

## FIVE NEW SPECIES OF *NESOSELANDRIA* ROHWER (HYMENOPTERA: SELANDRIINAE) FROM INDIA

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### ABSTRACT

Five new species of the genus *Nesoselandria* Rohwer are added to science from India. The taxonomic validity of these species has been supported by descriptions of morphology and genitalia, illustrations and detailed discussion.

### KEYWORDS

*Hymenoptera*, *India*, *Nesoselandria bengali* sp. nov., *N. fuscitarsus* sp. nov., *N. iari* sp. nov., *N. icar* sp. nov., *Selandriinae*

### ABBREVIATIONS

EL - Eye length; IATS - Inner apical tibial spur; ICD - Inter cenchri distance; IDMO - Interocular distance at level of median ocellus; ITD - Inter tegular distance; LID - Lower interocular distance; MB - Metabasitarsus; OATS - Outer apical tibial spur; OCL - Oculooccipital line; OOL - Oculocellar line; POL - Postocellar line.

Rohwer (1910) erected the genus *Nesoselandria* taking *Paraselandria imitratix* Ashmead as its type species from Phillipines. Again Rohwer (1915) added a new species to this genus from Calcutta, India. Malaise (1944) shifted *Aneugmenus anandalei* Rohwer and *Neobusarbia flavipes* Takeuchi to this genus. Benson (1939) erected a new genus *Melisandra* taking *Selandria morio* (Fabricius) as its type species from Holarctic region, but Smith (1969) synonymized it under *Nesoselandria* Rohwer. Malaise (1944) made two additions -- *Nesoselandria sulciceps* from Dehradun and *N. turneri* from Shillong. Some of the other important works concerning this genus from the oriental region include those of Enslin (1912), Rohwer (1916), Takeuchi (1928), and Forsius (1929, 1931a, 1931b, 1932, 1933), prior to which this genus was represented only by 22 species from this region. Only four species were on record from the Indian subcontinent. Following these contributions Saini and Vasu (1999), Vasu and Saini (1999a, 1999b), and Saini *et al.* (2001) added several new species to science under this genus from the Indian subcontinent. This genus is now represented by 25 species from India that includes the dealt herein five new species collected from the Himalayan region of northern and northeastern states. The present text deals with the descriptions and illustrations of the new species in question. The species are described following a standardized uniform pattern defined for the selandrine sawflies. Illustrations pertaining to genitalia and other morphological characters of taxonomic importance are provided. The host plants of these species remain unknown.

The genus *Nesoselandria* Rohwer is defined by a set of characters that follows: front wings with two radial and three or four cubital cells basalis and 1<sup>st</sup> recurrent vein strongly converging; nervulus at apical third of cell; anal cell without crossvein. Hind wings with two closed middle cells and anellan

cell mostly petiolate at the apex. Malar space linear to half diameter of median ocellus: Clypeus truncate to very shallowly emarginated; frontal area mostly poorly or not defined, subconvex; antennal furrows reduced to isolated lateral pits, sometimes transverse and communicating by a groove from one eye to the other; antennae slender, mostly filiform sometimes faintly incrassated in middle, pedicel slender, almost as long as scape; 3<sup>rd</sup> antennal joint longer than 4<sup>th</sup> one; claws with acute but shorter basal lobe sometimes difficult to notice subapical tooth almost as long as or shorter than apical one.

The terminology used in this text is after Ross (1937, 1945) and Malaise (1945). The type materials of these species are housed at Division of Entomology, Pusa National Collections, Indian Agricultural Research Institute, New Delhi, India.

### *Nesoselandria fuscitarsus* sp. nov.

(Figs. 1-5)

#### Material examined

Holotype: Female, 05.ix.1993, Elephant Falls, Meghalaya, 1500m, coll. V. Vasu.

Paratype: One female, 05.ix.1993, Elephant Falls, Meghalaya, 1500m, coll. V. Vasu; one female, 10.v.1986, Ranipool, Sikkim, 1600m, coll. M.S. Saini.

#### Individual variation

All specimens alike.

