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continued on the back inside cover

Cover: Common Keeled Skink *Eutropis carinata* in oil pastels, colour pencils, & micron pen adapted from photograph by H. Byju © Pooja Ramdas Patil.



A new record of genus *Synedrus* Graham, 1956 with description of male of *Synedrus kasparyani* Tselikh, 2013 from India

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Abstract: The genus *Synedrus* Graham, 1956 is recorded from India for the first time. The male of *Synedrus kasparyani* Tselikh, 2013 is described. Additional characters and images of female are also provided.

Keywords: Biocontrol, citrus, diversity, Pteromalidae, parasitoids, Rutaceae, taxonomy.

The genus *Synedrus* Graham, 1956 based on the type species *Synedrus cavigena* Graham, 1956 was described from France. The genus is represented by only three species, viz: *Synedrus crassicornis* Graham, 1992 (from France); *Synedrus kasparyani* Tselikh, 2013 (from Russia & South Korea), and *Synedrus transiens* (Walker, 1835) (from Bulgaria, Czech Republic, Czechoslovakia, Netherlands, Sweden, United Kingdom, and Russia).

As such there is no host record for the species of *Synedrus* Graham, 1956 except *Synedrus transiens* (Walker, 1835) has been found to be associated with Fagaceae family (*Quercus* sp.) (Noyes, 2019). In the present study, both male and female specimens of *Synedrus kasparyani* Tselikh, 2013 were found to be associated with Rutaceae family (*Citrus* sp.).

MATERIALS AND METHODS

The specimens were collected during field survey from Jammu & Kashmir in June 2021 with aspirator from

Citrus and preserved in 80% alcohol. Specimen were examined under MAGNUS MSZ-Bi binocular microscope at FRI, Dehradun and genus level identification was done with the key of Bouček & Rasplus (1991); species level identification was done with that of Tselikh (2013) and Graham (1969). For the better description of the characters, photographs have been taken under Leica M-205C trinocular stereo zoom microscope fitted with HD camera, and images were analyzed with LAC-16 image analyzing software at systematic laboratory, Forest Entomology Discipline, ICFRE-FRI, Dehradun.

Morphological terminology follows Gibson (1997). Following abbreviations used in this paper are: POL—posterior ocellar line, the minimum distance between the posterior ocelli | OOL—ocello-ocular line, the minimum distance between the posterior ocellus and eye | F1–F6, funicular segments (antennal segments between anelli and clava); FW—forewing | SMV—submarginal vein | MV—marginal vein | PMV—postmarginal vein | STV—stigmal vein | T1–T6—tergum 1 to 6.

Specimen deposition: The specimens were deposited in National Forest Insect Collection (NFIC), Forest Research Institute, Dehradun, India and accession number was obtained.

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RESULT AND DISCUSSION***Synedrus* Graham, 1956**

Genus *Synedrus* Graham, 1956 can be identified by the combination of characters: antennal formula 11353, while 11263 in male, 3rd anelli quadrate in female with micropilosity extending up to base of clava; pronotal collar carinate in both sexes; scutellum convex in profile/lateral view. Nucha reticulate and long, median carina absent; traces of transverse carina are present; petiole transverse; stigma of FW moderately capitate; PMV longer than MV.

The male specimen of *Synedrus kasparyani* Tselikh, 2013 has been described here and the notes and illustrations of female specimen has been provided.

***Synedrus kasparyani* Tselikh, 2013**

2013. Tselikh, E.V. Chalcid wasps of the family Pteromalidae (Hymenoptera, Chalcidoidea) of the Kuril Islands. *Entomologicheskoe Obozrenie*. 92(3): 620–621.

Synedrus kasparyani has been described from Russia based on the female type. It is first time recorded from India and its detailed morphological diagnostic note is provided here.

Female: (Image 1A–L). Body length 2.3 mm.

