

Anomalinae Collected by the Hokkaido University Expedition to Nepal Himalaya, 1968* (Hymenoptera: Ichneumonidae)

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Abstract

Six species belonging to 4 genera of the subfamily Anomalinae are reported from Nepal. Of them, 5 are new to science: *Anomalon nepalense*, *A. rufopetiolatum*, *Agrypon basimarginatum*, *A. primulum*, and *Erigorgus concavus*. A key is provided to distinguish the Nepalese species of *Anomalon* and *Agrypon*.

Key words: Hymenoptera, Ichneumonidae, Nepalese Anomalinae.

Introduction

This paper is a report on the Nepalese ichneumonflies of the subfamily Anomalinae based on material collected from Central Nepal by the Hokkaido University Expedition to the Nepal Himalaya, in 1968. Information on the description of the subfamily Anomalinae is very scarce and so far as I am aware only one species, *Heteropelma amictum* (FABRICIUS, 1775), had been known to occur in Nepal. In this paper 6 species are dealt with of which five are new to science.

The main part of the collection, including type specimens of the new species described herein, will be preserved in the collection of the Entomological Institute, Hokkaido University, Sapporo.

* Scientific results of Hokkaido University Expedition to the Himalaya, Entomology.

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1. *Anomalon nepalense* sp. nov. (Figs. 1, 10 & 15)

♀. Face about 1.4 times as wide as high at level of lower margin of antennal socket (Fig. 1), polished, weakly and sparsely punctate, the punctures a little stronger medially; clypeus (Fig. 1) comparatively wide, about 2.3 times as wide as high, weakly and very sparsely punctate, the punctures a little denser apically, its apex blunt, not reflexed, and its apical margin broadly rounded, without an apicomedian tubercle; malar space narrow, $2/7$ as long as basal width of mandible; upper tooth of mandible 1.5 times as long as the lower one; inner margins of eyes weakly convergent ventrally (Fig. 1); temple flat, rather densely haired, the hairs a little sparser towards eye, $5/9$ as long as eye in lateral view; occipital carina distinct, complete above, its lower part not sinuate and roundly curved inwards near base of mandible; distance between lateral ocelli and eyes as long as diameter of an ocellus; frons polished, finely and rather densely punctate, with a weak median longitudinal carina and with very weak and short trans-striae beside the median carina; yellow spot at top of eye small, indistinct, touching margin of eye. Flagellum with $20+\alpha$ (apical segments lacking), 1st flagellar segment about 4.9 times as long as wide at apex; 2nd flagellar segment about $1/2$ as long as the 1st and about 1.1 times as long as the 3rd. Pronotum polished, with 11 horizontal striae, the upper three striae very short, with a large impunctate area just behind epomia, very finely punctate on posterodorsal corner; epomia strong, roundly curved forward; mesoscutum rather coarsely reticulate-rugose on lower $1/2$ with very fine punctures; speculum polished and smooth; mesosternum with very fine, rather dense, setiferous punctures; metapleurum and propodeum strongly reticulate-rugose; 1st lateral area of propodeum distinct, roughly and weakly rugose with fine punctures; propodeal spiracle elliptic, about 2.7 times as long as wide. Venation of wings as in Figs. 10 & 15; nervulus postfurcal by $3/8$ of its own length; portion of cubitus between intercubitus and 2nd recurrent vein 1.9 times as long as intercubitus; postnervulus intercepted at its lower $2/3$; nervellus vertical; brachiella present on basal $7/9$; portion of cubitella between nervellus and intercubitella 1.8 times as long as nervellus. Leg with hind coxa rugulose on about basodorsal $2/3$; hind femur 5.4 times as long as wide in lateral view; hind basitarsus 1.8 times as long as the 2nd one; apical margin of front tibia without a tooth on outer side. Abdomen with 1st tergite polished, very sparsely haired, 5.1 times as long as wide at apex; postpetiole about 1.8 times as long as its basal width; 2nd tergite very finely and rather sparsely punctate, about 1.2 times as long as the 1st and 1.5 times as long as the 3rd; 3rd tergite a little more densely punctate than in the 2nd; ovipositor sheath about 1.8 times as long as the 1st tergite.

Black. Mandible dark brown to blackish, paler apically, the apical teeth dark reddish brown; palpi fuscous; scape and pedicel fuscous to infuscate, paler

ventrally; flagellum blackish. Tegula and subtegular ridge stained with dark brown. Front and middle legs with coxae, trochanters, and femora blackish brown; tibiae yellowish brown to fuscous; tarsi fuscous to infusate, paler basally. Hind leg with coxa blackish, dirty yellowish brown apically; trochanter and femur blackish, a little paler on ventral side of the former and apex of the latter; tibia and tarsus infusate. Abdomen black; apex of 1st and 2nd tergites yellowish brown; ovipositor light yellowish brown; ovipositor sheath infusate. Wings hyaline; stigma infusate.

Length: Body 8.6 mm., forewing 5.3 mm.