#### Distribution

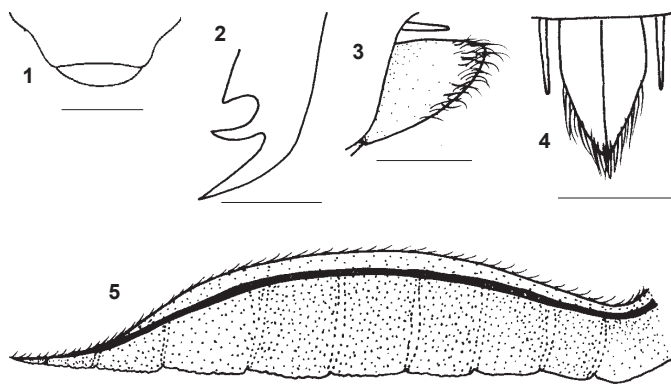
India: Meghalaya, Sikkim.

#### Etymology

Species is named after its fuscous tarsi.

#### Diagnostic features

Black colour of tegula and abdomen with some tergites yellowish bring *N. fuscitarsus* sp. nov. close to *N. rufiventris* Rohwer. However, they can be set aside as malar space 1.0x diameter of median ocellus (0.75x in latter), postocellar area wider than long as 2:1 (3:2 in latter), abdominal segments 2-5 aureate (abdomen entirely yellowish in female and basal six segments in male in latter), interocellar furrow absent (distinct in latter) and circumocellar furrow indistinct (distinct in latter). And also based upon the following combination of characters such as: labrum wider than long as 2:1, mesoscutellum almost flat metabasitarsus longer than following three joints combined as 4:3, ICD:ITD = 1:6, malar space 1x diameter of median ocellus, lateral furrows indistinct, and postocellar area wider than long as 2:1, *N. fuscitarsus* remains distinct from all other species



**Figures 1-5. *Nesoselandria fuscitarsus* sp. nov.**  
1 - Clypeus and labrum; 2 - Tarsal claw; 3 - Lateral view of ovipositor sheath; 4 - Dorsal view of ovipositor sheath; 5 - Lancet. Scale = 0.5mm

described under this genus.

#### Female:

**Colour:** Body black, aureate are: tergites 2-5, sternites 2-5, all legs except infuscated extreme bases of coxae, apical rings of tibiae and tarsi. Wings hyaline, venation including costa, subcosta and stigma fuscous.

**Structure:** Length 6.0mm. Antenna 1.8x head width, scape equal to pedicel, segments three and four as 3:2; clypeus (Fig. 1) almost truncate, labrum (Fig. 1) broader than long as 2:1 with roundly pointed anterior margin; malar space 1x diameter of median ocellus; LID:IDMO:EL = 1.0:1.3:0.9, POL:OCL:OOL = 1.0:1.3:1.0; supraantennal pits deep and round, area between them smooth; frontal area flat, above level of eyes; median fovea in form of deep, oval pit above supraclypeal area; post and interocellar furrows absent, circumocellar furrows distinct; lateral furrows indistinct; postocellar area wider than long as 2:1; head parallel behind eyes; mesoscutellum almost flat, appendage ecarinate; ICD:ITD = 1.0:6.0; epicnemium separated from mesopleuron by fine furrow, tarsal claw (Fig. 2) with subapical tooth shorter than apical one, basal lobe distinct; metabasitarsus distinctly longer than following 3 joints combined as 4:3, IATS:MB:OATS = 1.0:2.6:0.9. Ovipositor sheath as in Fig. 3 (lateral view), Fig. 4 (dorsal view). Lancet (Fig. 5) having nine serrulae.

**Sculpture:** Body impunctate, shining.

**Pubescence:** Fuscous, 0.3x scape length.

**Male:** Yet to be discovered.

#### *Nesoselandria maculipoda* sp. nov.

(Figs. 6-10)

#### Material examined

**Holotype:** Female, 02.v.1992, Elephant Falls, Meghalaya, 1500m, coll. V. Vasu.

**Paratype:** One female, 02.v.1992, Elephant Falls, Meghalaya, 1500m, coll. V. Vasu.

#### Individual variation

Both specimens alike.

#### Distribution

India: Meghalaya.