Coloration: Head, mesosoma golden yellow, gaster green with golden reflection; Eyes cupreous, ocelli silvery white; mandibles yellowish except teeth testaceous; palpi yellowish; antennae with scape and pedicel pale yellowish, anelli & flagellum brownish; FW hyaline, veins paler; legs with all coxae concolorous with mesosoma, rest of legs yellowish except tips of tarsal segments brown. Sculpture: Head strongly & uniformly reticulate, clypeal margin demarcated from face with striae radiating from face, clypeal region comparatively smoother from rest of face, reticulation on gena finer; mesosoma strongly but nonuniformly reticulate, mesoscutum and scutellum with deep & strong reticulation, axillar reticulation broader but superficial, axillula with small reticulation; mesoscutum & dorsellum smooth & shiny, nucha strongly reticulate, callus smooth.

Additional characters

Head: white curved hairs present on head; Antennae 11353, 3rd anelli quadrate; maxillary palpi 4-segmented; genal suture prominent.

Mesosoma: pronotal collar much narrower than mesoscutum, hind margin of mid lobe of mesoscutum produced, prepectus small, median carina absent, metanotum including dorsellum smooth & shiny; plicae sharply present, traces of transverse carina are present,

spiracles oblong are of normal size, a spine or finger-nail like structure is present on both the sides of callus, long white hairs present on both sides of callus; FW bare in basal part, basal setal line present, cubital setal line absent, SMV 0.36x as long as FW length, stigma of FW moderately capitate, uncus present, short marginal fringes also present.

Metasoma: T1 longest, its hind margin slightly produced; hind margin of each tergite with at least one row of white setae, hypopygium reaching half of gaster (base of T4); ovipositor, exerted outside last tergite.

Material examined: 2 female, India: Jammu & Kashmir: Hidyāl; 23.vi.2021; coll. Mubashir Rashid; Accession number- FRI/NFIC/22304-A,B.

Biology: Specimens were collected from *Citrus* sp.

***Synedrus kasparyani* Tselikh, 2013**

Description: Male: (Image 2A–I). Body length 1.97 mm.

Color: (Image 2A–I). Head, mesosoma metallic green with diffuse coppery lustre, mandibles yellowish-brown except teeth brownish, eyes dark brown; antennae brownish with scape yellowish and pedicel testaceous; FW hyaline, veins brown. Legs with all coxae concolorous with mesosoma, proximal part of hind femur testaceous, rest of legs yellowish, tips of tarsal segments brown. Gaster bluish blackish or brownish with median part yellowish.

Sculpture: Head and mesosoma strongly and uniformly reticulate except clypeal region smooth with striae radiating from mouth margin, reticulation on malar region finer, axillar edges smooth; frenal area and nuchal reticulation same; metanotum, dorsellum, and callus smooth.

Head: (Image 2B–E). Clypeal margin with broad and short tooth, clypeal region distinctly separated from face with striae radiating from mouth margin. Head in frontal view 1.36x as broad as head height and dorsally 2.22x as broad as long; eyes 2.47x as long as broad; malar space 0.53x as long as eye length; antennal toruli-vertex 0.61x as long as antennal toruli-clypeus; distance between eyes 0.62x as long as head breadth; POL 1.27x OOL; temple 0.18x as eye length. Genal suture strongly present; Mandibles with four teeth each. Antennae (Images 2D,E) 11263, inserted nearly in the middle of face with scape reaching or slightly above median ocelli, antennal scrobes shallow, all flagellar segments hairy, distinctly longer than broad; pedicel somewhat globular, F1 approximately 2x pedicel, clava longer than two preceding flagellar segments combined (F5+F6).