♂. Unknown.

Holotype: ♀, Nepal: Namche Bazar, No. 3 East, 2-vii-1968, T. KUMATA leg.

Distribution: Nepal

This species is very closely related to the Japanese *A. kurumense* KUSIGEMATI, 1983, but it is readily distinguished from the latter by the apical margin of the front tibia without a tooth on the outer side, the blunt apical margin of the clypeus which is not reflexed, the more coarsely reticulate-rugose scutellum and the propodeum with comparatively wide lateral areas. Furthermore, it is similar to the Holarctic and Oriental *A. foliator* (FABRICIUS, 1798), from which it is easily distinguished by the black head except for the mandible, palpi and spot at top of the eye, and pronotum with distinct, horizontal striae.

2. *Anomalon rufopetiolatum* sp. nov. (Figs. 2, 11 & 16)

♂. Face about 1.2 times as wide as high at level of lower margin on antennal socket (Fig. 2), polished, weakly and rather sparsely punctate, the punctures a little weaker laterally; clypeus (Fig. 2) rather narrow, 1.9 times as wide as high, weakly and rather sparsely punctate as in face, its apex thin, weakly reflexed, and its apical margin broadly rounded, without a apico-median tubercle; malar space narrow, 1/4 as long as basal width of mandible; inner margins of eyes rather strongly convergent ventrally (Fig. 2); temple slightly convex, rather densely haired, the hairs a little sparser towards eye, about 4/9 as long as eye in lateral view; upper tooth of mandible about 1.4 times as long as the lower one; occipital carina strong and complete, not interrupted above, the lower part not sinuate and roundly curved inward near base of mandible; distance between lateral ocelli and eyes about 1.3 times as long as diameter of an ocellus; frons polished, weakly and rather densely punctate, the punctures weaker dorsally, with a median longitudinal carina and with distinct trans-striae beside the median carina; yellow spot at top of eye small, indistinct, touching margin of eye. Antennae with flagellum 21-segmented; 1st flagellar segment 4.2 times as long as wide at apex; 2nd flagellar segment about as long as the 1st and 1.1 times as long as the 3rd. Pronotum polished, with 12 horizontal striae along posterior margin of pronotum, the upper

8 striae not reaching to the anterior margin of pronotum, with a large impunctate area just behind epomia, finely punctate on posterior corner; epomia strong, angularly curved forwards at the middle; mesoscutum subpolished, coarsely reticulate-rugose medially, rather strongly and densely punctate on anteromedian part; lateral lobe strongly and densely punctate mostly; posterior 1/8 of mesoscutum polished, very finely and rather sparsely punctate; scutellum coarsely reticulate-rugose, with a strong lateral carina; mesopleurum coarsely reticulate-rugose, with a densely haired area just below subtegular ridge; mesosternum distinctly and densely punctate; metapleurum and propodeum coarsely and strongly reticulate-rugose; speculum polished and smooth; 1st lateral area of propodeum distinct, narrow, sparsely haired, without rugae; propodeal spiracle elliptic, about 3.2 times as long as wide. Venation of wings as in Figs. 11 & 16; nervulus interstitial; portion of cubitus between intercubitus and 2nd recurrent vein 1.4 times as long as intercubitus; postnervulus intercepted at lower 3/4 of its own length; nervellus weakly reclivous; brachiella present on about basal 1/2; portion of cubitella between nervellus and intercubitella about 2.0 times as long as nervellus. Legs with hind coxa distinctly and rather densely punctate, the punctures sparser apically; hind femur 5.6 times as long as wide in lateral view; apical margin of front tibia without a tooth on outer side. Abdomen with 1st tergite virtually bare, with a few hairs on posterolateral side, 5.6 times as long as wide at apex; postpetiole 2.2 times as long as its basal width; 2nd tergite very finely and rather densely punctate, about 1.3 times as long as the 1st and 1.6 times as long as the 3rd; 3rd tergite a little more densely punctate than in the 2nd.

Black. Mandible yellowish brown, a little darker basally, the apical teeth reddish brown; palpi yellowish brown. Scape and pedicel yellowish brown, darker dorsally; flagellum fuscous to infusate, paler basally. Tegula dirty yellowish brown. Front and middle legs with coxae blackish, paler apically; trochanters, femora and tibiae light yellowish brown; tarsus light yellowish brown, apical 2 or 3 segments of front and middle tarsi fuscous. Hind leg with coxa dark reddish brown, darker basally; trochanter, femur, tibia and basitarsus dark brown to infusate. First tergite yellowish brown on basal 1/2, dark brown on apical 1/2, with a yellowish brown apical band. Wings hyaline; stigma infusate.

