

INSECTES SOCIAUX

BULLETIN DE L'UNION INTERNATIONALE
POUR L'ÉTUDE DES INSECTES SOCIAUX

NOUVELLES DE L'UNION

Tome I — 1954 — N° 3

II

NOUVELLES DE L'UNION

LA VIE DES SECTIONS

SECOND ANNUAL MEETING OF NORTH AMERICAN SECTION IN LOS ANGELES, CALIFORNIA, DEC. 27, 1953

The second annual meeting of the American Section of the International Union for the Study of Social Insects was held in conjunction with the meeting of the Entomological Society of America in Los Angeles, California, on December 7, 1953. In the absence of the chairman and secretary, Dr. Charles D. MICHENER served as chairman pro tem. A symposium was held on ecological methods for the study of social insects. Dr. Orlando PARK of Northwestern University spoke on myrmecophilous pselaphid beetles; Dr. Frances WEESNER of the University of California spoke on the ecology of southwestern American termites; Dr. Joseph F. REINHARDT of Huron, California, spoke on the responses of bees visiting the flowers of alfalfa, and Dr. Edward S. Ross of the California Academy of Sciences spoke on the use of photography in the study of social insects.

TRAVAUX PUBLIÉS PAR DES MEMBRES DE L'UNION

1944. BISGAARD (CH.). — Meddelelse om nogle nye Myrer for Danmarks Fauna (With an English summary) (*Entomol. Meddel.*, vol. 25, p. 115-126, 2 fig.).

I. The first time *Formica uralensis* Ruzsky was found here in Denmark was in Jutland in the summer of 1938. Only one little nest was situated on the borderland of a moor and although the nest was not disturbed, this species is first found again at this moor in July 1953. This time it lived together with *Formica picea*, who is known as one of the host-species of *F. uralensis*.

During the above-mentioned 15 years a few nests of *F. uralensis* were seen on a neighbouring moor.

II. The entrance holes to several nests of *Myrmica schencki* Emery found in 1939 were provided with a tubular prolongation, which was constructed by plant fragments joined together.

It appeared that Dr. Stårcke (*Tijdsch. v. Ent.*, 70, p. 41, 1927, and 71, p. 44, 1928) had already described these peculiar entrances calling them "chimneys".

III. A queen of *Anergates atratulus* Schenck was found on the island of Bornholm in a colony of about a hundred *Tetramorium* workers together with some worker-pupæ and some nearly full-grown larvæ.

In papers dealing with *Anergates* it is emphasized, however, that *Tetramorium*-brood is never found in colonies of *Anergates*. In this case the gaster of the queen was only a little swollen, and it seems that the adoption has taken place recently, and that the brood of the former *Tetramorium* queen has not yet hatched.

1948. BOETIUS (J.). — Sortfarvningssygdom i danske Bigaarde 1944-1947 (*Maanedsskrift for Dyrlaeger*, vol. 59, p. 413-23).

A status of bee paralysis in Danish apiaries is given for the years 1944-1947. Bee paralysis forms a complex of diseases, the greater part of the Danish cases most likely belonging to an infectious type. Transmission seems to take place by drifting and not by exchange of combs.

1948. BOETIUS (J.). — Ueber den Verlauf der Nektarabsonderung einiger Blütenpflanzen (*Beih. z. Schweizerischen Bienenzeitung*, vol. 2 (Heft 17), p. 257-317).

Die Arbeit behandelt Untersuchungen über Trockensubstanzgehalt in Blütenpflanzen in Beziehung zu Entwicklungsstufen der Blüten. Zudem werden die vom BEUTLER und KLEBER nachgewiesenen täglichen Rhythmen in der Sekretion näher analysiert. Weiter ist der Einfluss durch Bienenbesuch und Witterung auf der Sekretion untersucht. Schliesslich wird eine tabellarische Uebersicht über die Nektarproduktion von 41 untersuchten Blütenpflanzen gegeben.

