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Nomada comparata Cockerell and its allied species,
Nomada hananoi n. sp. from S. Manchuria
 (Hymenoptera, Apidae)

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Nomada comparata Cockerell was described as a variety of *N. maculifrons* Smith, but has never been compared with *maculifrons*, and the male remains still undescribed or unrecorded. Dr. Cockerell wrote in his original paper that "this is perhaps a distinct species, but as it is evidently close to *N. maculifrons*, and I have not been able to compare specimens; I leave it for the present as a variety." The abdominal coloration and pattern as well as the facial maculation of *comparata* show a rather close resemblance to those of *maculifrons*, but the sculpture of the former is so different from the latter that *comparata* must be regarded as a distinct species.

N. comparata Cockerell, in its sculpture, shows closer affinity to the European *fulvicornis* Fabricius than it does to any Japanese species. It is of interest, however, that these two species are so obviously different from each other in respect to their coloration that superficially they bear no resemblance the one to the other.

The present paper has been prepared to separate *comparata* from *maculifrons* and to describe a new species of the same group from S. Manchuria.

Before going further, the authors wish to express their appreciation to Professor Teiso Esaki for his constant interest and kind guidance. The authors also express their gratitude to the authorities and especially to Dr. Lucien Berland of the Paris Museum for lending them a specimen of *comparata* in the Gallois' collection, and to Dr. Chihisa Watanabe of Hokkaido University for the loan of some specimens in the collection of the Entomological Institute of the University. Thanks are also due

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Nomada comparata Cockerell

1911. *Nomada maculifrons* var. *comparata* Cockerell, Proc. U. S. Nat. Mus., 39 : 644-645, ♀.

Female. 9-13mm. long. Head largely ferruginous, rarely largely black. Broad patches on the sides of face, malar spaces, rather broad bands along the outer orbits of eyes yellow. Labrum yellow or ferruginous. Supra-clypeal area ferruginous, often largely yellow in the middle, rarely all black. Mandibles and clypeus ferruginous. The lateral yellow patch on the face is variable in shape or extent, broadest on the lower part of paraocular area, tapering above along nearly the whole length of the inner orbit of an eye, but occasionally not beyond the level of antennae; inner margin of the yellow facial patch ferruginous, but the margin very faint or evanescent or rarely discolored below the level of antennae, the upper half of the margin broader and readily noticeable, the upper end distinctly and broadly enlarged mesad, rounded; the yellow facial marking so variable in its extent that the face is often bicolored on each side, ferruginous above and yellowish beneath when the yellow marking is greatly reduced; or it may be better to describe the face as broadly ferruginous on each side along the inner orbits of the eyes, the upper part of the maculation is rounded mesad, the median part is broadly emarginate at the inner margin, the lower part is the broadest and suffused with yellow, and the yellow marking is very often enlarged above along the inner orbit of an eye. Cheeks broadly black behind. Rather broad posterior margin of the yellow bands along the outer orbits of eyes ferruginous, but often the ferruginous margin along the yellow band enlarged posteriorly. Antennae of moderate size, ferruginous, rarely scape narrowly blackened above and rarely flagellum obscurely darkened above; segment 3 a little longer than wide, about two-thirds the length of segment 4. Mandibles simple, robust, rather long, with the tip not sharply pointed. Labrum with a robust, subtriangular process apically. Clypeus coarsely punctured, nearly as in *fulvicornis*.

Thorax largely ferruginous, rarely largely black. Mesonotum black, with four ferruginous lines, the lateral lines narrow but the median two very broad, in some cases it is more accurate to describe the mesonotum as ferruginous with three black lines, rarely is the mesonotum predominantly black with four narrow and