Mesosoma: (Image 2F–H). Mesosoma, 1.6x as long

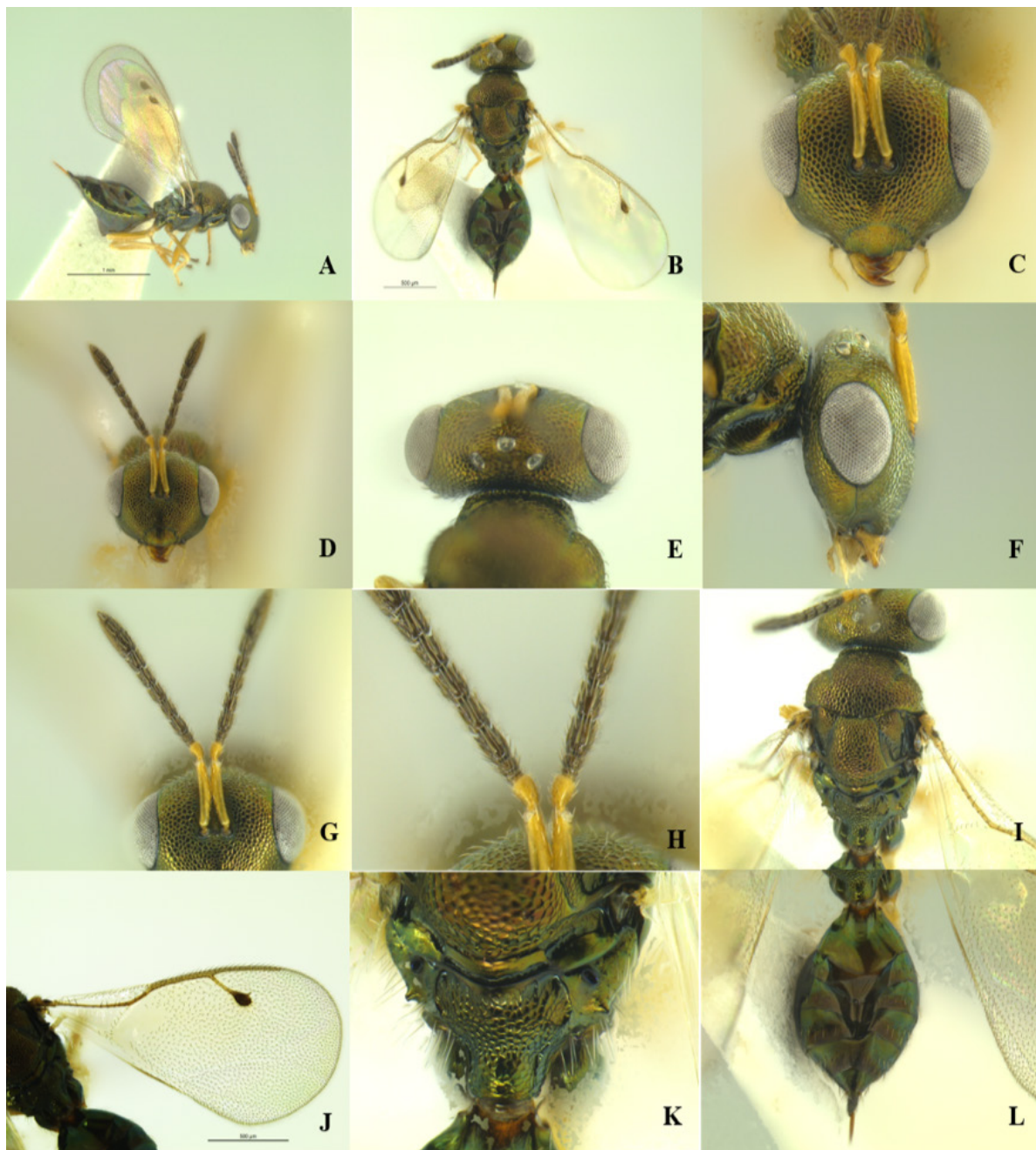


Image 1. *Synedrus kasparyani* Tselikh. Female: A—body profile | B—body dorsal view of the body | C & D—head in frontal view | E—head in dorsal view | F—head in lateral view | G & H—antennae | I—mesosoma | J—forewing | K—propodeum | L—metasoma. © Mubashir Rashid & Arvind Kumar.

as broad; pronotum short, carinate, 0.11x as long as mesoscutum; mesoscutum 0.56x as long as broad, notauli incomplete; scutellum 1.08x as long as broad, axillar groove anteriorly wide apart so that scutellum broadly borders on mesoscutum. Propodeum (Image 2G) with median carina absent, plicae sharply present, traces of transverse carina are present, spiracular sutures broad and oval; spine like structure (Image 2G) present

on both sides of callus in female; nucha reticulate and long. FW (Image 2H) hyaline, veins brown, 2.15x as long as broad; SMV 0.35x as long as FW; MV longer than STV (1.16X) but shorter than PMV, MV 0.76x as long as PMV; STV 0.65x PMV; stigma of FW moderately capitate and brown. Basal cell with few setae; costal cell with few scattered setae; speculum broad and closed below.