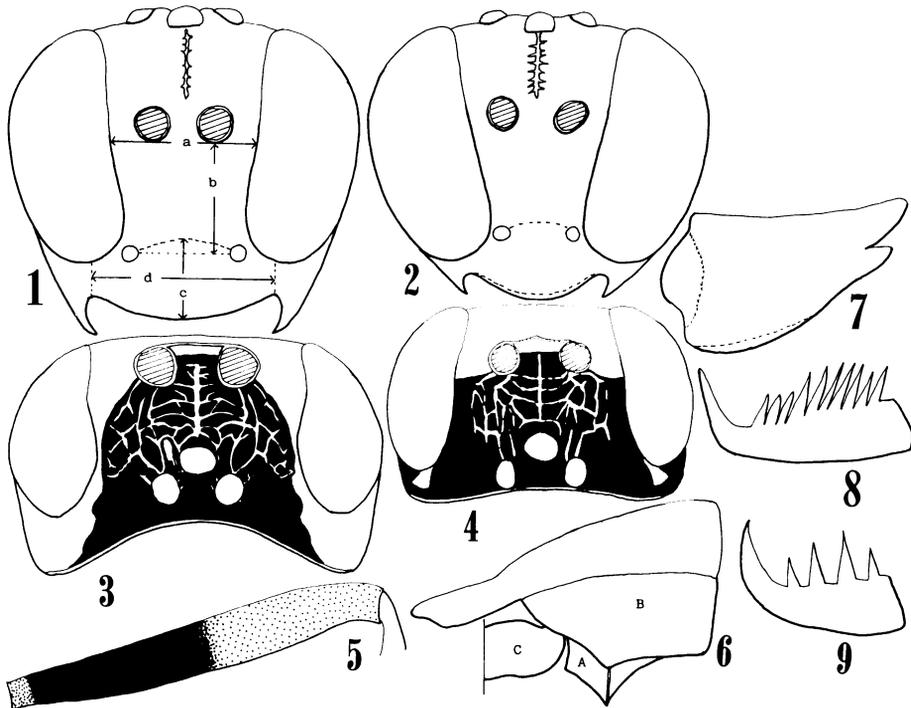
Length: Body 7.2 mm., forewing 3.8 mm.

♀. Unknown.

Holotype: ♂, Nepal: Biratanti, No. 4 West, 12-v-1968, T. KUMATA leg.

Distribution: Nepal.

This species is extremely similar to the Formosan *A. ohharai* KUSIGEMATI, 1983, in having the similar colouration of the abdomen, mandible, antennae, and legs, strongly punctate face and clypeus, and propodeum with a narrow 1st lateral area. The present species is distinct from the latter in having the interstitial nervulus, punctate dorsal side of the hind coxa, and mesopleurum with a very