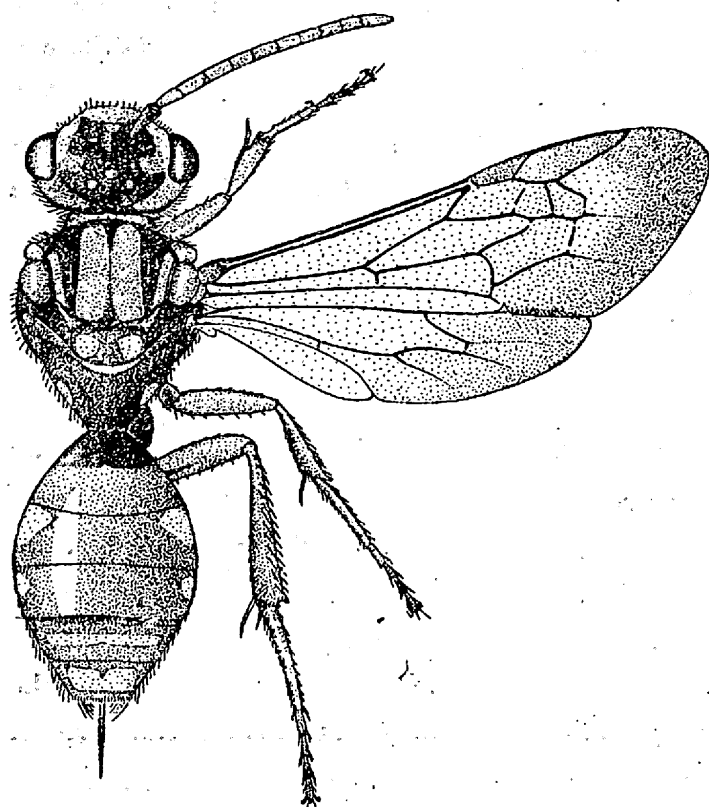


Fig. 1 *Nomada comparata* Cockerell, 1911, female.

evidently narrowed above; vein M far basad vein cu-y. Tegulae ferruginous.

Legs red, all trochanters broadly black, rarely hind femora with a black line behind; the apex of hind tibiae with two robust spines, as in *fulvicornis*, which are almost contiguous and thus often appear, at first sight, as a robust subtriangular process.

Abdomen ferruginous; tergite 1 with the basal half black, rarely with small yellow patches on each side; tergite 2 with the basal margin narrowly black, each of the following tergites with the base broadly black or blackish; tergites 2 and 3 with round yellow patches laterally, patches on tergite 3 smaller, but rarely greatly enlarged mesad, thus forming an interrupted band on tergite 3; tergite 4 with a yellow band, which is broadly interrupted sublaterally and rarely narrowly interrupted in the middle; tergite 5 with a quadrate yellow patch, the basal margin of the patch is notched in the middle or rarely the patch separated in the middle of the tergite. Sternites 3 and 4 each with a yellow band or lateral patches.

Head and thorax with hairs moderately long and dense, rather uniformly fulvous, but propodeum with hairs longer and slightly whitish.

Male. 8—11mm. long. The coloration of head and thorax similar to that of *fulvicornis* except that the tegulae are ferruginous in the present species. Head and thorax black; mandibles except dark red apices, labrum, clypeus, supra-clypeal

evanescent ferruginous lines.

Mesopleura black with a broad ferruginous patch, rarely almost entirely ferruginous, or rarely with a yellow patch at the centre of the ferruginous portion. Propodeum black with lateral patches (not large) ferruginous or rarely yellow, rarely propodeum all black. Mesonotum densely and coarsely punctured without impunctate interspaces. Scutellum well convex, distinctly bigibbous, punctures on the gibbosities very large and irregularly scattered, scutellum otherwise coarsely rugoso-punctate.

Wings brownish hyaline with the apex darkened, stigma and nervures dark ferruginous; 2nd submarginal cell broader than 3rd,

area, malar space, broad patches on the sides of face, bands along the posterior orbits of eyes, pronotum, tubercles, spots on the gibbosities of scutellum, a spot on metanotum and a large patch on mesopleura all yellow; rarely the base of clypeus, supra-clypeal area, pronotum and metanotum black. Antennae not especially long; scape moderately swollen, black above, yellow beneath, rarely ferruginous beneath with a narrow yellow line; flagellum ferruginous, six basal segments broadly black above; flagellar segments weakly but broadly convex outwards; segment 3 a little longer than wide, about two thirds the length of segment 4. Wings and the sculpture of head and thorax as in the female.

Legs ferruginous, all femora black behind, hind femora broadly so, fore femora and tibiae yellow anteriorly or at least with yellow spots at the apex; hind femora with less than basal half distinctly concave behind, the surface of the depression densely covered with short, nearly appressed, whitish hairs; hind trochanters fringed with long, dense, whitish hairs beneath, the tufts and hairs on the depression of hind femora shining and golden in coloration seen in certain aspect; the apex of hind tibiae with two spines and a long slender spine apart from the former.