#### Etymology

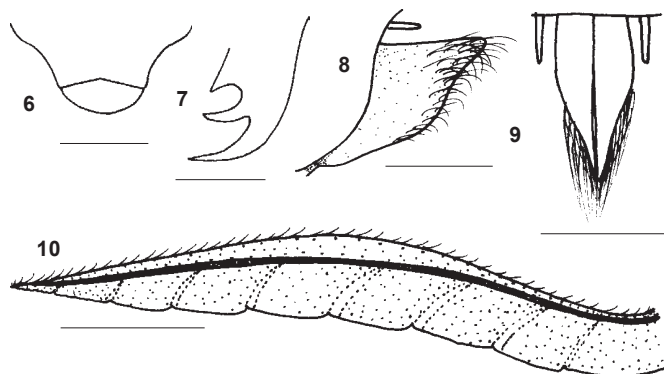
Species name alludes to its spotted legs.

#### Diagnostic features

The characters separating *N. maculipoda* sp. nov. from its allied species *N. rufiventris* Rohwer are femora, tibiae and basitarsi distinctly infuscated or reddish (entirely aureate in latter), postocellar area wider than long as 2:1 (3:2 in latter), tergites 3-5 and sternites 2-6 aureate (abdomen entirely yellowish in female and basal six segments in male in latter), frontal area flat (faintly depressed in latter), inter and circumocellar furrow fine (distinct in latter) and antennal segments three and four as 4:3 (3:2 in latter). And also based upon the following combination of characters such as: labrum wider than long as 2:1, mesoscutellum almost flat, metabasitarsus longer than following three joints combined as 4:3, ICD:ITD = 1.6, malar space 1x diameter of median ocellus, lateral furrows indistinct, and postocellar area wider than long as 2:1, this species viz., *N. fuscitarsus* remains all distinct from all other species described under this genus.

#### Female:

**Colour:** Body black, aureate are: tergites 3-5, sternites 2-6. Legs brownish-yellow to fuscous, aureate are: all trochanters and adjoining parts of coxae, mesofemur. Wings hyaline, venation including costa, subcosta and stigma fuscous.



**Figures 6-10. *Nesoselandria maculipoda* sp. nov.**  
6 - Clypeus and labrum; 7 - Tarsal claw; 8 - Lateral view of ovipositor sheath; 9 - Dorsal view of ovipositor sheath; 10 - Lancet. Scale = 0.5mm

**Structure:** Length 4.0mm. Antenna 1.6x head width, scape equal to pedicel, segments 3 and 4 as 4:3; clypeus (Fig. 6) shallowly emarginate, labrum (Fig. 6) broader than long as 3:2 with deflexed, rounded anterior margin, malar space 0.75x diameter of median ocellus, LID:IDMO:EL = 1.0:1.2:0.9, POL:OCL:OOL = 1.0:1.1:1.0; supraantennal pits deep and round, area between them smooth; frontal area flat, above level of eyes; median fovea in form of deep, transverse pit above supraclypeal area; postocellar furrow absent, inter and circumocellar furrows fine; lateral furrows fine, bulging medially and reaching hypothetical hind margin of head; postocellar area wider than long as 2:1; head narrowing behind eyes; mesoscutellum subconvex, appendage ecarinate; ICD:ITD = 1.0:5.0; epicnemium separated from mesopleuron by fine furrow; tarsal claw (Fig. 7) with subapical tooth shorter than apical one, basal lobe minute; metabasitarsus distinctly longer than following three joints combined as 4:3, IATS:MB:OATS: = 1.0:2.8:0.9. Ovipositor sheath as in Fig. 8 (lateral view) and Fig. 9 (Dorsal view), Lancet (Fig. 10) having eight serrulae.

**Sculpture:** Body almost impunctate, shining.

**Pubescence:** Fuscous, 0.4x scape length.

**Male:** Yet to be discovered.

***Nesoselandria icar* sp. nov.**

(Figs. 11-17)

**Material examined**

**Holotype:** Female, Manipur; Ukhrul, 1700m, 19.v.1992, coll. V. Vasu.

**Paratype:** Two males, 11.v.1993, Mirik, West Bengal, 1700m, coll. M.S. Saini.

**Individual variation**

All specimens alike.

**Distribution**

India: Manipur, West Bengal.