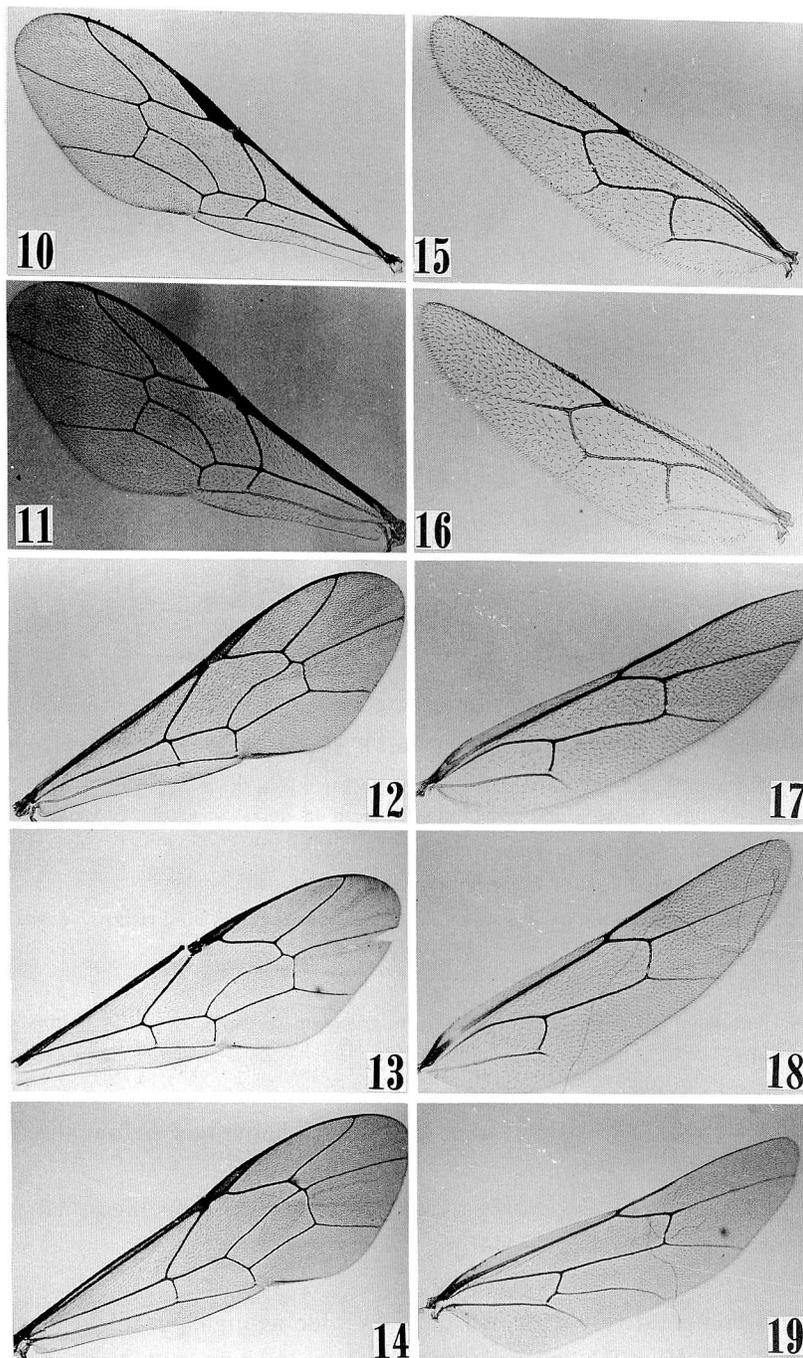


Figs. 1 & 2. Head in frontal view: (a, width of face; b, height of face; c, height of clypeus; d, width of clypeus): 1, *Anomalon nepalense* sp. nov., ♀; 2, *A. rufopetiolatum* sp. nov., ♂.
 Figs. 3 & 4. Carination, rugosity, and colouration of head in dorsal view: 3, *Agrypon basimarginatum* sp. nov., ♀; 4, *A. primulum* sp. nov., ♂.
 Fig. 5. Colouration of hind femur: *Erigorgus concavus* sp. nov., ♀.
 Fig. 6. Propodeum in lateral view (A, metasternum; B, mesopleurum; C, hind coxa): *A. basimarginatum* sp. nov., ♀.
 Fig. 7. Mandible: *E. concavus* sp. nov., ♀.
 Figs. 8 & 9. Pectination of hind tarsal claw: 8, *A. primulum* sp. nov., ♂; 9, *A. basimarginatum* sp. nov., ♀.

weakly and horizontally striate area with dense hairs just below the subtegular ridge.

The two species of *Anomalon* treated above may be distinguished from each other by the following key: —

1. Clypeus comparatively wide, 2.3 times as wide as high, its apical margin blunt, not reflexed (Fig. 1); mesopleurum with a strongly and horizontally striate area just below subtegular ridge; dorsal side of hind coxa rugose; wing with nervulus postfurcal by 3/8 of its own length (Fig. 10). Scape and pedicel infuscate; 1st abdominal tergite black, yellowish brown at extreme apex.
 1. *nepalense* sp. nov.



Figs. 10-19. Fore (10-14) and hind (15-19) wings: 10 & 15, *Anomalon nepalense* sp. nov., ♀; 11 & 16, *A. rufopetiolatum* sp. nov., ♂; 12 & 17, *Agrypon primulum* sp. nov., ♂; 13 & 18, *A. basimarginatum* sp. nov., ♀; 14 & 19, *Erigorgus concavus* sp. nov., ♀.

- Clypeus comparatively narrow, 1.9 times as wide as high, its apical margin thin, weakly reflexed (Fig. 2); mesopleurum with a very weakly and horizontally striate area with dense hairs just below subtegular ridge; dorsal side of hind coxa punctate; wing with nervulus almost interstitial (Fig. 11). Scape and pedicel yellowish brown; 1st abdominal tergite yellowish brown on basal 1/2, blackish on apical 1/2.2. *rufopetiolum* sp. nov.

3. *Heteropelma amictum* (FABRICIUS)

Ichneumon amictum FABRICIUS, Systema Entomologiae, p. 341, 1775.

Heteropelma amictum: GAULD, Bull. Brit. Mus. Nat. Hist. (Ent.), 34: 188, 1976.

Specimen examined. Nepal: 1 ♀, Swinket, No. 3 West, 15-v-1968, T. KUMATA leg.

Distribution: Nepal, India, Burma, Indonesia, Philippines, China, Formosa, Japan, and Eurasia.

4. *Erigorgus concavus* sp. nov. (Figs. 5, 7, 14 & 19)