1947. CONSANI (M.). — Reperti corologici sulle formiche itamiane (*Redia*, 32, 179-182). — 1947. Primo contributo alla conoscenza della fauna entomologica del Matese. Imenotteri (*Formicidae*) (*Boll. Assoc. Romana Entom.*, 2, 28-29). — 1948. Interessante reperto su *Emboleus ruddii* Westkood (*Hymenoptera*, *Bethylloidea*, *Emboleus*) (*Redia*, 33, 123-125, 1 fig.). — 1949. Formiche raccolte nell'Appenninico Abruzzese dal Sig. Pio Bisleti (*Boll. Assoc. Romana Entom.*, 4, 11-12). — 1950-1951. Formiche dell'Africa Orientale (*Boll. Ist. Entom. Univ. Bologna*, 18, 167-172, 4 fig.). — 1951. Formiche di Puglia e delle Isole Tremiti (*Mem. Biogeogr. Adriatica*, 2, 25-31). — 1951. e MENOZZI (C.). Missione biologica Sagan-Omo diretta dal Prof. E.

- Zavattari. *Hymenoptera, Formicidae* (Riv. Biol. Coloniale, **11**, 57-71, 4 fig.). — 1952. e ZANGHERI (P.). Fauna di Romagna. Imenotteri-Formicidi (Mem. Soc. Entom. Ital., **31**, 38-48). — 1952. Un caso di omonimia nel genere *Crematogaster* (Hymenoptera, Formicidae) (Boll. Soc. Entom. Ital., **82**, 100).
1937. GHIDINI (G. M.). — Su alcuni *Termitidi* di Sumatra raccolti da E. Jacobson (Atti Soc. It. Sc. Nat., **76**, 317-329). — 1937. I Reali di terza forma in *Reticulitermes lucifugus* Rossi (Mem. Soc. Ent. It., **16**, 25-36). — 1937. Ulteriori risultati negli allevamenti di *Reticulitermes lucifugus* Rossi (Boll. Soc. It. Biol. Sper., **12**, 633-634). — 1937. Missione del Prof. E. Zavattari nel Paese dei Borana-Nuove specie di *Termitidi* (Boll. Soc. Ent. It., **62**, 141-143). — 1938. Ninfe soldati in *Reticulitermes lucifugus* Rossi ottenute in allevamento (Arch. Zool. It., **25**, 95-107). — 1938. La presumibile funzione delle spugne legnose nei nidi dei *Metatermitidi* (Riv. Biol. Colon., **1**, 261-267). — 1939. Le spirochete presenti in *Reticulitermes lucifugus* Rossi (Riv. Biol. Colon., **2**, 125-140) (in collab. con I. ARCHETTI). — 1939. Sulla presenza di acetilcolina in *Reticulitermes lucifugus* e *Calotermes flavicollis* (Riv. Biol. Colon., **2**, 207-213). — 1939. Sulle concrezioni pericardiali nelle termiti (Riv. Biol. Colon., **2**, 345-353) (in collab. con M. MORIGGI). — 1939. Ricerche sul quoziente respiratorio nelle diverse caste di *Reticulitermes lucifugus* Rossi (Riv. Biol. Colon., **2**, 385-399). — 1940. Ricerche sulla attività cellulolitica della flora e della fauna intestinale di *Reticulitermes lucifugus* Rossi (Boll. Soc. It. Biol. Sper., **15**, 220-221). — 1941. A proposito di alcune recenti ricerche sulla cellulolisi nell'intestino delle termiti (Boll. di Zool., **12**, 103-113). — 1941. Le gregarine delle termiti con descrizione di una nuova specie (Riv. Parassit., **5**, 161-175) (in collab. con