Abdomen ferruginous, tergite 1 with the basal half black, and rarely with small yellow spots on each side; the following tergites narrowly or rarely broadly black at the base; tergite 2 with broad, rounded yellow patches laterally, the following tergites each with a yellow band, but the band on tergite 3 becoming narrow and linear at the middle of the tergite or broadly interrupted; apical plate broad, deeply notched.

Head and thorax with hairs moderately long and dense, rather uniformly pale fulvous, but mesopleura and propodeum with the hairs whitish.

Specimens examined: **Hokkaido** — Mt. Moiwa, Sapporo, 1 ♂, 22. v. 1930, K. Koguchi leg.; Shimizusawa, Prov. Isikari, 1 ♀, 18. v. 1934, M. Sato leg. **Honshu** — Amami, Osaka, 1 ♀, 22. v. 1938, S. Tamazawa leg.; Atsumimura, Prov. Uzen, 1 ♀, 8. vi. 1946, Y. Kurosawa leg.; Mt. Fukiya, Prov. Iwashiro, 1 ♂, 22. v. 1946, Y. Kurosawa leg.; Mt. Kinpoku, Sado, 1 ♂, 23. v. 1933, K. Baba leg.; Kobotoke Pass, Prov. Musashi, 1 ♀, 17. v. 1949, R. Ishikawa, leg.; Kurakawa, Prov. Iwashiro, 1 ♀, 30. v. 1946, Y. Kurosawa leg.; Minoo, Prov. Settsu, 1 ♀, T. Esaki leg.; Mikimachi, Prov. Harima, 2 ♂♂ (one is allotype), 2 ♀♀, 21. v. 1931, S. Yamada leg.; Numazu, Prov. Suruga, 1 ♂, 13. iv. 1928, K. Sato leg.; Oshima Island, Prov. Izu, 1 ♀, 21. v. 1932, S. Yamamoto leg.; Takao, Prov. Musashi, 1 ♀, 10. vi. 1916, Edme Gallois leg. (in the collection of the Paris Museum); Tarumi, Prov. Harima, 1 ♀, 19. v. 1931, S. Yamada leg.; Yokohama, 2 ♂♂, 27. iv. 1929, K. Sato leg. **Shikoku** — Okawa, Prov. Tosa, 1 ♀, 30. vi. 1934, H. Okamoto leg. (in the collection of the Ent. Inst., Hokkaido Univ.). **Kyushu** — Aburayama, Prov. Chikuzen, 1 ♀, 19. iv. 1936, K. Yasumatsu leg.; Hikosan, Prov. Buzen, 2 ♂♂, 11. v. 1951, Y. Hirashima leg.; Mt. Kinpo, Prov. Higo, 1 ♀, 2. v. 1949, Y. Hirashima leg.; Kumamoto, 1 ♀, 1. v. 1949, Y. Hirashima

leg.; Takamiya, Fukuoka, 1 ♂, 9. iv. 1950, T. Shiraki and Y. Hirashima leg.; Wakasugiyama, Prov. Chikuzen, 1 ♂, 1 ♀, 8. iv. 1930, K. Yasumatsu leg., 1 ♀, 3. v. 1931, T. Esaki and others leg.

Habitat: Japan (Hokkaido, Honshu including Sado and Oshima Islands, Shikoku and Kyushu).

Nomada hananoi n. sp.

Female. Closely allied to *N. comparata* Cockerell and may belong to the same group.

Head broadly ferruginous, marked with yellow and black. A large, more or less rounded, median patch on the ferruginous clypeus, supra-clypeal area, broad patches on the sides of face, malar spaces and bands along the outer orbits of eyes yellow. Labrum yellowish ferruginous. The lateral yellow patch on the face broader than that of *comparata*, nearly subtriangular below the level of antennae, more or less similar to that of *fulvicornis*, but the upper part from the level of antennae linear. Face with a median, more or less transverse, broad black patch that encloses the yellow supra-clypeal area and extends downwards as narrow and short branches to the sides of clypeus (as in *comparata*); the black patch joins a black, transverse patch on the vertex (which encloses the ocelli) just below the middle ocellus; the connecting