Metasoma: (Image 2). Gaster elongate (4.02x as long

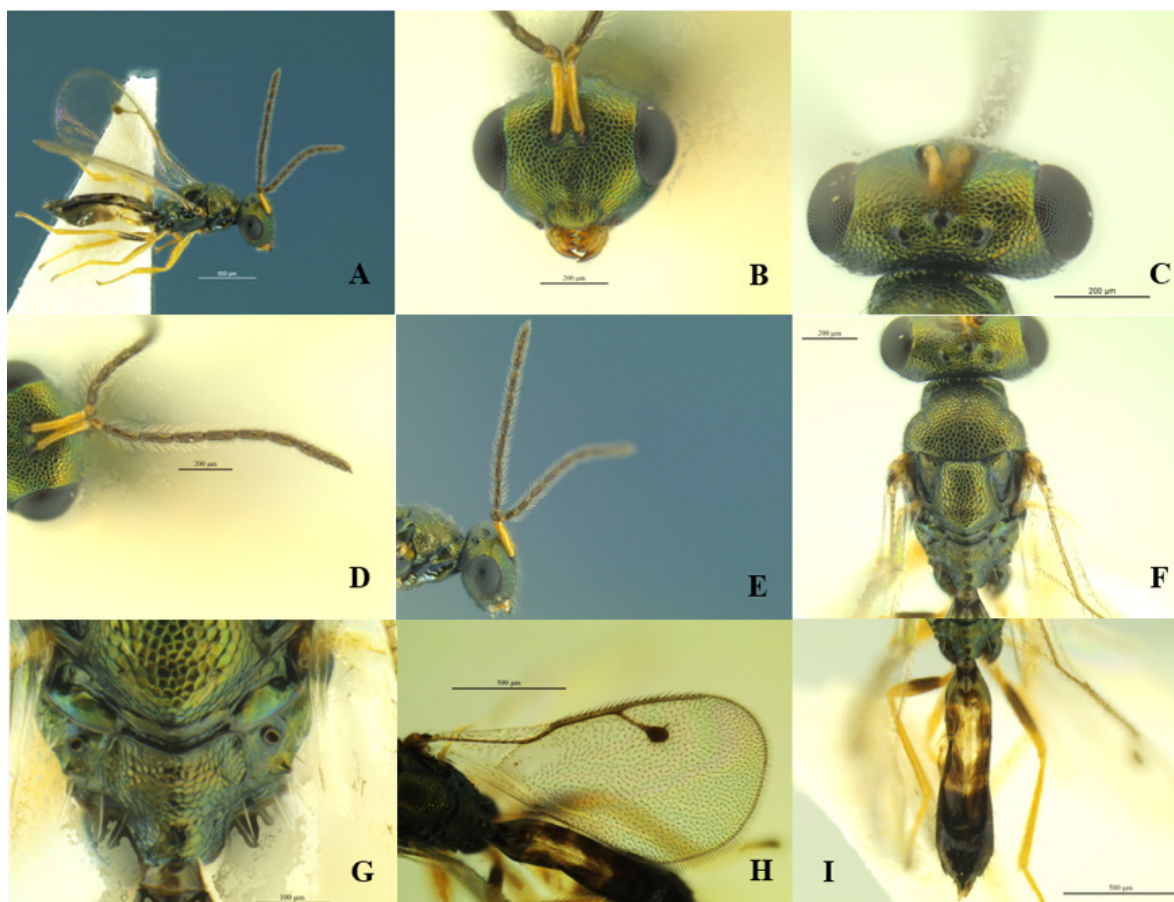


Image 2. *Synedrus kasparyani* Tselikh. Male: A—body profile | B—head in frontal view | C—head in dorsal view | D & E—antennae | F—mesosoma | G—propodeum | H—forewing | I—metasoma. © Mubashir Rashid & Arvind Kumar.

as broad), dorsally bluish or blackish or brownish with median part yellowish, distinctly longer than mesosoma (1.35x), a row of white hairs present on each tergite.