M. MORIGGI). — 1942. *Trichonympha scortecci* nuova specie di Flagellato vivente in *Psammotermes hybostoma* Desn. (Boll. di Zool., **13**, 5 p.). — 1942. Le *Trichonympha* di *Reticulitermes lucifugus* Rossi (Riv. Biol. Colon., **5**, 19-40). — 1942. Regressione delle gonadi ed evoluzione delle caste sterili nelle termiti (Arch. It. Anat. e Embriol., **47**, 825-831) (in coll. con E. STELLA). — 1946. Il *Reticulitermes lucifugus* può attaccare piante viventi (Boll. Soc. Ent. Ital., **76**, 42-46) (in coll. con F. CAPRA). — 1949. Ricerche biologiche su *Iridomyrmex pruinosus humilis* Mayr. (Boll. Soc. Entom. It., **72**, 58-62). — 1952, L'Ape (La Scuola-Brescia, 1-73).
1920. JUCCI (C.). — Sulla differenziazione delle caste nelle società dei Termitidi. N. 1 e 2 (Rendic. Accd. Lincei, vol. **29**, ser. 5^a, 2^o sem., fasc. 1^o-2^o, p. 69-71, 95-98). — 1921. Sulla presenza di depositi uratici nel tessuto adiposo dei Termitidi (Rend. Acc. Lincei, vol. **30**, ser. 5^a, 1^o sem., fasc. 3^o, p. 92-95). — 1921. Sul metabolismo dei reali veri nella società dei Termitidi (Rend. Acc. Lincei, vol. **30**, ser. 5^a, 1^o sem., fasc. 7^o, p. 213-15). — 1924. Su la differenziazione delle caste nella società dei Termitidi. I Neotenici (Reali veri e neotenici. L'escrezione nei reali neotenici. La fisiologia della biologia) (Memorie Acc. Lincei, **14**, **9**, p. 267-500, 21 fig., 4 tav.). — 1926. Le cellule nutrici degli spermi nel re delle Termiti (Boll. Soc. It. Biol. sperim., **1**, **3**, p. 248-50). — 1926. Il problema delle caste nei Termiti (Rivista di Biologia, **7**, **3**, p. 404-409). — 1930. La biologia sessuale nelle Società degli insetti e le cellule nutrici degli spermi (Proceed. 2^o Intern. Congr. f. sex. research, Edinburgh, p. 231-238). — 1931. Sulla presenza di batteriociti nel tessuto adiposo dei Termitidi (Arch. Zool. It. Vol. Atti XI Congr. Intern. Zool. Padova, **3**, p. 1422-1428). — 1936. L'allevamento del *Reticulitermes lucifugus* in tubi da saggio (Rend. R. Accad. Nazion. d. Lincei, vol. **29**, **9**). — 1937. Allevamenti di *Reticulitermes lucifugus* in provetta (Boll. Soc. Ital. di Biol. Sperim., **12**, **1**). — 1937. Le Termiti nelle nostre Colonie Africane (Atti Soc. Ital. Progresso Scienze, XXV Riunione Tripoli, 1936). — 1938. Il problema delle Termiti nell'Africa Orientale Itamiana (Rivista di Biologia, **25**). — 1953. Simbiosi e filogenesi negli insetti (Trans. Ninth Int. Congr. Ent., **1**).
1930. JUCCI (C.) e BUYA (B. M.). — Sul tessuto adiposo del *Termopsis angusticollis* (Studi Sassaresi, **14**).
1953. JUCCI (C.), SPRINGHETTI (A.). — Evolution of seminal vesicles in Isoptera (Trans. Ninth Int. Congr. Ent., **1**). — 1953. Contributo allo studio delle Termiti in