♀. Face about 1.7 times as wide as high at level of lower margin of antennal socket, rather weakly and densely punctate, the punctures a little weaker and sparser laterally and centrally, with dense yellowish hairs; clypeus weakly convex, sparsely punctate, the punctures sparser ventrally, its apex sharply pointed at center; inner margins of eyes moderately strongly convergent ventrally; eye with very sparse and short hairs; malar space narrow, 2/7 as long as basal width of mandible; mandible stout, slightly tapering towards apex, strongly and rather sparsely punctate, the upper tooth 2.3 times as long as the lower one (Fig. 7); temple weakly swollen, weakly convergent posteriorly, very strongly and densely punctate, rugoso-punctate on lower 1/3, with rather dense, fuscous hairs, about 1.2 times as long as eye in lateral view; lower posterior corner of temple with a large, deep concavity; occipital carina weak dorsally, its lower end joining oral carina, and its lower 1/2 rather strongly elevated, lamella-like; frons weakly concave, rather strongly rugoso-punctate, with a very weak median longitudinal carina; vertex rugoso-punctate; distance between lateral ocelli and eyes 2.0 times as long as diameter of an ocellus; frons, temple, vertex and occiput with rather dense, fuscous to infuscate hairs. Flagellum short, 5.7 times as long as forewing, with 34 segments; 1st flagellar segment 3.0 times as long as wide at apex; 2nd flagellar segment about 1/2 as long as the 1st and 1.1 times as long as the 3rd. Pronotum strongly and densely punctate, rugoso-punctate entirely; epomia very weak, the upper part curved mesad near upper margin of pronotum; mesoscutum with deep, rather dense, irregularly spaced punctures; notaulus entirely absent; scutellum short, strongly

convex, deeply and rather sparsely punctate, with a distinct lateral carina; mesopleurum weakly reticulate-punctate, strongly and sparsely punctate; prepectus strong, above lower corner of pronotum, not reaching front margin of pronotum; postpectal carina widely interrupted in front of each middle coxa; metapleurum rather strongly convex, coarsely reticulate-rugose; propodeum a little more coarsely reticulate-rugose than in metapleurum; apex of propodeum extending to about basal 1/2; thorax, propodeum and hind coxa with rather dense, infusate hairs; mesosternum strongly and rather sparsely punctate, the punctures a little denser posteriorly. Venation of wings as in Figs. 14 & 19; nervulus postfurcal by about 2/7 of its own length; intercubitus basad of 2nd recurrent vein; portion of cubitus between intercubitus and 2nd recurrent vein about 4/9 as long as intercubitus; 2nd recurrent vein vertical; postnervulus intercepted at lower 4/9; nervellus strongly reclivous, intercepted at lower 4/9; discoidiella reaching to hind margin of wing, slightly curved backward; brachiella reaching near hind margin of wing; metacarpella with 15 hamuli. Leg with front coxa unspecialized; hind coxa polished, sparsely punctate, stout, 2.1 times as long as wide in lateral view; hind femur slender, cylindrical, 8.5 times as long as wide in lateral view; hind tibia 8.5 times as long as wide at apex including hairs; longer spur of hind tibia 1.1 times as long as the shorter one; basitarsus 2.5 times as long as the 2nd one, 7.4 times as long as wide at apex excluding hairs and a little longer than the 2nd and subsequent segments together except claws; hind tarsus unspecialized; tarsal claws weakly pectinate on about basal half. Abdomen with 1st tergite stout, 5.7 times as long as wide at apex; postpetiole stout, 1.4 times as long as wide at apex; 2nd tergite 1.1 times as long as the 1st and 1.6 times as long as the 3rd; apex of 1st sternite extending to basal 2/7 of postpetiole; epipleurum of 2nd tergite very narrow, separated by a crease; ovipositor sheath finely and vertically striate, wide, 5.0 times as long as wide at the middle and 2/7 as long as hind tibia.

Black, with legs and abdomen largely reddish brown. Face, clypeus, palpi and lower corner of frons yellow; mandible yellow with a large blackish marking on basal part, the apical teeth dark brown; malar space yellowish brown, a little darker posteriorly; outer orbit narrowly stained with yellowish to reddish brown. Tegula, scutellum and apex of propodeum reddish brown; mesepimeron yellowish brown; metapleurum with a large reddish marking on posteromedian portion. Scape black, yellowish brown on ventral side; pedicel and flagellum black. Front and middle legs with coxae, trochanters and femora light ferruginous, the dorsal side of coxae black; tibiae and tarsi yellowish brown. Hind leg with coxa, 1st trochanter, basal 1/2 of femur (Fig.5), and apical 1/3 of tibia black; 2nd trochanter, apical 1/2 of femur (Fig. 5) and basal 2/3 of tibia light ferruginous; tarsus yellowish brown, a little darker basally and apically. Abdominal tergite ferruginous, the basodorsal side of 1st tergite, basodorsal 2/3 of 2nd tergite, median

1/3 of lateral side of 4th and 5th tergites and 6th tergite except for ventral 1/4 and posterior 1/4, black. Ovipositor sheath light yellowish brown. Wings weakly stained with yellowish brown; stigma yellowish brown entirely.

Length: Body 18.3 mm., forewing 10.5 mm.

♂. Unknown.

Holotype: ♀, Nepal: Ghasa, Palpa, 8-v-1986, T. KUMATA leg.

Distribution: Nepal.

In general structure and colouration, this species is very closely allied to the Chinese *E. barbaricus* (MORLEY, 1913), from which it differs by the unequal mandibular teeth, the comparatively longer hind basitarsus, bicoloured hind femur, and the black and reddish brown 2nd, and 4th to 6th abdominal tergites. Further, it is also closely related to the Palearctic *E. melanops* (FOERSTER, 1855), from which it is readily distinguished by the strongly reclivous, the reddish brown scutellum, the bicoloured front and middle coxae, and the metapleurum with a large reddish brown spot.