Material examined: 2 males, India: Jammu & Kashmir: Hidyāl; 23.vi.2021; coll. Mubashir Rashid; Accession number- FRI/NFIC/22304-C, D.

Distribution: Russia (only female); South Korea; India: Jammu & Kashmir (new record both male and female).

Biology: Not known. Associated with citrus plant and collected with the help of aspirator.

DISCUSSION

The female specimen of *Synedrus kasparyani* Tselikh was described by Tselikh in 2013 from Russia and the male specimen of *Synedrus kasparyani* Tselikh is described for the first time, collected from Jammu & Kashmir, India, and the genus *Synedrus* Graham is recorded first time from India.

REFERENCES

- Bouček, Z. & J.Y. Rasplus (1991). Illustrated key to West-Palaearctic genera of Pteromalidae (Hymenoptera: Chalcidoidea). *Institut National de la Recherche Agronomique, Paris*, 140 pp.
- Gibson, G.A.P. (1997). Annotated Keys to the Genera of Nearctic Chalcidoidea (Hymenoptera) Chapter 2. Morphology and Terminology, pp. 16–44. In: Gibson, G.A.P., J.T. Huber & J.B. Woolley (eds.). *Annotated Keys to the Genera of Nearctic Chalcidoidea (Hymenoptera)*. National Research Council of Canada, NRC Research Press, Ottawa Canada, xi + 794 pp.
- Graham, M.W.R.de V. (1956). A revision of the Walker types of Pteromalidae (Hym., Chalcidoidea). Part I (including descriptions of new genera and species). *Entomologist's Monthly Magazine* 92: 97.
- Graham, M.W.R.de V. (1992). A new species of *Synedrus* (Hym., Pteromalidae) from France. *Entomologist's Monthly Magazine* 128: 23.
- Tselikh, E.V. (2013). Chalcid wasps of the family Pteromalidae (Hymenoptera, Chalcidoidea) of the Kuril Islands. *Entomologicheskoe Obozrenie* 92(3): 620–621.
- Walker, F. (1835). *Monographia Chalciditum* (continued). *Entomological Magazine* 3(2): 192.

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Articles

Unearthing calf burials among Asian Elephants *Elephas maximus* Linnaeus, 1758 (Mammalia: Proboscidea: Elephantidae) in northern Bengal, India

– Parveen Kaswan & Akashdeep Roy, Pp. 24615–24629

Coexistence of Indian Pangolin *Manis crassicaudata* (Geoffroy, 1803) (Mammalia: Pholidota: Manidae) and Indian Crested Porcupine *Hystrix indica* (Kerr, 1792) (Mammalia: Rodentia: Hystricidae) in Purulia District, West Bengal, India

– Debosmita Sikdar, Shwetadri Bhandari & Sanjay Paira, Pp. 24630–24645

Avifaunal assemblage patterns in Bharathapuzha River Basin, Kerala, India

– Pazhayattuparambil Narayanan Anoop Raj, Avadhoot Dilip Velankar & Padmanabhan Pramod, Pp. 24646–24657

Desmids of Brahmaputra valley, a major southern Asian river basin

– Soumin Nath & Partha Pratim Baruah, Pp. 24658–24693

Communications

Distribution status and roost characteristics of Indian Flying Fox *Pteropus medius* Temminck, 1825 (Mammalia: Chiroptera: Pteropodidae) in Kurukshetra district, Haryana, India