- Italia per l'impostazione razionale della lotta antitermica I Esplorazione in Sicilia (*Est. dal « Bol. Ist. Pat. Libro »*).
1948. GUIGLIA (D.). — Le vespe d'Italia (*Mem. Soc. Entom. It.*, **27**, 1-83).
1952. SPRINGHETTI (A.). — Le vescicole seminali in *Mastotermes* e in *Macrotermes* (*Rend. Ist. Lombrado*, **85**). — 1953. Le vescicole seminali in *Zootermopsis* e in *Blattella* (*Ist. Lomb. Scien. Sett. Hoepli*).
1952. VENTURI (F.). — Notule Dipterologiche : revisione sistematica del genere *Metopia* Meigen in Italia (*Boll. Entom. Un. Bologna*, **19**).
1943. LARSSON (Sv. G.). — **Myrer, Danmarks Fauna**. Vol. **49**, p. 1-190, 99 fig.

The publication enters as a part of the serie « Danmarks Fauna » and appears in Danish; it is in the main compilatory and contains the following sections: a general morphological and biological summary (45 p.), a systematical summary of the Danish ant-fauna (115 p.), a list of antguests (25 p.) and a very brief bibliography. Outside Scandinavia the book is of great importance as a fauna-list (numbered genera and species).

1943. LARSSON (Sv. G.). — **Myrerne som Bymestre** (*Dyr i Natur og Museum*, 1942-1943, p. 37-53, 14 fig.).

Mainly a referring description of nest-building by the ants, especially under Danish circumstances.

1947. LARSSON (Sv. G.). — **Havemyrens forunderlige Liv** (*Mærkelige Dyr*, København, p. 28-47, 13 fig.).

Mainly a referring description of the biology of *Lasius niger* and *Lasius flavus*. Among the original figures may be emphasized a sketch of a *Lasius flavus*-nest, where a passage from the winter-nest is leading almost vertically through a layer of clay (90 cm) to a narrow water containing layer of gravel, where it expands into a little room.

1938. STELLA (E.). — **Ricerche Citologiche sui neutri e sui riproduttori delle Termiti Italiane** (*Calotermes flavicollis* e *Reticulitermes lucifugus*) (*R. Acad. Naz. Lincei*, **7**, 1-30). — 1939. **Studi sulle Termiti, Comportamento citologico delle gonadi in operai di *Reticulitermes lucifugus*** R. (*Riv. Biol. Col.* **2**, 81-95). — 1939. **Studi sulle Termiti, Alcuni dati citologici sulle gonadi di soldati di *Bellicositermes bellicosus*** (Smeath) (*Riv. Biol. Col.*, **2**, 255-262).

1942. STELLA (E.) e GHIDINI (G. M.). — **Regressione delle gonadi ed evoluzione delle caste sterili nelle Termiti** (*Arch. It. di Anat. ed Embr.*, **47**, 825-831).

1936. IWATA (K.). — **On the habits of *Stizus* and *Bembix* which occur in Japan** [*Kontyu*, **10**, 233 (in Japanese)].

Observations on the habits of *Stizus japonicus*, *S. formosanus* and *Bembix niponica*

1938. IWATA (K.). — **Habits of some bees in Formosa** [(II-IV), *Tr. Nat. Hist. Soc. Formosa*, **28**, 205, 257, 372 (in Japanese)].

Observations on the habits of 3 genera of bees forming a chain of gradual development in sociality, *Xylocopa*, *Ceratina* and *Allodape*. A peculiarity of the last mentioned genus, the common nest cavity without separated cells (Brauns) was confirmed in *Allodape marginata* Sm.

1940. IWATA (K.). — **Decline of wasps and bees' communities** [*Akitsu*, **2**, 170 (in Japanese)].

The communities of solitary but gregarious wasps and bees can increase at first their size, esp. by artificial supply of nest-material. But the reproductive rate of

their parasites is usually much higher than that of the hosts, consequently the communities are in due time destroyed and finally abandoned. Because of the lack of communal defense as found in social Insects, the maintenance of the species-life depends mostly on the migration of certain pioneers from the original communities into other niches.

1942. IWATA (K.). — **Comparative studies on the habits of solitary wasps** (*Tenthredo*, 4, nos. 1-2, 146 p.).

Comparative considerations of habit-types of all the hunting-wasps with respect to the following points: oviposition, kind of prey, operation and transportation of prey, provisioning, nidification, closing and opening of nest entrance. Correlations betw. component-habit system and habit-type system were discussed. Colonization and subsociality were also briefly referred.

1950. IWATA (K.). — **Hypothetic habit-type trees of the aculeate Hymenoptera** [*Techn. Bull. Kagawa Agr. College*, 1, 75 (in Japanese with English résumé)].

Basing upon the treatise in 1942 and some additional knowledges, the habit-formulae for each group of Aculeata were described and shown as habit-type trees.

1951. IWATA (K.), MORIMOTO (R.), YASUMATSU (K.). — See MORIMOTO.

1939. MORISITA (M.). — **On the daily rhythm of activity of ants. I, Activity of *Formica fusca* var. *japonica* Motschulsky** [*Ecol. Rev.*, 5, 105 (in Jap. with English résumé)].

Food-hunting begins in early spring, ends in late autumn and ceases in any season at night in Kyoto. In spring and autumn, activity begins after sunrise and ceases before sunset, while in summer, begins a little before sunrise and ceases a little after sunset. These seasonal differences of activity seem to be caused by the effect of temperature and light. The cessation in summer night is caused by the decrease of light (below ca. 5 lux) and that in spring or autumn by the low temperature of air or soil surface (below 14°-15° C.).