5. *Aгрыpon primulum* sp. nov. (Figs. 4, 8 12 & 17)

♂. Head, thorax, propodeum and coxae covered with short, rather dense, silvery hairs. Face about 1.3 times as wide as high at level of lower margin of antennal socket, finely and densely punctate, the punctures sparser and weaker laterally, with a few, weak striae just below each antennal socket; clypeus slightly convex, densely and weakly punctate as in face entirely, its apex sharply pointed at center; inner margins of eyes moderately strongly convergent ventrally; malar space narrow, 1/4 as long as width of mandible; mandible rather small, weakly swollen on the outer surface, slightly tapering towards apex, with a few large punctures, its upper tooth about 2.0 times as long as the lower one; temple subparallel, distinctly and densely punctate, the punctures weaker and sparser towards eye, about 2/3 as long as eye in lateral view; occipital carina (Fig. 4) strong and complete, joining base of mandible; frons (Fig. 4) almost flat, rugose, very finely punctate on lateral 1/8, with a weak median longitudinal carina; vertex weakly and sparsely punctate, distance between lateral ocelli and eyes about 3/5 as long as diameter of an ocellus; yellow spot at top of eye small, triangular, touching eye margin (Fig. 3). Flagellum comparatively long, about 1.7 times as long as forewing, with 50 segments; 1st flagellar segment 6.0 times as long as wide at apex; 2nd flagellar segment 1/2 as long as the 1st and 1.1 times as long as the 3rd. Pronotum distinctly and horizontally striate on lower 2/3, rugose on upper 1/3; epomia distinct, long, the upper part curved forward and reaching to near center of pronotum; mesoscutum rather strongly rugoso-punctate, the apicomedian part of median lobe and sublateral parts of lateral lobe distinctly and rather densely punctate; posterior 1/8 of mesoscutum weakly and transversely

striate; scutellum weakly convex, almost flat, trans-rugose, with a rather strong lateral carina wholly; mesopleurum rugoso-punctate on upper half, strongly and rather densely punctate, the punctures weaker and sparser ventrally; prepectal carina distinct, ending at about lower $2/5$ of posterior margin of pronotum; postpectal carina widely interrupted in front of each middle coxa; lower corner of propleurum curved backwards, without a carina across the curve; mesosternum very finely and densely punctate; metasternum unspecialized; metapleurum coarsely reticulate-rugose. Propodeum coarsely reticulate-rugose on about basal $1/2$, trans-striate on apical $1/2$, apex of propodeum extending to about basal $4/5$. Venation of wings as in Figs. 12 & 17; nervellus postfurcal by about $2/7$ of its own length; intercubitus based of 2nd recurrent vein; portion of cubitus between intercubitus and 2nd recurrent vein about 0.9 times as long as intercubitus; 2nd recurrent vein weakly reclivous; postnervulus intercepted at upper $1/5$; nervellus weakly reclivous, not intercepted; discoidiella absent; brachiella present on basal $2/3$; metacarpella with 9 hamuli. Leg with front coxa, in ventral view, with a carina along its front edge; hind coxa about $1/2$ as long as wide in lateral view; hind femur slender, weakly clavate, 6.8 times as long as wide in lateral view; hind tibia 1.5 times as long as wide at apex including hairs; hind tarsus unspecialized; longer spur of hind tibia about 1.2 times as long as the shorter one; hind basitarsus 11.2 times as long as wide at apex excluding hairs and 1.1 times as long as the 2nd and subsequent segments together except claws; tarsal claws strongly pectinate (Fig. 8). Abdomen with 1st tergite 9.5 times as long as wide at apex, the basodorsal side not flattened, without lateral edge; 2nd tergite 1.1 times as long as the 1st and about 2.1 times as long as the 3rd; epipleurum of 2nd tergite separated by a crease.

Black, with hind leg and abdomen largely reddish brown. Face, clypeus, mouth part except for apical teeth of mandible, $1/2$ of temporal orbit and a triangular spot at top of eye yellow (Fig. 4); scape yellowish brown ventrally, fuscous dorsally; pedicel infusate; flagellum dark reddish brown to infusate, darker apically, the basal $1/2$ of 1st flagellar segment blackish. Tegula dark brown. Front and middle legs with coxae, trochanters, tibiae and tarsi yellow to light yellowish brown; femora light ferrugineous; apical two segments of front tarsus and apical three segments of middle tarsus fuscous to infusate. Hind leg with coxa, trochanter and femur ferrugineous, the dorsal side of trochanter, and basodorsal side of femur infusate; tibia light ferrugineous on about basal $2/3$, infusate on about apical $1/3$; 1st and 2nd tarsal segments and basal $1/2$ of 3rd tarsal segment light yellowish brown; basal $1/2$ of 3rd segment of tarsus and apical two segments of tarsus fuscous to infusate. Abdomen ferrugineous, dorsal side of 2nd tergite infusate; 6th tergite except basoventral side and 7th and 8th tergites, and clasper blackish; subgenital plate yellowish brown. Wings weakly tinged with yellowish brown; stigma yellowish brown, fuscous along anterior margin.