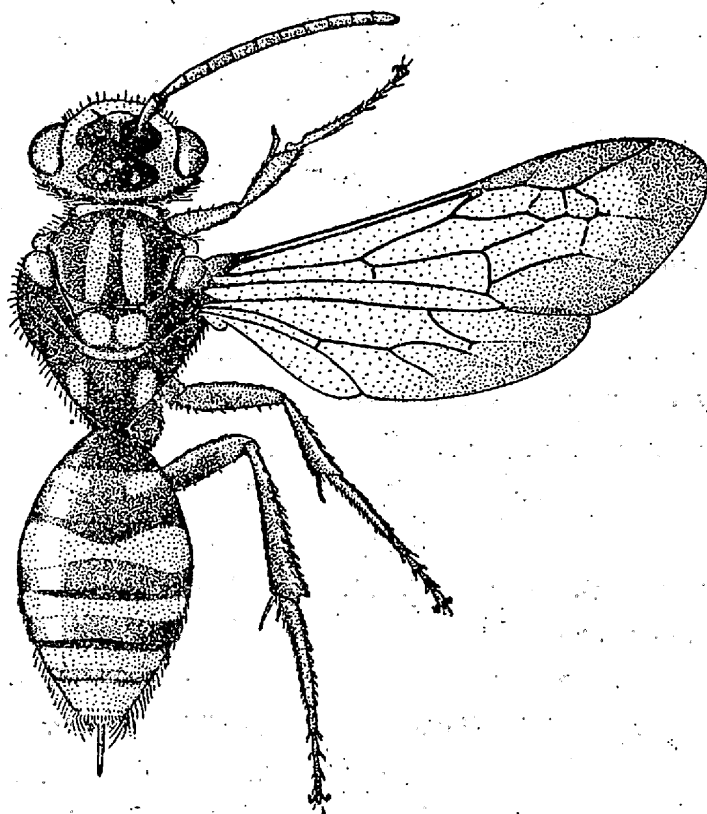


Fig. 2 *Nomada hananoi* n. sp., female.

portion being narrow, about one-third the width of the face. Cheeks with coloration similar to that of *comparata*, but more broadly black behind. Vertex with a narrow ferruginous band behind the black patch. Occiput black. Antennae ferruginous above and below including scape; segment 3 longer than wide, about two-thirds the length of segment 4; segments 5 to 8 longer than wide, segments 9 to 11 about as long as wide. Mandibles ferruginous, simple, with the tip more or less acute. Clypeus punctured as in *comparata*.

Thorax broadly black. Pronotum, tubercles, scutellum (but narrowly separated in the middle), metanotum, a large patch on each side of propodeum and a small spot on the anterior part of mesopleura yellow. Four lines on the mesonotum (median two lines are very broad), tegular, a broad patch on mesopleura and the narrow margin of the yellow patches on propodeum ferruginous. Mesonotum punctured quite as in *fulvicornis*. Scutellum distinctly convex, bigibbous, punctured as in *fulvicornis* but closer than in *comparata*.

Wings as in *fulvicornis* and *comparata*.

Legs ferruginous, all trochanters broadly piceous, hind femora broadly black behind; the apex of hind tibiae with the structure similar to that of *fulvicornis* or *comparata*.

Abdomen ferruginous; tergite 1 with the basal half black, and with transverse yellow patches on the sides subapically; the following tergites each with a broad and entire yellow band, the band on tergite 2 narrowed in the middle, especially broadly and rather deeply emarginate basally. Sternite 2 with lateral yellow patches, the following sternites each with a broad yellow band.

Length about 9.5 mm., fore wing about 7.8 mm.

Holotype ♀, Liangshuisze (Ryosuiji), Dalny, S. Manchuria, 24. v. 1936, M. Hana-no leg.

The yellow coloration of the abdomen shows close resemblance to that of *fulvicornis*, but the present new species is easily distinguishable from the latter by the smaller size and the ferruginous maculations on the head, thorax and abdomen. The appearance of the head and thorax also shows close resemblance to that of *comparata*, but the abdominal maculation differs distinctly from that of the latter.

近畿支部第4回大会

近畿支部では徳永雅明評議員を準備委員長として、下記により第4回大会を開催することになった。陽春の候、同地区会員の多数参会の下に盛大に行われるよう希望する。

1. 時——昭和 27 年 5 月 11 日 (日曜日) 午前 9 時より
2. 所——京都市左京区下鴨半木町・西京大学農学部
3. 講演——4 月末日までに到着するよう申込のこと
4. 大会費——50 圓

なお講演終了後、西京大学農学部会議室で、懇親会 (会費 100 圓の豫定) が開催される。

申込は京都市左京区京都大学農学部昆虫学教室内 昆虫学会近畿支部 宛