1939. MORISITA (M.). — **On the daily rhythm of activity of ants. II, Activity of *Lasius niger* L.** [*Ecol. Rev.*, 5, 171 (in Jap. with English résumé)].

L. niger is active from early spring to late autumn in Kyoto with the following seasonal differences: In early spring, active only in daytime; in mid-late spring, active also at night though with a less degree; in summer more active at night than in daytime; in autumn natural activity decreases again. Preference of night to daytime can be supposed. Cessation or decrease of the nocturnal activity in spring or autumn seems to be caused by the low temperature, the increase of activity in summer night is caused probably by the high temperature.

1939. MORISITA (M.). — **On the battles between *Tetramorium caespitum* ssp. *jacoti* Wheeler and other species of ants** [*Tr. Kansai Entom. Soc.*, 8 (in Jap. with English résumé)].

Battles betw. *Tetramorium* and *Lasius niger* or *Pristomyrmex pungens* are caused by the attacks of the first sp. After the victory, often *Tetramorium* occupies nests and trees producing honey dew which had been utilized previously by *Lasius*. The battles occur only in summer and are seemingly made to enlarge the territory and to secure the sufficient food supply for the increase of nest members.

1939. MORISITA (M.). — **The interrelations of several species of ants on a tree** [*Tr. Kansai Entom. Soc.*, 9, Pt. 2 (in Japanese)].

Interrelations among *Formica fusca* var. *japonica*, *Lasius niger*, *Crematogaster soridula* ssp. *osakensis*, *Pristomyrmex pungens* on *Carpinus laxiflora* and *Betula ulmifolia* (excl. *Crematogaster*). Behavioral pattern of these ants can be divided into 2 types:

Lasius-and *Formica*-type. 3 spp. belonging to the former type climb up the tree in a procession, occupy the definite branches and attack the intruders. *Formica* forages individually from the branches occupied by *Lasius*-type spp. in the sly of occupants. No attacks of *Formica* to the occupants are observed. Among 3 *Lasius*-type spp., the balance of power varies from day to day. On a *Carpinus*, the former dominant, *Crematogaster*, was driven away by *Lasius*. Equilibrium betw. *L.* and *P.* differs in daytime and at night. At night *P.* is completely driven away by *L.* probably due to the increase activity of *L.*, but *P.* intrudes again into the *L.*-branches in the next morning.

1941. MORISITA (M.). — **On *Camponotus herculeanus* ssp. *vagus* var. *yessensis* [Teranishi, *Mushi*, 13, 93 (in Japanese)].**

Notes on the distribution.

1941. MORISITA (M.). — **An application of the quadrat method to the estimation of the population density of moving animals (1) [Ecol. Rev., 7, 63 (in Jap. with English résumé)].**

Theoretical considerations show that, when a quadrat is prepared in an area, the relation among the mean indiv.-number of an animal sp. in the quadrat (d), mean number of the animals invading into the quadrat per unit time (s) and the mean time for which the animals stay in the quadrat (t) can be represented by $d = st$. The fitness of this formula to the population of *Formica fusca japonica* has been tested in various ways. The results indicate that the formula is good enough to be applied to the pop. of the ant observed and may probably be used for the study of other moving animals.

1945. MORISITA (M.). — **Ants [in H. Furukawa's "Insects", vol. 2, 1-56, Tokyo (in Japanese)].**

A general contribution of ants with the following contents: position of ants in nature and their life mode, species and distribution, habitat and nest, slavery ants. Descriptions are chiefly based upon the Japanese materials.

1945. MORISITA (M.). — **Ants of the southernmost district of Hokkaido [Mushi, 16, 21 (in Japanese)].**

List of 24 spp. from the district. Affinity of myrmecofauna betw. southern Hokkaido and northern Honshû was suggested.