Length : Body 15.2 mm., forewing 7.3 mm.

♀. Unknown.

Holotype : ♂, Nepal : Balaju, Kathmandu, 16-iv-1968, T. KUMATA leg.

Distribution : Nepal.

This species is very similar to the Indian *A. nox* MORLEY, 1913. It differs from the latter in having the unspecialized hind basitarsus, the frons with a weak median longitudinal carina, the black frontal orbit except for the lower lateral corner, and the tarsal claws which are distinctly and closely pectinate.

6. *Aгрыpon basimarginatum* sp. nov. (Figs. 3, 6, 9, 13 & 19)

♀. Head, thorax, propodeum and coxae covered with rather dense, short, silvery hairs. Face about 1.6 times as wide as high at level of lower margin of antennal socket, weakly and rather densely punctate, with short, oblique striae just below antennal socket; clypeus slightly convex, rather densely punctate as in face, bare on apical part, its apex sharply pointed at center; inner margins of eyes rather strongly convergent ventrally; malar space about $3/7$ as long as width of mandible; mandible stout, weakly tapering towards apex, strongly and rather sparsely punctate, the upper tooth 1.5 times as long as the lower one; temple subparallel, weakly swollen, weakly and rather densely punctate, the punctures weaker and sparser towards eye, wide, about $8/9$ as long as eye in lateral view; distance between lateral ocelli and eyes 2.0 times as long as diameter of an ocellus; frons (Fig. 3) flat, moderately strongly reticulate-rugose, with a weak median longitudinal carina; vertex sparsely and weakly punctate, without rugae; occipital carina (Fig. 3) strong and complete, joining base of mandible. Flagellum comparatively short, about 1.3 times as long as forewing, with 44 segments; 1st flagellar segment 4.4 times as long as wide at apex; 2nd flagellar segment about $3/5$ as long as the 1st and slightly longer than the 3rd. Pronotum strongly and horizontally striate on lower $2/3$, strongly and rather densely punctate on upper $1/3$; epomia straight, weak, far distant from upper margin of pronotum; mesoscutum strongly and densely punctate, the punctures weaker posteriorly and apicomediaally, weakly trans-striate on posterior part; notaulus distinct, reaching posterior $2/7$, replaced by trans-rugae; scutellum flat, strongly rugoso-punctate, with weak lateral carina; mesopleurum strongly and densely punctate, the punctures weaker and sparser posteroventrally, with a large rugose area just below subtegular ridge; lower corner of propleurum curved backwards, without a carina across the curve; prepectal carina strong, above lower corner of pronotum; postpectal carina widely interrupted in front of each middle coxa; metasternum specialized, with a pair of strongly raised protuberances (Fig. 6). Metapleurum and propodeum coarsely and strongly reticulate-rugose; apex of propodeum extending to basal $5/9$ of hind coxa. Wings (Figs. 13 & 18) with nervulus postfurcal by $2/5$ of its own length; intercubitus

basad of 2nd recurrent vein; portion of cubitus between intercubitus and 2nd recurrent vein about $5/6$ as long as intercubitus; 2nd recurrent vein weakly reclivous; nervellus rather strongly reclivous, not intercepted; discoidiella absent; brachiella very short; postnervellus intercepted at upper $2/9$; metacarpella with 11 hamuli. Leg with front coxa, in ventral view, with a carina along its front edge; hind coxa stout, 2.1 times as long as wide in lateral view; hind femur slender, weakly clavate, about 6.2 times as long as wide in lateral view; hind tibia 8.7 times as long as wide at apex including hairs; hind tarsus unspecialized; longer spur of hind tibia about 1.3 times as long as the shorter one; hind basitarsus 10.9 times as long as wide at apex excluding hairs and 1.2 times as long as the 2nd and subsequent segments together except claws; tarsal claws weakly pectinate (Fig. 9). Abdomen with 1st tergite 6.7 times as long as wide at apex, the basodorsal $1/4$ flattened, edged on lateral side; 2nd tergite about 1.3 times as long as the 1st and about 2.0 times as long as the 3rd; epipleurum of 2nd tergite separated by a crease; ovipositor sheath about $5/7$ as long as hind tibia.

Black, with hind leg and abdomen largely reddish brown. Face, clypeus, mouth parts except for apical teeth of mandible, malar space, temple, frontal orbit, lateral half of vertex, yellow, the yellow marking of frontal orbit narrowed near top of eye (Fig. 3); scape yellow; pedicel infusate; flagellum light reddish brown, the basal half of 1st flagellar segment infusate. Tegula light yellowish brown. Front and middle legs with coxae and trochanters yellow; femora, tibia, and tarsi light yellowish brown. Hind leg with coxa reddish brown; trochanter blackish, femur reddish brown, blackish at base; tibia reddish brown on about basal $2/3$, infusate on about apical $1/3$; 1st to 4th tarsal segments light yellowish brown; 5th tarsal segment fuscous. Abdomen reddish brown, the dorsal side of tergite infusate; 5th and 6th tergites almost entirely blackish, the apical part and ventrolateral side of each tergite reddish brown; ovipositor sheath light yellowish brown. Wings weakly stained with yellowish brown; stigma fuscous.