**Etymology**

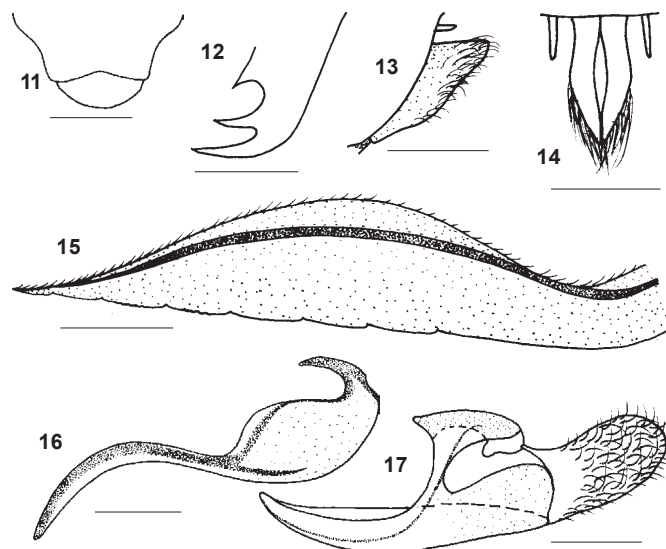
Species name is derived as an arbitrary combination of letters from the funding agency, Indian Council of Agricultural Research.

**Diagnostic features**

The characters such as: tegula, tergites 2-5 and sternites 2-6 aureate; segments three and four as 3:2; clypeus shallowly emarginate; malar space linear; POL:OCL = 1.0:0.8; frontal concave, above level of eyes; post and interocellar furrows absent; postocellar area wider than long as 2:1; ICD:ITD = 1.0:4.0; pubescence aureate and 0.4x scape length, set the species in question *N. icar* sp. nov. distinctly far apart from all the species described under this genus.

**Female:**

**Colour:** Body black, aureate are: tegula 2-5, tergites 2-5, sternites



**Figures 11-17. *Nesoselandria icar* sp. nov.**  
11 - Clypeus and labrum; 12 - Tarsal claw; 13 - Lateral view of ovipositor sheath; 14 - Dorsal view of ovipositor sheath; 15 - Lancet; 16 - Penis valve; 17 - Gonoforceps.  
Scale = 0.5mm

2-6; all legs except infuscated apical three tarsal joints of mesolegs, and apical four tarsal segments including extreme apex of basitarsus of metalegs. Wings hyaline, venation including costa, subcosta and stigma fuscous.

**Structure:** Length 5.0mm. Antenna 1.7x head width, scape equal to pedicel, segments three and four as 3:2; clypeus (Fig. 11) Shallowly emarginate, labrum (Fig. 11) broader than long as 3:2 with rounded anterior margin; malar space linear; LID:IDMO:EL = 1.0:1.4:1.2, POL:OCL:OOL = 1.0:0.8:1.0; supraantennal pits deep and round, area between them smooth; frontal concave above level of eyes; median fovea in form of shallow depression above supraclypeal area; post and interocellar furrows absent, circumocellar furrows fine, lateral furrows distinct, bulging medially and ending just before hypothetical hind margin of head; postocellar area wider than long as 2:1; head narrowing behind eyes; mesoscutellum subconvex; appendage ecarinate; ICD:ITD = 1.0:4.0; epicnemium separated from mesopleuron by fine furrow; tarsal claw (Fig. 12) with subapical tooth shorter than apical one, basal lone minute; metabasitarsus longer than following three joints combined as 5:4; IATS:MB:OATS: = 1.0:3.0:0.9. Ovipositor sheath as in Fig. 13 (lateral view), Fig. 14 (dorsal view). Lancet (Fig. 15) having seven serrulae.

**Sculpture:** Body almost impunctate, shining.

**Pubescence:** Aureate, 0.4x scape length.

**Male:** Average length 4.5mm. Similar to female. Genitalia: Penis valve (Fig. 16) gonoforceps (Fig. 17).

***Nesoselandria bengali* sp. nov.**

(Figs. 18-24)

**Material examined****Holotype:** Female, 11.v.1993, Mirik, West Bengal, 1600m, coll. V. Vasu.**Paratypes:** One female, one male, 11.v.1993, Mirik, West Bengal, 1600m, coll. V. Vasu; one female, 26.v.1989, Darjeeling, West Bengal, 2200m, coll. M.S. Saini; one female, 13.v.1994, Pfutsero, Nagaland, 2100m, coll. V. Vasu.**Individual variation**

All specimens alike.