1933. YASUMATSU (K.). — **On a new variety of *Psithyrus sylvestris* (Lepeltier) from Corea [Ins. World, 34, 41 (in Jap. with English résumé) var. *popovi* nov.].**

1934. YASUMATSU (K.). — **Eine neue, *Bombus ignitus* Smith ähnliche Schmarotzerhummel aus Korea (Hym., Bombidae) [Ann. Zool. Jap., 14, 399, *Psithyrus* (*Ashtonips*) *coreanus* sp. nov.].**

1934. YASUMATSU (K.). — **On the male of *Bombus bicoloratus* Smith (Hym., Bombidae) (Tr. Nat. Hist. Soc. Formosa, 34, 135).**

1934. YASUMATSU (K.). — **Les Hyménoptères de l'île Yakushima (Mushi, 7, 61).**

Notes sur distribution de quelques espèces de *Bombus* et *Vespidæ*.

1935. YASUMATSU (K.). — **Superfamily Apoidea, Insects of Jehol VIII, Order Hymenoptera, 2, 47 p. (Rep. First Sci. Exped. Manchukuo, 5, 1, 12, 67).**

Records of 7 spp. of *Bombus* including *B. (Lapidariob.) jeholensis* sp. nov.

1935. YASUMATSU (K.). — **Notes on two Apoidea collected by Prof. Tohru Uchida on the Mariana and West Caroline Islands (Mushi, 8, 94).**

Melipona (Trigona) atome Ckll. from Palau Is.

1935. YASUMATSU (K.). — **Further notes on the hymenopterous fauna of the Yaeyama group (Ann. Zool. Jap., 15, 33).**

Records of *Ropalidia variegata*, *Vespa formosana* and *Polyrhachis dives* in Yonakuni Is, *Polistes yæyamensis* in Haderuma Is.

1937. YASUMATSU (K.). — *Lasius fuliginosus* (Latreille) var. *spathepus* Wheeler and its synechthrans, *Zyras comes* Sharp and *Zyras cognatus* Märkel var. *japonicus* Sharp [*Nippon no Kôtyû*, 1, 47 (in Jap.)].

List of *Zyras* spp. attacking *Lasius fuliginosus* and an observation on the behaviour of mentioned Staphylinids. These two spp. were found abundantly in a procession of the host ant. The injured ants were immediately attacked by them.

1937. YASUMATSU (K.). — **Hymenoptera of Tsushima (First Report)**, Fukuoka Hakubuts [*Zasshi*, 2, 59 (in Japanese)].

Including notes on social Insects.

1938. YASUMATSU (K.). — **On the larva of *Allodape marginata* Sm.** [*Tr. Nat. Hist. Soc. of Formosa*, 28, 380 (in Japanese)].

Description of external characters.

1939. YASUMATSU (K.). — **On the occurrence of the Genus *Psithyrus* Lepeltier in Honshû, Japan (Hym., Bombidæ)** [*Konchû-Kenkyû*, 3, 18 (in Jap. with English résumé)].
Ps. (Fernaldaeps.) norvegicus japonicus spp. nov.

1939. YASUMATSU (K.). — **Notes on some species of the Genus *Psithyrus* Lepeltier from Korea (Hym., Bombidæ)** [*Tr. Kansai Entom. Soc.*, 9, Pt. 2 (in Japanese)].

Records of 4 spp. including *Ps. (Ps.) branickii doii* spp. nov.

1939. YASUMATSU (K.), BEQUAERT (J.). — **Vespoidea of Micronesia (Hym.) (*Tenthredo* 2, 314).**

Records of *Polistes olivaceus*, *P. semiflavus*, *Ropalidia marginata* v. *sundaica*.

1940. YASUMATSU (K.). — **Contribution to the hymenopterous fauna of Inner Mongolia and North China** (*Tr. Sapporo Nat. Hist. Soc.*, 17, 90).

Records of ants (2 spp.) and bumblebees (5 spp.) with *Bombus (Subterraneob.) chaharensis* sp. nov.

1940. YASUMATSU (K.). — **Hymenoptera collected in Tadao Kano's Expeditions to Botel-Tobago Island. IV, Vespidae, Larridae and Chrysididae** (*Tr. Sapporo Nat. Hist. Soc.*, 16, 96).

Records of *Vespa* (3 spp.) and *Polistes* (2 spp.).

1940. YASUMATSU (K.). — **Beitrage zur Kenntnis der Ameisenfauna Mikronesiens. I. Die Ameisengattung *Anochetus* Mayr der Karolinen** (*Ann. Zool. Jap.*, 19).

