개미족
Genus 8. *Camponotus* Mayr, 1861: 35 왕개미속

12. *Camponotus japonicus* Mayr, 1866 일본왕개미

Camponotus japonicus Mayr, 1866: 885.

Camponotus pennsylvanicus var. *japonicus* Forel, 1879: 56.

Camponotus herculeanus japonicus: Emery, 1908: 186; Teranishi, 1940: 6; Kim, C.W. 1963: 346.

Camponotus japonicus: Bingham, 1903: 390; Kim, 1970: 484; Collingwood, 1976: 307; Collingwood, 1981: 29; Kim, 1987: 13; Terayama et al., 1992: 38; Kim et al., 1993: 127; Kim et al., 1994: 301; Yu et al., 1994: 257; Kim et al., 1995: 106; Kim et al., 1996: 127; Kim et al., 1997: 48; 1997: 120.

Localities: Kuryongsa.

Distribution: Desangsan, Lyongaksan, Sagam, Changlyongsan, Pyŏngyang, Nŭnggrado, Bongwari, Zamosan, Nampo, Guksangbong mountain [Pyongannamdo], Pakyŏnsan, Pakyŏn Pokpo, Sŏraksan, Kanghwado, Suwon, Taechŏn, Songnisan, Woraksan, Keryongsan, Naejangsan, Sobaeksan, Pusan, Chinhae, Choongmu, Namhaedo, Kŏjedo, Sarangdo, Yokjido, Maemuldo, Odongdo, Moaksan, Mirŏksan.

13. *Camponotus kiusuensis* Santschi, 1937 갈색발왕개미

Camponotus kiusuensis Santschi, 1937: 379;

Imai, 1966: 119; Kim, 1987: 19; Terayama et al., 1992: 39; Yu et al., 1994: 257; Kim et al., 1996: 127; Kim et al., 1997: 49.

Localities: Biro - bong.

Distribution: Songnisan, Keryongsan, Woraksan, Paekyangsa, Naejangsan, Ullungdo, Namhaedo, Horgdo, Kõmundo, Chejudo, Moaksan.

14. *Camponotus (s.str.) obscuripes* Mayr, 1879 **홍가슴개미**

Camponotus ligniperdus var. *obscuripes* Mayr, 1879: 645; Andr , 1903: 128.

Camponotus (Camponotus) ligniperda var. *obscuripes*: Emery, 1925: 73.

Camponotus (s. str.) obscuripes: Yasumatsu & Brown, 1951: 38 (raised to species); Kim, C.W. 1963: 346; Kim, C.W. 1970: 485; Kim, 1987: 25; Collingwood, 1976: 307; Kupyanskaya, 1990: 171; Terayama et al., 1992: 41; Kim et al., 1993: 127; Yu et al., 1994.

Localities: Biro - bong.

Distribution: Yongmunsan, Kayasan, Chejudo.

Tribe 8. Formicini Latreille, 1809: 124 **불개미**
Genus 9. *Formica* Linnaeus 1758: 579 **불개미**

15. *Formica japonica* Motschulsky, 1866 **곰개미**

Formica japonica Motschulsky, 1866: 183.

Formica fusca var. *japonica* : Emery, 1909: 197; Teranishi, 1940: 6.

Formica fusca japonica : Emery, 1925: 247; Kim, C. 1963: 347; Kim, C. 1970: 489.

Formica japonica Dlussky, 1967: 58; Collingwood, 1976: 305; Collingwood, 1981: 27; Kim, B. 1987: 35; Terayama et al. 1992: 37; Kim et al. 1993: 128; Kim, B. & Park, 1994: 133; Kim et al. 1994: 303; Yu et al. 1994: 257; Kim et al. 1995: 106; Kim et al. 1996: 126; Kim et al. 1997: 49; 1997: 121.

Localities: Kuryongsa.

Distribution: Mangyongdae, Desangsan, Nampo, Lyongaksan, Zamosan, Chann - pay plateau, Samziyan, Pakyonsan, Pakyon - pokppo, Kũ - mgangsan, Sõraksan, Kanghwado, Hongchon, Seoul, Daechon, Woraksan, Songnisan, Keryongsan, Chirisan, Paekyangsa, Naejangsan, Sobaeksan, Chinhae, Pusan, Choongmu, Sarangdo, Gõmundo, Yokjido, Hansando, Namhaedo. Maemuldo, Hanrasan, Chejudo, Moaksan, Mirõksan.

16. *Formica (s.str.) yessensis* Forel, 1901 **불개미**

Formica truncicola var. *yessensis* Wheeler, 1913: 391.

Formica rufa truncicola var. *yessensis* Forel, 1901: 66; Teranishi, 1940: 5; Kim, C. 1970: 490.