**Distribution**

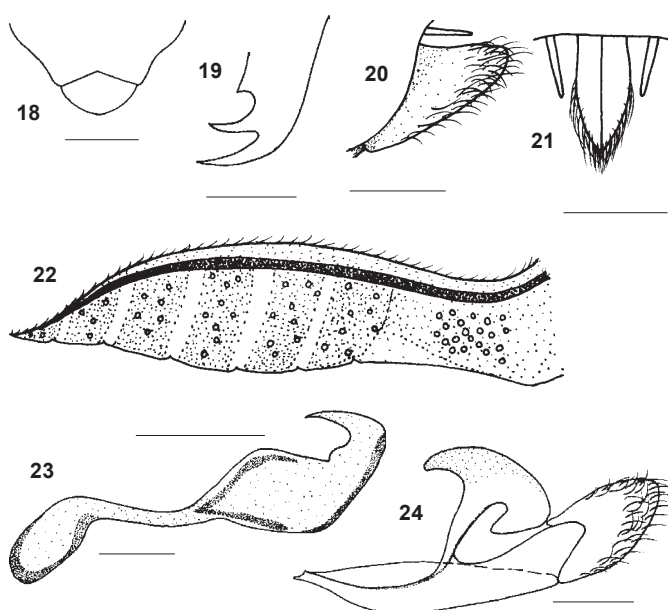
India: West Bengal, Nagaland.

**Etymology**

Species name is derived from the name of the state in which the type locality is situated.

**Diagnostic features**

On the basis of some outstanding key characters such as: abdomen brownish to black at least above, legs with some broad pale yellow markings, and area between supraantennal pit smooth *N. bengali* sp. nov. is closely related to *N. annandalei* (Rohwer). But the two can be separated as: abdomen with tergites two to basal ½ of five yellow (entirely black in latter), malar space 0.6x diameter of median ocellus (linear in latter), antennal segments three and four as 3:2 (5:4 in latter), scape equal to pedicel (longer than in latter), postocellar area wider



**Figures 18-24. *Nesoselandria bengali* sp. nov.**  
 18 - Clypeus and labrum; 19 - Tarsal claw; 20 - Lateral view of ovipositor sheath; 21 - Dorsal view of ovipositor sheath; 22 - Lancet; 23 - Penis valve; 24 - Gonoforceps.  
 Scale = 0.5mm

than long as 2:1 (3:1 in latter), inter- and circumocellar furrows distinct (indistinct in latter), lateral furrows distinct (shallow in latter), and clypeus triangularly emarginated (arcuately emarginated in latter).

**Female:****Colour:** Body black, aureate are: tergites 2-4, basal ½ of tergite five, all legs except infuscated apical 2 tarsal joints. Wings hyaline, venation including costa, subcosta and stigma fuscous.

**Structure:** Average length 4.5mm. Antenna 1.6x head width, scape equal to pedicel, segments 3 and 4 as 3:2; clypeus (Fig. 18) triangularly emarginate, labrum (Fig. 18) broader than long as 2:1 with rounded anterior margin; malar space 0.6x diameter of median ocellus; LID:IDMO:EL = 1.0:1.3:1.3, POL:OCL:OOL = 1.0:0.8:0.8; supraantennal pits deep and round, area between them smooth; frontal flat, at level of eyes; median fovea in form of distinct transverse pit above supraclypeal area; postocellar furrow absent, inter- and circumocellar furrows distinct; lateral furrows distinct diverging posteriorly and ending half way to hypothetical hind margin of head postocellar area wider than long as 2:1; head narrowing behind eyes; mesoscutellum subconvex, appendage ecarinate; ICD:ITD = 1.0:6.0; epicnemium separated from mesopleuron by fine furrow; tarsal claw (Fig. 19) with subapical tooth shorter than apical one basal lobe minute, metabasitarsus longer than following three joints combined as 4:3, IATS:MB:OATS = 1.0:2.6:0.9. Ovipositor sheath as in fig. 20 (lateral view), fig. 21 (dorsal view). Lancet (Fig. 22) having six serrulae.