A. (A.) minutus Karawajew u. *A. (A.) splendidulus* sp. nov., mit biologischen Notizen von Prof. T. Esaki.

1940. YASUMATSU (K.). — **Matériaux pour servir à la faune myrmécologique des îles de Yaeyama** (*Mushi*, 13, 67). — 1940. **Ants collected by Mr. H. Takahasi in Hingan (Hsingan) North Province, North Manchuria (Hym., Formicidae)** [*Tr. Sapporo Nat. Hist. Soc.*, 31, 182 (in Japanese)].

1941. YASUMATSU (K.). — **On the ants of the genus *Dolichoderus* of Angaran element from the Far East (Hym., Formicidae)** [*Kontyû*, 14, 177 (in Japanese)].

D. quadripunctatus sibiricus Emery was recognized as a single representative of the genus in the Far East.

1945. YASUMATSU (K.). — **Vespoidea of Micronesia, II (Hym.)** (*Mushi*, 16, 35).

On *Ropalidia marginata sundaica*.

1946. YASUMATSU (K.). — **An observation of the soil fauna beneath the nest of *Vespa mandarina* Smith in a tree-hollowa : quantitative study of the macroscopic fauna** [*Matsumushi*, 1, 1 (in Japanese)].

Interspecific relationships of the inhabitants consisting of 37 spp. were analysed in connection with the food-chain among them. A remarkable biological richness of the environment examined was discussed.

1946. YASUMATSU (K.). — *Hymenoptera Aculeata* collected by Mr. K. Tsuneki in North China and Inner Mongolia. III, *Apoidea*, 1 (*Mushi*, 17, 19).

Records of 2 spp. of *Bombus*.

1947. YASUMATSU (K.). — Some wasps and bees of the desert Kunshan-Tagh in Inner Mongolia (*Mushi*, 18, 29).

Records of 2 spp. of *Bombus*.

1948. YASUMATSU (K.). — *Ants and human life* [XI + 199p., Tokyo (in Japanese)]. With an introductory by T. ESAKI.

A review on the relationships betw. ants and various aspects of human life.

1948. YASUMATSU (K.). — *Distribution of Ants* [*Kyôdo Shizenkagaku no Kenkyû*, 1, Mountain and Plateau, 185 (in Japanese)].

A review on the distribution of ants, including the following items : 1. Phylogeny ; 2. Mode of distribution ; 3. Geographical distr. ; 4. Vertical distr. ; 5. Ecological distr. ; 6. Population density.

1949. YASUMATSU (K.). — *Synonymy and other taxonomic notes on the two commonest tumble bees of eastern Asia* (*Ins. Mats.*, 17, 17).

B. (Pratob.) ignitus Smith and *B. (B.) speciosus* Smith were discussed.

1950. YASUMATSU (K.). — *Discovery of an ant of the genus Lordonyrma Emery in Eastern Asia (Hym.)* (*Ins. Mats.*, 17, 73).

Discussion of the genus, esp. on the distribution and description of *L. nobilis* sp. nov. from Japan.

1951. YASUMATSU (K.). — *Bombus and Psithyrus of Shansi, N. China* (*Mushi*, 22, 59).

3 spp. of *Psithyrus* and 7 spp. of *Bombus* were recorded. 9 of which were new to Shansi.

1951. YASUMATSU (K.), MORIMOTO (R.), IWATA (K.). — See MORIMOTO.

1951. YASUMATSU (K.), BROWN (W. L. Jr.). — *On the publication date of Polyhomoea itoi Azuma* (*Mushi*, 22, 93).

Kydris mutica Brown, *P. itoi* Azuma syn. nov.

1951. YASUMATSU (K.), BROWN (W. L. Jr.). — *Revisional notes on Camponotus herculeanus Linné and close relatives in Palaearctic region (Hym., Formicidae)* (*J. Fac. Agr., Kyushu Univ.*, 10, 29).

Eurasian spp. were revised as follows: *C. h. herculeanus*, *C. h. japonicus*, *C. igniperda*, *C. o. obscuripes*, *C. o. hemichlana* spp. nov., *C. yessensis*, *C. formosensis*, *C. vagus* with spp. inquirendæ: *C. punctatissimus*, *C. cilicicus*, *C. vagus* var. *kodorica*, *C. herc. eudokiae*.