– Ritu Devi & Parmesh Kumar, Pp. 24694–24706

Avifauna of four protected areas of Terai-Arc Landscape, India: significant records and a checklist of species

– Shariq Safi, Tanveer Ahmed, Junid Nazeer Shah, Meraj Anwar & Kamlesh K. Maurya, Pp. 24707–24729

Monitoring observations of the southernmost breeding population of Long-billed Vultures *Gyps indicus* (Scopoli, 1786) (Aves: Accipitriformes: Accipitridae) in the Nilgiri Biosphere Reserve, India

– S. Manigandan, H. Byju & P. Kannan, Pp. 24730–24736

Observations on Indian Skimmer *Rynchops albicollis* Swainson, 1838 (Aves: Charadriiformes: Laridae) breeding colonies in Middle Ganges stretch, India

Kumar Ankit, Mujahid Ahamad, Vivek Ranjan, Sanjay Kumar, Syed Ainul Hussain & Govindan Veeraswami Gopi, Pp. 24737–24745

Avifaunal diversity in urban greenspaces within Cotabato city, Mindanao Island, Philippines

– Joan Rhea Mae L. Baes, Peter Jan D. de Vera, John Paul A. Catipay, Marian Dara T. Tagoon & Elsa May Delima-Baron, Pp. 24746–24751

Waterbird count at Narathali waterbody, Buxa Tiger Reserve in northern Bengal for a decade (2009–2019) with a note on raptors

– Sachin Ranade & Soumya Sundar Chakraborty, Pp. 24752–24759

First confirmed reproduction by a translocated female Siamese Crocodile *Crocodylus siamensis* (Crocodylidae: Crocodilia) with observations of nest attendance and nest-associated fauna

– Steven G. Platt, Sounantha Boutxakittilath, Oudomxay Thongsavath, Samuel C. Leslie, Lonnie D. McCaskill, Randeep Singh & Thomas R. Rainwater, Pp. 24760–24768

Erode Ground Gecko *Cyrtodactylus speciosus* (Beddome, 1870) (Squamata: Gekkonidae) from peri-urban common-lands of Coimbatore, India, with comments on habitat associations

– S.R. Ganesh, N.A. Swaathi & Usha Ravindra, Pp. 24769–24774

Assessment of diversity of Odonata fauna in selected sites of Purba Bardhaman district, West Bengal, India

– Sulagna Mukherjee & Rabindranath Mandal, Pp. 24775–24785

A preliminary assessment of butterfly diversity from Mekhliganj town, Cooch Behar District, West Bengal, India

– Abhirup Saha, Prapti Das & Dhiraj Saha, Pp. 24786–24794

Utilization of *Afzelia africana* Sm. ex Pers. (Magnoliopsida: Fabales: Fabaceae) in Nigeria and its implications for conservation

– Samuel Oloruntoba Bamigboye, Muhali Olaide Jimoh, Falilat Abeni Lawal, Zainab Temitope Osiyemi, Charles Petrus Laubscher & Learnmore Kambizi, Pp. 24795–24803

Short Communications

Gastrointestinal parasites of the Indian Flying Fox *Pteropus medius* in Nagpur City: a seasonal study through faecal sample analysis

– Ruchika R. Sangale & Priya Gawande, Pp. 24804–24806

***Plagiochila javanica* (Sw.) Nees & Mont. (Marchantiophyta: Plagiochilaceae) rediscovered from the Western Ghats after 180 years**

– M.S. Sajitha, C.N. Manju, B. Mufeed, K.P. Rajesh & K.K. Rawat, Pp. 24807–24811

A new record of genus *Synedrus* Graham, 1956 with description of male of *Synedrus kasparyani* Tselikh, 2013 from India

– Mubashir Rashid & Arvind Kumar, Pp. 24812–24815

Note

***Hunteria zeylanica* (Retz.) Gardner ex Thwaites (Magnoliopsida: Gentianales: Apocyanaceae)—new addition and first genus record to the flora of Karnataka**

– G. Ramachandra Rao, Pp. 24816–24818

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