Formica truncicola yessensis: Ruzsky, 1926: 110

Formica yessensis: Collingwood, 1976: 304; Collingwood, 1981: 27; Terayama et al. 1992: 37; Kim, B. & Park, 1994: 136; Yu et al. 1994: 257; Kim et al. 1995: 107.

Localities: Kuryongsa.

Distribution: Pakyonsan, Pakyonpokpo, Hwasan, Kyõngsõng, Sõraksan, Hongchõn, Woraksan, Songnisan, Chirisan, Sobaeksan, Sarangdo, Hansando, Kõjedo.

Tribe 9. Lasiini Ashmead, 1905: 384 **풀잎개미**

Genus 10. *Lasius* F bricius, 1804: 415 **풀잎개미**

17. *Lasius (s.str.) alienus* (Fõrster, 1850) **누운털개미**

Formica aliena Fõrster, 1850: 36.

Lasius alienus : Mayr, 1861: 49; Collingwood, 1976: 305; Collingwood, 1981: 27; Kim, 1987 : 46; Terayama et al., 1992: 35; Kim et al., 1993: 129; Kim & Lim, 1994: 119; Kim et al., 1994: 302; Kim et al., 1995: 107; Yu et al., 1994: 258; Kim et al., 1996: 126; Kim et al., 1997: 50; 1997: 122.

Lasius niger var. *alieno - niger* Forel. 1874: 46.

Localities: Kuryongsa.

Distribution: Sagam, Pyongyang, Pakyonsan [Pyongannamdo], Kaesŏng Pakyon - Pokpo, Moaksan, Mirŏksan.

18. *Lasius hayashi* Yamauchi & Hayashida, 1970 하야시털개미

Lasius hayashi Yamauchi & Hayashida 1970: 510; Collingwood, 1976: 305; Collingwood, 1981: 27; Kupyanskaya, 1990: 220; Seifert, 1992: 45; Terayama et al., 1992: 35; Yu et al., 1994: 258; Kim et al., 1996: 126.

Localities: Biro - bong.

Distribution: Pyŏngyang Hotel garden, Gugsanbong, Desangsan, Zamosan [Pyongannamdo] Kŭmgangsan, Kaesŏng, Pakyonsan, Hyesan Hotel garden. Sŏraksan, Woraksan, Songnisan, Chirisan.

19. *Lasius niger* Linnaneus, 1758 고동털개미

Formica niger Linnaneus, 1758: 580.

Lasius niger: F bricius, 1804: 415; Teranishi, 1940: 20; Kim, C.W. 1963: 347; Kim, C.W. 1970: 488; Collingwood, 1976: 305; Collingwood, 1981: 27; Kim, 1987: 59; Terayama et al., 1992: 35; Kim et al., 1993: 129; Kim & Lim, 1994: 120; Kim et al., 1994: 302; Yu et al., 1994: 258; Kim et al., 1995: 109; Kim et al., 1997: 122.

Localities: Kuryongsa.

Distribution: Ryanggang, Kangwon - Kaesong provinces, Paekyangsa, Sangwangbong, Mirŏksan.

Genus 11. *Paratrechina* Motschulsky, 1863: 13
사쿠라개미속

20. *Paratrechina (Nylanderia) flavipes* (Smith, 1874) 스미드개미

Tapinoma flavipes Smith, F. 1874: 404.

Paratrechina flavipes Mayr, 1886: 362.

Paratrechina (Nylanderia) flavipes : Emery, 1925: 220; Teranishi, 1940: 5; Kim, C.W. 1963: 346; Kim, 1970: 486; Collingwood, 1976: 306; Collingwood, 1981: 27; Kim, 1987: 68; Terayama et al., 1992: 36; Kim et al., 1993: 129; Kim et al., 1994: 303; Yu et al., 1994: 258; Kim et al., 1996: 125.

Localities: Kuryongsa.

Distribution: Parks Hotel garden (Pyongyangsi), Kaesong, Pakyŏnsan, Sanchontong, Pakyon Pokpo, Kŭmgangsan Hotel garden, Sŏraksan, Hongchŏn, Kanghwado, Seoul, Suwon, Woraksan, Songnisan, Taechŏn, Keryongsan, Chirisan, Sobaeksan, Pusan, Choongmu, Chindong, Ullŭngdo ngdo, Hongdo, Sarangdo, Odongdo, Tolsando, Chejudo.

적 요

1991년 4월부터 1997년 12월까지 강원도 치악산 국립공원을 대상으로 개미류를 채집하였다. 그 결과 3아과 11속 20종이 확인되었다.

검색어 : 개미, 치악산국립공원, 강원도

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