**Sculpture:** Body almost impunctate, shining.**Pubescence:** Aureate, 0.5x scape length.**Male:** Average length 3.5mm. Similar to female. Genitalia: Penis valve (Fig. 23), gonoforceps (Fig. 24).***Nesoselandria iari* sp. nov.**

(Figs. 25-29)

**Material examined****Holotype:** Female, 07.v.1994, Tissa, Arunachal Pradesh, 700m, coll. M.S. Saini.**Paratype:** One female, 03.05.1992, Jowai, Meghalaya, 1500m, coll. V. Vasu.**Individual variation**

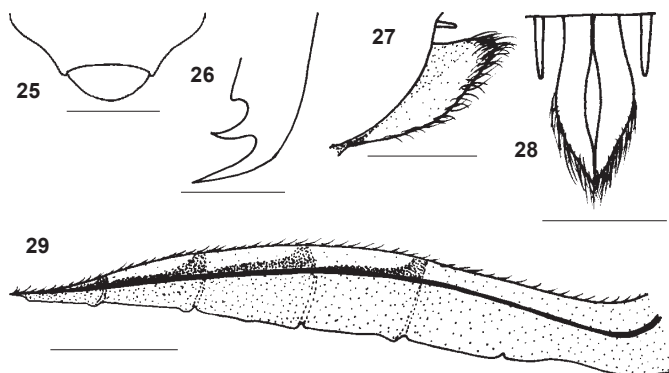
Both specimens alike.

**Distribution**

India: Arunachal Pradesh, Meghalaya.

**Etymology**

Species name is derived as an arbitrary combination of letters from the Indian Agricultural Research Institute, where the type material is housed.



Figs. 25-29. *Nesoselandria iari* sp. nov.

25 - Clypeus and labrum; 26 - Tarsal claw; 27 - Lateral view of ovipositor sheath; 28 - Dorsal view of ovipositor sheath; 29 - Lancet. Scale = 0.5mm

### Diagnostic features

*N. iari* sp. nov. is allied to *N. icar* sp. nov. from which it can be set apart as: scape and pedicel yellow, tergites 3-5 yellow, circumocellar furrow absent, lateral furrows fine and indicated just behind lateral ocelli in former whereas scape and pedicel black, tergites 2-5 yellow, circumocellar furrow fine, lateral furrows distinct and ending just before hypothetical hind margin of head in latter. On the other hand this species does not come close to any of the Oriental species described under this genus so far. The characters of taxonomic significance to keep it far apart from all other species are: clypeus circularly emarginate, malar space linear, IDMO:EL = 1.0:1.0, POL:OCL:OOL = 1.0:0.8:0.7, frontal flat and above level of eyes; median fovea in form of distinct transverse pit, post-, inter- and circumocellar furrows absent; lateral furrows fine and indicated just behind lateral ocelli and lancet having five serrulae.

### Female:

**Colour:** Body black, aureate are: scape, pedicel, tegula, tergites two except broad lateral spots, tergites 3-5 entirely, sternites 2-6; all legs except infuscated apical three tarsal joints of metalegs. Wings hyaline, venation including costa, subcosta and stigma fuscous.

**Structure:** Length 5.0mm. Antenna 1.7x head width, scape equal to pedicel, segments three and four as 5:4; clypeus (Fig. 25) circularly emarginate, labrum (Fig. 25) broader than long as 3:2 with rounded anterior margin, malar space linear; LID:IDMO:EL = 1.0:1.5:1.5, POL:OCL:OOL = 1.0:0.8:0.7; supraantennal pits deep and round, area between them smooth, frontal flat, above level of eyes; median fovea in form of distinct transverse pit above supraclypeal area; post-, inter- and circumocellar furrows absent; lateral furrows fine and indicated just behind lateral ocelli; postocellar area wider than long as 2:1; head narrowing behind eyes; mesoscutellum subconvex, appendage ecarinate; ICD:ITD = 1.0:5.0; epicnemium separated from mesopleuron by fine furrow; tarsal claw (Fig. 26) with subapical tooth shorter than apical one, basal lobe minute; metabasitarsus longer than following three joints combined as 4:3, IATS:MB:OATS = 1.0:3.0:0.9. Ovipositor sheath as in Fig. 27 (lateral view), Fig. 28

(dorsal view). Lancet (Fig. 29) having five serrulae.

**Sculpture:** Body almost impunctate shining.

**Pubescence:** Aureate, 0.4x scape length.

**Male:** Yet to be discovered.

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