Length: Body 16.7 mm., forewing 8.6 mm.

♂. Unknown.

Holotype: ♀, Nepal: Biratanti, No. 4 West, 30-iv-1986, T. KUMATA leg.

Distribution: Nepal.

This species is easily distinguished from the congeneric species in having the metasternite with a pair of peculiar protuberances. Furthermore, this species is similar to the preceding species, *A. primulum* sp. nov., but it is easily distinguished by the basodorsal side of the 1st tergite which is flattened, and edged laterally, the entirely yellow temple and frontal orbit, etc. as stated in the key

Two species of *Agrypon* treated above may be distinguished from each other by the following key: —

1. Prepectal carina distinct, above lower corner of pronotum; epomia weak,

- straight, its end far distant from dorsal margin of pronotum; apex of propodeum extending to basal 5/9 of hind coxa; metasternum with a pair of strongly raised protuberances (Fig. 6). Tarsal claws weakly pectinate (Fig. 9). Basodorsal side of 1st tergite flattened, and edged laterally. Temple entirely, and frontal orbit (Fig. 3) yellow.....6. *basimarginatum* sp. nov.
- Prepectal carina distinct, its upper end extending to about lower 2/5 of posterior margin of pronotum; epomia strong, long, its upper part curved forward and reaching near center of pronotum; apex of propodeum extending to basal 4/5 of hind coxa; metasternum without a specialized protuberance. Tarsal claws strongly and closely pectinate (Fig. 8). Basodorsal side of 1st tergite unspecialized, convex and not edged laterally. Temple black, the lower half of tempolar orbit yellow (Fig. 4); lower corner of frons and spot at top of eye yellow. (Fig. 4).....5. *primulum* sp. nov.

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References

- CUSHMAN, R. A. 1937. SAUTER's Formosan-Collection: Ichneumonidae. Arb. Ueber Morph. Taxon. Ent., 4: 283-311.
- GAULD, I. D. 1976. The classification of the Anomalinae (Hymenoptera: Ichneumonidae). Bull. Brit. Mus. Nat. Hist. (Ent.), 33: 1-135.
- GUPTA, V. K. 1987. The Ichneumonidae of the Indo-Australian area (Hymenoptera). Mem. Amer. Ent. Inst., 41: 1-1210.
- KUSIGEMATI, K. 1983. Some Anomalinae of Formosa (Hymenoptera: Ichneumonidae). Mem. Kagoshima Univ. Res. Center S. Pac., 4: 104-118.
- 1983. A new *Anomalon* (Hymenoptera: Ichneumonidae) from Japan. Akitu, 58: 1-4.
- 1985. A new species of *Anomalon* from Japan (Hymenoptera: Ichneumonidae). Mem. Fac. Agr. Kagoshima Univ., 21: 195-198.
- 1986. New host records of Ichneumonidae (Hymenoptera) from Japan (V). Kontyû, 54: 25-28.
- MOMOI, S. 1968. Notes on some *Anomalon* species, with a key to eastern Palearctic species (Hymenoptera: Ichneumonidae). Mush, 42: 63-70.
- MORLEY, C. 1913. A revision of the Ichneumonidae based on the collection in

- the British Museum (Nat. Hist.) with descriptions of new genera and species. Part II., 140 pp., British Museum, London.
- 1913. Fauna of British India, Including Ceylon and Burma. Hymenoptera III. Ichneumonidae. 531 pp., Royal & Francis, London.
- TOWNES, H. 1971. The genera of Ichneumonidae, part 4. Mem. Amer. Ent. Inst., 17 : 1-372.
- UCHIDA, T. 1928. Zweiter Beitrag zur Ichneumoniden-Fauna Japans. Jour. Fac. Agr. Hokkaido Imp. Univ., 21 : 177-297.
- 1958. Anomalinen und Therioninen in der sammlung des Entomologischen Instituts der Hokkaido Universitaet (I). Ins. Mats., 21 : 85-108.
- 1958. Anomalinen und Therioninen in der sammlung des Entomologischen Instituts der Hokkaido Universitaet (II). Ins. Mats., 22 : 40-58.
- WANG, S. F. 1984. New species of Chinese *Agrypon* FOERSTER, I. (Hymenoptera : Ichneumonidae). Acta Zootaxnomica Sinica, 9 : 187-196.
- 1984. New species of Chinese *Agrypon* FOERSTER II. (Hymenoptera : Ichneumonidae). Acta Zootaxonomica Sinica, 9 : 309-317.

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